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CRABS FROM THE MALDIVE ISLANDS.

By MARY J. RATHBUN.

WITH ONE PLATE.

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No. 5. — *Crabs from the Maldive Islands.*

By MARY J. RATHBUN.

THIS collection, aside from a few land crabs and swimming crabs taken at the surface, was obtained in the lagoons of the Maldive atolls in depths of from sixteen to thirty fathoms by the expedition of Alexander Agassiz in 1901–1902. The majority come from Nallandu, Miladummadulu Atoll. Of a total of twenty-eight species, six species seem to be new. Major Alcock has described nearly all the known forms in his "Materials for a Carcinological Fauna of India;" therefore the references to synonymy are not repeated here except where different conclusions have been reached as to the identity of species.

It will be noted that our list furnishes several additions to the Land Crustaceans, Portunidæ, and Xanthidæ given by Borradaile in Gardiner's Fauna and Geography of the Maldive and Laccadive Archipelagoes, I. 1901–1902.

The drawings were made by Miss A. A. McKnew.

OCYPODIDÆ.

Ocypode ceratophthalma (PALLAS).

Ocypoda ceratophthalma ALCOCK, Journ. Asiatic Soc. Bengal, LXIX. 345, 1900, and synonymy.

Ocypode ceratophthalma BORRADAILE, Fauna Maldive Arch., I. part I. pp. 67 and 96, 1901.

Male, December 23; 2 young. Kolumadulu, December 30; 9 young.

Uca tetragonon (HERBST).

Gelasimus tetragonum ALCOCK, Journ. Asiatic Soc. Bengal, LXIX. 357, 1900, and synonymy.

Male, December 23; 5 males.

This species is subject to considerable variation in the following directions:—The front may be an oblong lobe, as figured by Milne Edwards,¹ or may be

¹ Ann. Sci. Nat. (3), XVIII. pl. III. fig. 9, 1852.

triangular and subacute, as represented by de Man;¹ the outer margin of the beveled edge is more or less spatuliform. The granular line defining the lateral margin may be present for two-thirds the length of the margin or may be evident only near the antero-lateral angle, without regard to sex. In all the specimens I have examined (27 from 9 localities), the granules of the carpus of the large claw, though small, are visible to the naked eye. The inner surface of the palm is more or less coarsely granulate; the immobile finger more or less strongly curved.

The color of the Maldive examples in alcohol is dark green or blue, with patches of yellow speckled with mulberry at the antero-lateral angles; large cheliped yellow with large brick-red patch at base of pollex; smaller cheliped and legs light mulberry.

Macrophthalmus verreauxi MILNE EDWARDS.

Macrophthalmus verreauxi ALCOCK, Journ. Asiatic Soc. Bengal, LXIX. 377, 1900, and synonymy.

Gan Island, Addu Atoll, at anchorage, 20 fathoms, January 6; one female, 13.5 mm. wide, and 9.1 mm. long, in which the eyes project beyond the carapace for *more than half* ($\frac{57}{100}$) of their length.

Goneplax maldivensis, sp. nov.

Figs. 3-5.

The length of the carapace is nearly two-thirds of its greatest width. The lateral margins are provided with a strong acute tooth at their anterior fourth, which projects outwardly beyond the antero-lateral angle.

Front wider than orbit, margin sinuous, with a shallow median tooth and a notch at the outer angle in which the antenna is lodged; an impressed line just above the margin.

The supra-orbital margin is sinuous and slopes backward and outward; its outer angle is blunt.

The posterior width of the carapace is nearly three-fourths of the fronto-orbital width.

The surface is punctate under the lens, and closely covered with finer wrinkles. The H-shaped depression in the centre is very shallow.

The eyes almost attain the outer angle of the orbit, the cornea is light-colored in alcohol, and on the under side extends one-half the length of the stalk.

The lower margin of the orbit has a shallow lobe near its middle.

The antero-external angle of the merus of the outer maxillipeds is produced, the anterior margin is excavate.

¹ Notes Leyden Mus., XIII. pl. II. fig. 6, 1891.

