

## CRUSTACEA.

BY

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THE collection of Crustacea made in the Indian Ocean, if less numerous in species and less interesting than those obtained on the Australian coasts, contains a larger number of rare or undescribed forms than might have been expected, when it is remembered that the localities are all included in a region whose Crustacean fauna has been repeatedly explored by the collector. Of the Islands, however, visited by Dr. Coppinger, the Amirante, Providence, and Glorioso groups have been hitherto *terra incognita* to the carcinologist, and but little has been hitherto recorded of the Crustacean fauna of the Seychelles.

It may be useful (as in the previous part of this Report) to mention here the principal memoirs which have appeared since the publication of Milne-Edwards's 'Histoire naturelle des Crustacés' (1834-40) which deal specially with the Crustacean fauna of the East-African coast from the Red Sea to the Cape of Good Hope, and of the Mascarene Islands and other islands belonging to the same geographical subregion.

In 1843 appeared Dr. F. Krauss's valuable account of the South-African Crustacea\*, containing a complete enumeration of the then known Podophthalmia and Edriophthalmia of the Cape Colony and Natal, a work which even now forms the standard of reference for all students of the South-African Crustacea. Since its publication few additions have, indeed, been made to our knowledge of the South-African marine and littoral Crustacea beyond the descriptions of certain new species by Dr. W. Stimpson †.

In 1861-62 appeared Dr. C. Heller's standard work, "Beiträge zur Crustaceen-Fauna des rothen Meeres" ‡, which added largely to what was previously known from the writings of Milne-Edwards, Rüppell,

\* 'Die südafrikanischen Crustaceen,' Stuttgart (1843), 4to.

† Proc. Acad. Nat. Sci. Philadelphia, 1857-60.

‡ Sitzungsber. Akad. Wissenschaft. Wien, xliii. (1) p. 297, xliv. (1) p. 241 (1861-62).

and others concerning the Podophthalmia and Edriophthalmia of the Red-Sea coasts. In the latter year also was published M. A. Milne-Edwards's enumeration (with descriptions of a few new species) of the Crustacea of Réunion\*.

In 1868 M. A. Milne-Edwards published an account of the Crustacea collected by M. A. Grandidier at Zanzibar and Madagascar (Cape St. Marie†); and in the following year, in the third volume of Baron C. von der Deeken's 'Travels in East Africa' appeared the careful account by Dr. F. Hilgendorf of the Crustacea collected in that Expedition, to which is appended a very useful and complete systematic list, by Dr. E. von Martens, of all the known Crustaceans of the East-African coasts and islands adjacent‡.

In 1874 a Report appeared by C. K. Hoffmann, entitled 'Sur les Crustacés et Echinodermes de Madagascar et de l'Île de la Réunion', based upon the extensive collections made by the author himself and by MM. Pollen and van Dam, wherein also numerous species are enumerated from the Mauritius.

In 1878 the Crustacea of Mozambique were dealt with by Dr. F. Hilgendorf, in the very useful memoir entitled "Die von Hrn. W. Peters in Moçambique gesammelten Crustaceen"||; a few species from the same locality had been previously enumerated by Prof. J. Bianconi in 1869¶.

In 1879, in the "Report of the Naturalists of the British Transit-of-Venus Expedition," were enumerated the Crustaceans collected at the island of Rodriguez, all, except *Talitrus gulliveri*, Podophthalmia, and nearly all common and widely distributed species\*\*.

In 1880 was published the excellent account, by Dr. F. Richters, of the Decapoda in Prof. Möbius's work on the marine fauna of the Mauritius and Seyhelles††, to which frequent reference is made in the following pages. Since the appearance of this work, I have given‡‡ an account of some new or remarkable species collected at the Mauritius by M. V. de Robillard.

In 1881 Drs. H. Lenz and F. Richters, in a memoir entitled "Beitrag zur Krustaceen-Fauna von Madagascar"§§, enumerated a

\* Annexe F, Crustacés, in Maillard's 'Notes sur l'Île de la Réunion.' Paris, 8vo (1862).

† Nouvelles Archives du Muséum, iv. p. 69 (1868).