The chelipeds are massive, unequal; the larger one is about twice as long as the carapace. The upper margin of the merus has a few denticles and a blunt subterminal tooth; the posterior margin and inferior surface are crossed by a subterminal groove. The inner angle of the carpus forms a blunt, almost rectangular tooth. The palm is nearly as wide as the length of its upper margin; the dactylus is shorter than that margin in the larger cheliped, and longer in the smaller one. The lower margin of the propodus has a shallow sinus between palm and finger. The fingers are broad, white, not gaping, occludent margins irregularly dentate, tips crossing, outer and inner surface each with two lines of larger punctæ.

The surface of the chelipeds is similar to that of the carapace except that the fine wrinkles are interrupted by minute transverse irregular smooth patches.

The merus joints of the ambulatory legs are devoid of a spine on the upper margin. The propodus and dactylus of the last pair are considerably shorter and broader than in the three preceding; the propodus is wider than half of its length measured on the anterior margin; the dactylus is straight, not curved, on its anterior margin.

The first segment of the abdomen of the male is hidden under the carapace; the second is narrowed at the sides and does not fully cover the sternum; the third reaches the coxæ of the fifth pair of legs; the remaining segments are very narrow, the terminal one much longer than broad.

Dimensions. — Length of carapace, 5.1 mm.; width at exorbital angles, 7.5 mm.; greatest width, 7.8 mm.; posterior width, 5.5 mm.; width of front between the antennal notches, 2.5 mm.; width of front between the supra-orbital margins, 3.4 mm.

Type locality. — Gan Island, Addu Atoll, at anchorage, 20 fathoms, January 6; one male.

This species differs from *G. rhomboides* (Linnæus) of Europe, in its wider front and shorter eyes, in the carapace being widest at the line of the lateral teeth, in the absence of a spine from the legs, in the much narrower abdomen of the male.

GRAPSIDÆ.

Metasesarma rousseauxi MILNE EDWARDS.

Metasesarma rousseauxii ALCOCK, Journ. Asiatic Soc. Bengal, LXIX. 427, 1900, and synonymy.

Metasesarma rousseauxi BORRADAILE, Fauna Maldive Arch., I. part I. pp. 68 and 97, 1901.

Marco, Fadiffolu Atoll, at anchorage; one male, one female with ova. In the male, 9.2 mm. long by 10.2 mm. wide, the fingers when apposed, gape except at the tips.

GECARCINIDÆ.

Epigrapsus politus HELLER.

Epigrapsus politus ALCOCK, Journ. Asiatic Soc. Bengal, LXIX. 443, 1900, and synonymy.

Marco, Fadiffolu Atoll, at anchorage; one small male 7.8 mm. long and 9.5 mm. wide, in which the lateral tooth is faintly indicated.

PALICIDÆ.

Palicus jukesii (WHITE).

Palicus jukesii ALCOCK, Journ. Asiatic Soc. Bengal, LXIX. 451, 1900, and synonymy. CALMAN, Trans. Linn. Soc. London (2), Zool., VIII. 29. pl. I. figs. 9-13, 1900.

Hanimadu, Tiladummati Atoll, at anchorage, 16 fathoms, January 19; one female with ova.

Nallandu Island, Miladummadulu Atoll, at anchorage, 24 fathoms, January 18; one immature male.

***Palicus contractus*, sp. nov.**

Figs. 7-8.

Carapace wider anteriorly than posteriorly, and about as long as its width measured between the bases of the third and fourth pairs of legs.

Surface thrown into five transverse wrinkles; the first depression runs directly across the carapace just behind the orbits; the second is the cervical suture; the third is parallel to, and not far from, the second, the fourth is behind the cardiac region. There is a short deep longitudinal depression either side of the mesogastric area. The surface is covered with scabrous granules which are larger on the more elevated portions.

Front cut into two broad rounded lobes. Antero-lateral border with three teeth, including the orbital angle, the third rudimentary. Second tooth projecting laterally more than the first. Behind the second tooth, the margins are sinuous and convergent. Posterior border raised, entire.

Upper border of the orbit with two notches, the inner one the deeper; anterior margins of inner and outer orbital angles concave; lower border with two broad and deep notches. The end of the basal joint of the antenna forms a large lobe visible in a dorsal view, either side of the front. There are three lobules on the eye-stalk, and a large bilobed one at the antero-external angle

of the buccal cavern. The two ridges on the ischium of the outer maxillipeds are further apart than in *P. jukesii*.

The chelipeds of the immature male are equal and very slender, scarcely stouter than the last pair of legs, and about as long as the carapace. The palm is a little shorter than the ischium and nearly twice as long as the fingers, which are bent down, deeply grooved, and meet throughout their length.

In the first three pairs of legs the merus is stout and broad, with a granular dorsal surface and coarsely and unevenly serrulate edges, the anterior edge ending in a crest-like tooth. The carpus is dorsally bicarinate and its anterior border has the form of a two-lobed carina. The propodus and dactylus are edged with thin sharp carinæ, that on the anterior margin of the carina of the second and third pairs being plumed. The fourth pair are cylindrical and finely granular, the dactylus considerably shorter than the propodus, the latter having a posterior marginal border of setæ.

The first pair of ambulatory legs are a little longer, the fourth pair a little shorter, than the carapace, the second and third pairs about one and a half times as long as the carapace.

In the male all the abdominal terga except the last are transversely carinate, the carinæ of the second and third terga being most conspicuous. Also on either side of the sternum there are two crests, one behind the base of the last pair of legs, the other almost in a line with the third abdominal carina.

Dimensions. — Male, length of carapace, 6.4 mm.; width between outer orbital angles, 6.9 mm.; width between tips of next lateral teeth, 7.7 mm.; width between bases of second and third legs, 6 mm.

Color. — In alcohol there are traces of dark speckles; there is a larger circular spot on each protogastric region and each cardiac lobule.

Type locality. — Nallandu, at anchorage, 24 fathoms, January 18; two males, immature.

This species can be separated at sight from all others by the carapace being wider in front than behind.

PILUMNIDÆ.

Carpilodes pediger ALCOCK.

Carpilodes pediger ALCOCK, Journ. Asiatic Soc. Bengal, LXVII. 83, 1898. Illus. Zool. Investigator, Crust., part VII. pl. XXXVI. fig. 4, 1899.

Male, at anchorage, January 11; one male.

Nallandu, at anchorage, 24 fathoms, January 18; two females, one with ova.

The specimens are all small, the female with ova measuring 3.7 mm. long and 5.8 mm. wide; its carapace is a light yellowish red in alcohol, with lateral teeth gray and mottlings of gray on the posterior half.

Actæa spinosissima BORRADAILE.

Actæa spinosissima BORRADAILE, Fauna Maldive Arch., I. part 3. p. 256. fig. 55, 1902.

Nallandu, at anchorage, 24 fathoms, January 18; two young.

Xanthias alcocki, sp. nov.

Figs. 9-10.

The surface of the carapace is granular, the granules coarse on the anterior and antero-lateral portions, very fine on the posterior part. Fronto-orbital region marked off by a sinuous groove. Regions well delimited. There is a short transverse crest on each epigastric, protogastric, hepatic and anterior branchial region.

The front is marked by a double edge, the lower or true edge not visible in a strictly dorsal view, outer angle very slightly marked. Notches of supra-orbital margin minute.

Antero-lateral margin cut into four teeth besides the inconspicuous outer angle of the orbit; the first and fourth teeth are very small, the second and third of good size, triangular, the tip of the second pointing a little forward, the third directed outward. A subhepatic protuberance is visible between the orbital and the first antero-lateral tooth.

The chelipeds in the female are nearly equal, stout, less than twice the length of the carapace. Outer surface covered with scaly granules. Merus nearly hidden under the carapace, margins finely serrulate. Carpus with a few larger granules. Granules of hand larger above than below, some of them disposed to form longitudinal rows. Fingers rather long, deflexed, grooved, tips crossing; light brown in alcohol, the color on the pollex not reaching quite to the palm; dactylus of right or larger hand with a large tooth at its base.

Ambulatory legs finely granular; upper margins of meral and carpal joints serrulate. Dactyli pubescent, propodal joints sparsely so.

Dimensions. — Length of carapace of female, 3 mm.; width, 4.4 mm.

Type locality. — Nallandu, 24 fathoms, at anchorage, January 18; one mature and one young female.

Pilumnus woodworthi, sp. nov.

Figs. 11-12.

Carapace nearly three-fourths as long as broad, deeply areolated, covered with a short dense pubescence mixed with longer hairs; when this is removed, fine granules may be seen on the anterior portion of the gastric region and

towards the antero-lateral margin. The frontal and orbital region is set off by a sinuous groove.