‡ Vide Hilgendorf, Crustaceen in V. der Deeken's Reisen in Ost-Afrika, iii. (1) p. 1, and von Martens, *t. c.* p. 104 (1869).

§ In F. Pollen & D. v. Dam, 'Recherches sur la Faune de Madagascar,' &c. (5<sup>e</sup> partie). Leyden (1874). 4to.

|| Monatsber. der Akad. Wissensch. Berlin, p. 782 (1878).

¶ "Specimina zoologica mosambicana," fasc. xvii., in Mem. dell' Accademia di Bologna, ser. 2, ix. p. 205 (1869).

\*\* Vide E. J. Miers, in Phil. Trans. Royal Society, clxviii. p. 485 (1879).

†† Richters, Decapoda in Möbius's 'Beiträge zur Meeresfauna der Insel Mauritius und der Seyhellen,' 4to, Berlin (1880).

‡‡ Proc. Zool. Soc. pp. 339, 538 (1882); p. 10 (1884).

§§ Vide Abhandl. Senckenberg. naturf. Gesellsch. Bd. xii. p. 421 (1881).

certain number of Decapoda from Madagascar; among them are certain species new to the Madagascar fauna.

I may refer, in conclusion, to Dr. R. Kossmann's elaborate account of the Malacostraca (*Brachyura* and *Anomura*) in the yet incomplete account of his Exploration of the coasts of the Red Sea\*, wherein the principle of uniting allied species is carried to a perhaps inconvenient degree, and some modifications in the classification of genera and species are proposed which are of doubtful value to the systematist, but which contains much important and useful matter relating to the Crustacean fauna of the Red Sea. In this work frequent reference is made to a publication (in Russian, and with Russian title) by Dr. Paulson, which appeared at Kiew in 1875, but which I have never seen†, and which I believe has been quoted by no other carcinologist.

### *List of the Localities.*

#### SEYCHELLES.

4-12 fms., coral and sand, March 1882 (No. 194).

Bird Island, December 1881 (No. 210).

Mahé Island, beach, March 1882 (No. 196).

#### AMIRANTE GROUP.

African Island. Beach, December 1881 (No. 210).

African or Eagle Islands. 10 fms., sand and coral, March 1882 (No. 184).

Eagle Island. Beach, December 1881 (No. 210).

Darros Island. Beach, March 1882 (Nos. 199, 200); 22 fms., sand and coral, March 1882 (Nos. 185, 233).

Poivre Island. Beach, March 1882 (No. 198).

Poivre Island and Ile des Roches. 13-20 fms., sand and mud, March 1882 (No. 183).

Ile des Roches. Beach, December 1881 (No. 210).

Etoile Island. 13 fms., coral, April 1882 (No. 191).

Marie-Louise Island. 17 fms., coral, April 1882 (Nos. 186, 190).

Ile des Neufs. 15 fms., dead coral, April 1882 (No. 187).

#### PROVIDENCE GROUP.

Providence Island. Beach, December 1881 (No. 210); 19 fms., coral, April 1882 (No. 217).

Providence Reef. 24 fms., sand and dead coral, April 1882 (No. 215).

Cerf Islands. 10 fms., sand, April 1882 (No. 232).

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\* 'Zoologische Ergebnisse einer . . . Reise in die Küstengebiete des rothen Meeres' (erste u. zweite Hälften), 4to, Leipzig (1877 and 1880).

† This title, as translated for me by Mr. H. B. Wilson, lately of the Department of Printed Books in the British Museum, signifies "Researches upon the Crustacea of the Red Sea."

Glorioso Islands. Beach and reef at low water, May 1882 (No. 220); 7-10 fms., sand and mud, May 1882 (No. 219).

Mozambique. Beach, between tide-marks, May 1882 (Nos. 224, 225, 227); specimens found in the interior of *Tridacna*-shells (No. 237).

In the systematic list of the species which follows, 104 species and varieties are enumerated from the African subregion, besides 13 which were collected at Singapore and are not included in this Report; of these, 16 species and 6 varieties are described as new to science. 38 species and varieties are indicated as new to the African subregion; but several of the new varieties may not improbably have been already recorded by previous writers under the typical designation of the species.