Fronto-orbital width greater than length of carapace; front divided by a deep median notch into two broad oblique rounded lobes having at their outer ends a small triangular tooth.

The superior margin of the orbit has two triangular notches, the outer one much the larger; a broad gap below the outer angle. No subhepatic tooth. Antennal flagellum sparingly fringed with hair.

The lateral margin is cut into three teeth besides the outer orbital; the last one has a spinule at the extremity.

Chelipeds unequal. Chelipeds and legs pubescent and hairy, except the lower distal portion of the larger palm which is bare, and also the extremity of the digits. The surface of the wrist is smooth except toward the inner angle where it is spinulose; the angle itself is tipped by a small spine. The outside of the palms is covered with subacute granules or tubercles arranged largely in rows, and becoming smaller toward the lower margin; similar granules ornament the fingers except towards the end. The thumb is short, in the large cheliped shorter than its height.

The legs are rather broad, pubescent, and beset with long hairs on the margins.

Dimensions. — Length of mature female, 5.4 mm.; width, 7.6 mm.; fronto-orbital width, 6 mm.; lower width of front, 2.9 mm.

Type locality. — Nallandu, at anchorage, 24 fathoms, January 18; one female.

This species is near *P. sluiteri* de Man,¹ but is distinguished by its wider carapace, relatively wider across the front and orbits, forming straighter sides, its deeper areolation and shorter immovable finger.

Pilumnus hirsutus STIMPSON?

Pilumnus hirsutus STIMPSON, Proc. Acad. Nat. Sci. Phila., X. 37 [34], 1858. Not *P. hirsutus* HASWELL, 1882, nor BORRADAILE, Proc. Zool. Soc. London, 1900, p. 581. pl. XLII. fig. 9, and Fauna Maldive Arch., I. pt. III. 245, 1902.

One young specimen, 3.2 mm. wide, from the centre of Male Lagoon, 30 fathoms (December 26), seems to be nearer *P. hirsutus* than any other species.

The following is Stimpson's description extracted from his unpublished report on the Crustacea of the North Pacific Exploring Expedition:

"Body and feet hirsute above, not very thickly, with setæ of variable but moderate length. Carapax scarcely areolate, broad; proportion of length to breadth, 1: 1.43; surface nearly smooth. Antero-lateral margin short, with four sharp teeth, including the angle of the orbit; no subhepatic tooth. Inferior margin of orbit denticulated. Eyes with rather long peduncles. Front emarginate, with a row of long setæ just above the margin. Chelopoda rather small; larger hand

¹ See Alcock, Journ. Asiatic Soc. Bengal, LXVII. 194, 1898.

irregularly tuberclose above, smooth below; smaller hand (the left one) spinulose above, and sparsely granulose on the outer side; fingers pale brownish.

"Color a clear light brick-red. Beneath pale red; sternum white. Fingers with brown tips. Eyes straw-colored. Dimensions of a female;—length of carapax, 0.31; breadth, 0.43 inch.

"The carapax of the specimen taken at Ousima is more swollen than that of the others, and less hairy;—there are a few tufts of long hairs, 4 or 6 to each tuft; two on the gastric region are most conspicuous.

"De Haan's description of his *P. minutus* (Fauna Japonica, Crust. p. 50) applies very well to our species; but his figure (Pl. III. f. 2) is by no means a good representation of it. The body in that figure is smooth, the feet very slender and little hairy. The postero-lateral margin is represented as convex, while it is rather concave in our species.

"Dredged in the Northern China Sea, from a shelly bottom in twenty fathoms. Also found among dead corals taken from a sandy bottom in 30 fathoms off the east coast of Ousima. A single specimen, probably of this species, was taken at the Bonin Islands."

In 1896, the "Albatross" collected in Hakodate Bay, Japan, 11½ fathoms (station 3656), a single male, 5.5 × 7.3 mm., which is referred here. The lobes of the front are oblique, finely denticulate, and at their outer end there is a small spine. The tubercles of the palms are arranged somewhat in rows and are sharp—rather stout spines than tubercles. Wrists also spinous. The ambulatory legs have a few spines on anterior margin of merus.

The young *Pilumnus* from Male agrees in all respects with the male from Hakodate Bay, as far as its size permits, except that the tubercles of the larger palm extend a little lower down on its outer surface.

I am not sure that this is the *P. hirsutus* of Alcock, described as having frontal lobes shaped as in *P. vesperilio*.

PORTUNIDÆ.

Portunus sanguinolentus (HERBST).

Neptunus sanguinolentus ALCOCK, Journ. Asiatic Soc. Bengal, LXVIII. 32, 1899, and synonymy.

West of Goadu, Miladummadulu Atoll, surface, January 19; one young male.

Portunus (Xiphonectes) longispinosus (DANA).

Neptunus (Hellenus) longispinosus ALCOCK, Journ. Asiatic Soc. Bengal, LXVIII. 40, 1899, and synonymy. BORRADAILE, Fauna Maldive Arch., I. part I. p. 208, 1901.

Male, at anchorage, January 11; one mature female. In this specimen the median sinus of the front is shallower and broader than the submedian.

Two types (♂ and ♀) of Dana's *Xiphonectes longispinosus* are preserved in the Museum of Comparative Zoology. The surface of the carapace is very uneven, the frontal teeth rounded, the intervening sinuses shallow and of equal depth, a well-marked sinus below the outer orbital angle, the inner suborbital angle rounded, the merus of the maxilliped reaches part way along the inner suborbital tooth. Width of male between tips of lateral spines, 14.2 mm., of female, 12.8 mm.

Thalamita oculea ALCOCK.

Thalamita oculea ALCOCK, Journ. Asiatic Soc. Bengal, LXVIII. 76 and 91, 1899.
Illus. Zool. Investigator, Crust., pt. VIII. pl. XLVIII. figs. 3. 3a, 1900.

Gan Island, Addu Atoll, 20 fathoms, at anchorage, January 6; one immature male.

Nallandu Island, 24 fathoms, at anchorage, January 18; one young.

In the male (5.9 mm. long), the fourth lateral tooth is much smaller than the fifth. That spine on the outer margin of the upper surface of the hand which is remote from the finger, though smaller than the other spines, is well marked. The length and breadth of the sixth abdominal somite are subequal.

In the young specimen the fourth lateral tooth is rudimentary, the fifth is subequal to the third.

? *Archias*,¹ sp.

Nallandu Island, 24 fathoms, January 18. Two very young specimens, one 2.6 mm. long and 3.2 mm. wide, are not referable to any known species. The carapace is quadrate or *Thalamita*-like, while the narrow, elongated basal joint of the antenna and the remoteness of the inner suborbital angle from the front, place the species in the neighborhood of *Archias*, *Lupocyclus*, and *Carupa*.

The carapace is somewhat granulous and traversed by two transverse ridges, one across the gastric region, the other further back, connecting the posterior of the lateral teeth. The intra-orbital width is a little over half the width of the carapace; the margin of the front is divided into four shallow lobes, the inner pair about one-third as wide as the outer, and slightly more advanced. Inner supra-orbital angles obscurely defined.

The antero-lateral margins are straight and parallel to each other, cut into 4 subequal, sharp-pointed teeth with a rudiment of another between the last two. The postero-lateral margins are concave and moderately convergent.

The orbits are very large (as also the eyes), with slight dorsal inclination; no fissures visible on the margin. The inner end of the lower margin is angular but not prominent, projecting very little beyond the buccal cavity.

The basal joint of the antenna is more than twice as long as broad, it widens

¹ *Archias* Paulson, Crustacea of the Red Sea, 1875, p. 56.

very slightly towards the distal end, and lies for nearly its whole length in the broad orbital hiatus; the second joint reaches the margin of the front.

The buccal cavity widens considerably at its anterior end. The merus of the outer maxilliped is not dilated at its antero-external angle.

The chelipeds are stouter and not so long as the legs, the arm and the hand of about equal thickness. Three spines on inner border of arm; the customary spine (of good size) at inner angle of wrist, and a few smaller spines on its outer surface; three spines on palm, one at angle of wrist, and two side by side nearer the fingers. Dactylus longer than upper surface of palm.

First three pairs of legs slender, also the basal segments (including the carpus) of the last pair; merus of last pair with a spine toward the end of its lower margin.