Little need be said with regard to the geographical distribution of the species, since the great majority, except in the groups Oxyrhynga and Oxystomata (which are richest in undescribed forms), are common in the Indo-Pacific region\*, but confined, with few exceptions, to that area of distribution. Such exceptions are *Grapsus maculatus*, *Liolophus planissimus*, *Alpheus edwardsii*, and *Gonodactylus chiragra*, which extend into the Atlantic region; also *Thalamita integra* and *Calappa gallus*, var. *bicornis* (if the distribution of the variety be included in that of the typical form). It is not necessary to repeat here what has been already noted on the affinity of the Crustacean fauna of this subregion or district with that of the West Indies †.

### *List of the Species, showing their Geographical Range.*

[N.B. The species and varieties distinguished by an asterisk are those which I believe to be now recorded for the first time from the Mascarene subregion and the Eastern coast of Africa. The term "Oriental Region" denotes that the species ranges from the African coast or islands adjacent eastward at least to one of the island-groups of the Pacific Ocean. At the end of this Report a table is appended, showing the distribution of the species on the East-African coast and the islands belonging to the same geographical sub-region.]

## PODOPHTHALMIA.

### DECAPODA.

#### BRACHYURA.

\* *Achæus lærioculis*, sp. n. Seychelles.

*Camposcia retusa*, Latreille. Mozambique; Oriental Region.

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\* Prof. F. W. Hutton, in a recent article on Zoological Geography, adopts the terms Province and District for marine geographical divisions in contradistinction to the terms Region and Subregion, which he restricts to the land divisions (*vide* 'New Zealand Journal of Science,' i. p. 199, footnote, 1882).

† Proc. Zool. Soc. p. 539 (1882).

- \* *Huenia pacifica*, Miers. Seychelles; Fiji Islands.  
*Menæthius monoceros* (Latreille). Mozambique; Seychelles; Oriental Region.
- \* *Stilbognathus martensii*, sp. n. Marie-Louise Island; Providence Island.
- \* *Paramithrax* (*Chlorinoides*) *longispinus*, De Haan, var. *bituberculatus*, n. Darros Island; Providence Island.
- \* *Hyastenus* (*Chorilia*) *oryx*, A. M.-Edwards. Providence Island; Oriental Region.
- \* — (—) *oratus* (Dana). Poivre Island or Ile des Roches; Hawaiian Islands.
- \* — (—) —, var. *tenuirostris*, n. African or Eagle Islands.  
*Naxiu* (*Naxioides*) *petersii*, Hilgendorf. Marie-Louise Island; Mozambique.
- \* *Eurynome stimpsonii*, sp. n. Providence Reef.  
*Micippa thalia* (Herbst), var. *haani*, Stimpson. Providence Island; Mozambique; Pa-tchu-san; seas of China and Japan.
- \* *Paramicippa asperimanus*, sp. n. Seychelles; Providence Island.
- \* *Eulomonyx spinosus*, gen. et sp. n. Providence Island and Providence Reef.
- \* *Lambrus* (*Parthenopoides*) *calappoides*, Ad. & White? Seychelles; "Oriental Seas."
- \* *Euxanthus exsculptus*, var. *rugosus*, n. Darros Island; Madagascar, Tamatave.  
*Lophactæa semigranosa* (Heller). Etoile Island; Red Sea.  
*Lophozozymus dodone* (Herbst)? Mozambique; Ibo, Mauritius; "East Indies" (Herbst).
- Lionera punctata* (M.-Edwards). Darros Island; Oriental Region.  
*Actæa rufopunctata*, M.-Edwards. Seychelles; Oriental Region.  
*Atergatopsis granulatus*, A. M.-Edwards. Marie-Louise Island; Zanzibar; "Eastern Seas"?
- Xanthodes lamarekii* (M.-Edwards). Seychelles; Oriental Region.  
*Carpilodes rugatus* (M.-Edwards). Seychelles; Oriental Region.  
*Actæodes tomentosus* (M.-Edwards). Darros Island; Oriental Region.  
*Leptodius exaratus* (M.-Edwards, var.). Darros Island; Mahé Island; Oriental Region.
- \* — —, var. *gracilis* (Dana). Mozambique; Poivre Island; Oriental Region?
- Phymodius rugipes* (Heller). Seychelles; Red Sea.  
*Chlorodius niger* (Forskål). Seychelles; Oriental Region.
- \* — *miliaris*, A. M.-Edwards. Seychelles; New Caledonia.
- \* *Chlorodopsis melanoductylus*, A. M.-Edwards. Seychelles; African or Eagle Islands; Etoile Island; New Caledonia; Samoa Islands.  
— *areolatus* (M.-Edwards). Mozambique; Darros Island; Oriental Region.
- Etisodes electra*, Herbst. Seychelles, 4-12 fms.; Oriental Region.  
*Cymo andreossii* (Audouin). Seychelles; Oriental Region.  
*Actumnus setifer* (De Haan). Seychelles; Ile des Neufs; Providence Island; Oriental Region.
- Eurippelliu annulipes* (Milne-Edwards). Poivre Island; Oriental Region.
- Ozius* (*Epixanthus*) *frontalis*, M.-Edwards. Mahé Island; Oriental Region.
- Eriphiu lævimanus*, M.-Edwards. Darros Island; Glorioso Islands; Oriental Region.  
— *lævimanus*, var. *smithii*, MacLeay. Mozambique; Glorioso Islands; Oriental Region.