It is probable that the adult of this species will prove to have the same relation to Archias that Thalamita has to Charybdis.

CANCRIDÆ.

Kraussia nitida STIMPSON.

Fig. 13.

Kraussia nitida STIMPSON, Proc. Acad. Nat. Sci. Phila., X. 40 [37], 1858. MIERS, Crust. Alert, 235, 1884. ? CALMAN, Trans. Linn. Soc. London (2), Zool., VIII. 24, 1900. Not *K. nitida* HENDERSON, Trans. Linn. Soc. London (2), V. 379. pl. XXXVII. fig. 9, 1893, nor ALCOCK, Journ. Asiatic Soc. Bengal, LXVIII. 98, 1899.

Kraussia integra BORRADAILE, Fauna Maldive Arch., I. pt. III. p. 270, 1902. Not *K. integra* DE HAAN.

Nallandu, 24 fathoms, at anchorage, January 18; two males, one female.

Distribution. — North China Sea, lat. 23°, 24 fathoms, and Kagosima Bay, Japan, 20 fathoms (Stimpson). Thursday Island, Torres Straits, 4–5 fathoms (Miers).

A comparison of Stimpson's unpublished figure with that of Henderson seems to indicate two distinct species. The Maldivic specimens agree sufficiently with Stimpson's figure. The fronto-orbital width is nearly two-thirds the full width of the carapace, the frontal lobes are subequal and equally produced; in Henderson's species, as represented by his figure and by a specimen in the United States National Museum from Samoa, the fronto-orbital width is only half as great as that of the carapace, the median lobes of the front are much narrower and less advanced than the lateral pair.

In the Samoan specimen of *K. nitida* Henderson (which I will call *K. hendersoni*), a large male, 17.5 mm. long and 20.5 mm. wide, fronto-orbital width 10.6 mm., the outer surface of the palm is faintly rugulose, the dactylus serrulate, the inner angle of the wrist has sharp granules, and the adjacent margin

is spinulous, the last three joints of the legs are provided with denticulations. According to Alcock, who may have had small specimens, the chelipeds are quite smooth except for a few granules at the inner angle of the wrist, and the last three joints of the legs are without any denticulations or have only a trace of them on the propodite.

In the Maldivic examples of *K. nitida* Stimpson, the surface of the chelipeds and legs is similar to that of *K. hendersoni*, the rugæ of the palm being a little more distinct. The dactyli of the legs are considerably longer and slenderer; in the second pair they are 4 times, in *K. hendersoni* 3 times, as long as wide. Furthermore, in *K. nitida*, the notch below the outer angle of the orbit is more pronounced, the basal antennal joint is narrower, the color of the thumb does not run back on the palm as in *K. hendersoni*.

Dimensions. — Male from Nallandu: Length, 7.7 mm.; width, 8.4 mm.; fronto-orbital width, 5.4 mm.

MAIIDÆ.

Oncinopus aranea DE HAAN.

Oncinopus aranea ALCOCK, Journ. Asiatic Soc. Bengal, LXIV. 183, 1895, and synonymy.

Nallandu, 24 fathoms, at anchorage, January 18; one young male.

Halimus tenuicornis (Pocock).

Hyastenus tenuicornis ALCOCK, Journ. Asiatic Soc. Bengal, LXIV. 215, 1895, and synonymy. Illus. Zool. Investigator, part VI. pl. XXXIII. fig. 4, 1898.

Nallandu, 24 fathoms, at anchorage, January 18; 2 females (one with eggs).

Halimus agassizii, sp. nov.

Fig. 6.

Carapace oblong-triangular, slightly pointed behind, the regions well-defined, sparsely setose, tuberculated, or spinulous, as follows:— 7 sharp tubercles or spinules disposed in a cross on the gastric region, 3 on the median line, 4 forming a Y on the cardiac region, one near the lateral boundary of that region, one on the intestinal region, 3 spines near the outer margin of the branchial region, 2 smaller spines further in, one marginal hepatic spine. Posterior margin granulate; parallel to it another row of granules.

The rostrum consists of 2 slender slightly divergent spines, which in the male are one-half as long as the carapace proper; margins rough with fine spinules and fringed with setæ.

The angles of the supra-ocular cave are produced, the anterior is acuminate,

the posterior acute; between it and the post-ocular lobe there is a small tooth on the orbital margin.

The basal antennal joint has a spine at its anterior outer angle visible from above. The merus of the outer maxillipeds is expanded at the antero-external angle.

The chelipeds and legs are more or less roughened. The chelipeds of the male are a little stouter than the trunk-legs and one and a third times as long as the carapace, exclusive of rostrum. The palm has on its outer face 2 longitudinal furrows which are continued on the fingers; these are gaping for two-thirds their length.

The first ambulatory leg is two and a third times as long as the carapace (rostrum excluded); though longer than the second pair, there is hardly more difference than between the second and third. The fourth leg is missing. The merus joints are armed with 3 or 4 long slender spines, the carpal joints with two. Dactyli very slender and spinulous.

The ridges of the sternum and abdomen are granulated.

Dimensions.—Length of carapace exclusive of horns, 4.7 mm., width, 3.4 mm., length of horns, 2.3 mm.

Type locality.—One male was taken at Nallandu at the anchorage in 24 fathoms, January 18.

The tooth on the superior orbital margin connects this species with the genus *Naxioides*; the spines on the legs separate it from other species of *Halimus*.

PARTHENOPIDÆ,

Lambrus (Rhinolambrus) longispinis MIERS.

Lambrus (Rhinolambrus) longispinis ALCOCK, Journ. Asiatic Soc. Bengal, LXIV. 266, 1895, and synonymy.

Centre of Male Lagoon, 30 fathoms, December 26; one female with ova, 7.7 mm. long, 7.2 mm. wide.

Lambrus (Rhinolambrus) bispinosus, sp. nov.

Figs. 1-2.

Carapace nearly as long as wide; 2 strong median spines, one gastric, the other cardiac; a blunt oblique ridge on the branchial region, between which and the gastric and cardiac regions are two pits; postero-lateral angle strongly elevated; irregular granules distributed sparingly on the branchial ridge and between it and the cardiac region, on the slopes of the cardiac region, on the anterior half of the gastric region, hepatic region slightly roughened, a single granule on the genital region. Otherwise the carapace is almost smooth.

The rostrum is broad, prominent, declivous, blunt.

The orbital margin is prominent, above finely crenulate, on the outside fluted and denticulate. The postorbital constriction is strongly pronounced.

The hepatic region is well marked off, its margin is sub-rectangular, with two or three shallow teeth.

The branchial region has on the antero-lateral margin 6 teeth with finely crenulated edges, and on the postero-lateral margin about 4 irregular lobes. The blunt tooth or spine at the extremity of the branchial ridge is the most elevated point of that region, but the carapace is widest at the first tooth outside the ridge.

Posterior margin subentire.

The chelipeds in the adult female are one and a half times as long as the carapace, and unequal. The inner and outer margins of the arm are each bordered by about 8 irregular lobes, of which 2, one at the middle and one at the distal end of the outer margin, are the largest; upper surface with one tubercle and a few granules in a longitudinal series.

The surface of the wrist is rough; there is a prominent lobe at the middle of the outer margin; a tubercle on the inner margin.

The upper surface of the hand has 2 strong laminate lobes near the wrist, the outermost pointing backward and outward, the innermost further from the wrist and directed forward and inward. The inner and outer surfaces are crossed by an obliquely longitudinal line of tubercles of which 2 or 3 are enlarged. Otherwise, except for a few granules, the surface is smooth and punctate. Lower margin of arm and hand denticulate.

The fingers are somewhat gaping when closed, in the larger cheliped, their extreme margins, as well as a carina on the outer surface are granulate; the proximal half of upper margin of dactylus denticulate; occludent margins dentate, 3 large teeth on the pollex of the larger claw.

The ambulatory legs increase in width from the first to the fourth; the first is very slender and about as long as the carapace, and has a few tubercles on the margins, most noticeable on the margins of the merus and the lower margin of the propodus. The second is a little shorter and stouter, with larger tubercles. The third and fourth are bordered by laminiform lobes. The dactyli of all the legs are long, slender, and pubescent.

Dimensions. — Female with ova: Length of carapace, 10.6 mm.; width, 10.9 mm.

Type locality. — Nallandu, 24 fathoms, at anchorage, January 18; one female with ova.

Allied to *L. confragosus* Calman, from which it is readily separated by the strongly upturned branchial angles, the absence of a spine behind the cardiac spine, the wider hepatic lobe, and the presence of only one lobe on the upper outer margin of the hand.

CALAPPIDÆ.

Calappa gallus (HERBST).

Calappa gallus ALCOCK, Journ. Asiatic Soc. Bengal, LXV. 146, 1896, and synonymy.

Nallandu, 24 fathoms, at anchorage, January 18; one young.

LEUCOSIIDÆ.

Persephona brevimana (ALCOCK).

Myra brevimana ALCOCK, Journ. Asiatic Soc. Bengal, LXV. 206, 1896, and synonymy.

Nallandu, 24 fathoms, at anchorage, January 18; one young female.

Persephona darnleyensis (HASWELL).

Myra darnleyensis ALCOCK, Journ. Asiatic Soc. Bengal, LXV. 207, 1896, and synonymy.

Fulidu, 18 fathoms, January 18; one female with ova, 13.4 mm. long, 10.7 mm. broad.

Porcellanella triloba WHITE.

Porcellanella triloba WHITE, in Macgillivray's Voyage H. M. S. Rattlesnake, II. Appendix No. VI. p. 394. pl. V. fig. 2, 1851.¹ HENDERSON, Challenger Anomura, 112, 1888; Trans. Linn. Soc. London (2), V. 429, 1893.

Porcellana triloba HASWELL, Cat. Austral. Crust., 149, 1882.

Nallandu, 24 fathoms, at anchorage, January 18; one small male, with bopyrid parasite lodged in the branchial cavity.

Distribution. — Off Cape Capricorn, East Australia, 15 fathoms (White). Celebes Sea, 10–20 fathoms (Henderson). Port William, Falkland Islands, 5–12 fathoms (Henderson). Rameswaram, India (Henderson).

¹ The title-page bears the date 1852, but the work appeared in December, 1851. See Athenæum, London, Dec. 6, 1851, p. 1280, and Jardine's Contributions to Ornithology in 1851, p. 6.

PAGURIDÆ.

Dardanus, sp.

At Hanimadu, Tiladummati Atoll, 16 fathoms, at anchorage, a young hermit crab was collected, which approaches very near *Dardanus scabrimanus* (Dana).

The lateral teeth of the front are more advanced than the middle. Eyes stout, two and a half times as long as wide, equalling two-thirds of the width of the front; cornea green in alcohol, and occupying one-third the length of the stalk; eyes surpassing a little the stalk of the outer antennæ, subequal to that of the inner antennæ. Eye scales somewhat obcordate, having a sinus on the middle of the anterior margin.

The claws and legs as well as the body are sparsely clothed with long hair. Claws very unequal. Upper and outer surface of wrist of left cheliped and distal end of arm spinulous; upper margin of wrist and hand spinous; outer face of hand sparingly spinulous and granulous, lower half almost smooth; lower margin with a row of small spines. Fingers broken. Smaller cheliped more spinulous and hairy than the larger.

Second and third pairs of feet with the last three segments roughened above, dactyli much longer than propodi, and having a longitudinal groove on the outside. Propodus of left third foot roughest.

Length of carapace, about 4.5 mm.

EXPLANATION OF PLATE.

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- Fig. 1. *Lambrus (Rhinolambrus) bispinosus*, ♀, × 2.
Fig. 2. " " " ♀, profile, × 2.
Fig. 3. *Goneplax maldivensis*, ♂, × 3½.
Fig. 4. " " ♂, outer surface of larger chela, × 3½.
Fig. 5. " " ♂, abdomen, × 6½.
Fig. 6. *Halimus agassizii*, ♂, × 4.
Fig. 7. *Palicus contractus*, ♂, × 3½.
Fig. 8. " " outer maxilliped, × 4½.
Fig. 9. *Xanthias alcocki*, ♀, × 5½.
Fig. 10. " " ♀, outer surface of right chela, × 6½.
Fig. 11. *Pilumnus woodworthi*, ♀, × 3½.
Fig. 12. " " ♀, outer surface of larger chela, × 3½.
Fig. 13. *Kraussia nitida*, ♂, × 2½.

Rathbun, — Maldive Crabs.