- Eriphia scabricula*, Dana. Mozambique; Darros Island; Oriental Region.
- Trapezia cymodoce* (Herbst). Seychelles; African or Eagle, Darros, Etoile, Marie-Louise, des Neufs, and Glorioso Islands; Oriental Region.
- *ferruginea*, Latreille. Seychelles; Oriental Region.
- *rufopunctata* (Herbst). Etoile Island; Glorioso Islands; Oriental Region.
- Tetralia cavimanus*, Heller. Seychelles; Etoile Island; Oriental Region.
- \* *Xiphonectes vigilans* (Dana), var. *obtusidentatus*, n. Seychelles.
- Scylla serrata* (Forskål). Mozambique; Oriental Region.
- Achclous granulatus* (M.-Edwards). Seychelles; Oriental Region.
- Goniosoma nutator* (Herbst). Poivre Island or Ile des Roches; Oriental Region (eastward, at least, to the Moluccas).
- Thalamita sima*, M.-Edwards. Mozambique; Seychelles; Poivre Island or Ile des Roches; Glorioso Islands; Oriental Region.
- \* — *quadrilobata*, sp. n. Seychelles.
- *integra*, Dana. Oriental Region (Senegambia; Canaries, var.).
- *crenata*, Rüppell. Mozambique; Oriental Region.
- *picta*, Stimpson. Darros Island; Oriental Region.
- Lissocarcinus orbicularis*, Dana. Seychelles; Oriental Region.
- Gelasimus annulipes*, M.-Edwards. Mahé Island; Oriental Region.
- *dussumieri*, M.-Edwards. Mahé Island; Oriental Region.
- Ocyroda ceratophthalma* (Pallas). Ile des Roches; Oriental Region; St. Christopher (??)
- *cordimanus*, Desmarest. Seychelles; African Island; Ile des Roches; Providence Island; Oriental Region.
- Macrophthalmus parvimanus*, Latreille (ined.), M.-Edwards. Mahé Island; Mauritius (M.-E.); Réunion (A. M.-E.); Fouquets (Richters).
- Euplax* (*Chænostoma*) *boscii* (Audouin). Mozambique; Oriental Region.
- Dotilla fenestrata*, Hilgendorf. Mozambique; E. Africa (Ibo to Natal).
- Carcinoplax integra*, sp. n. Seychelles.
- Grapsus maculatus* (Catesby). African Island; Oriental and Atlantic Regions.
- *strigosus* (Herbst). Mozambique; Oriental Region.
- Geograpsus grayi* (M.-Edwards). Ile des Roches; Providence Island; Oriental Region.
- Metopograpsus messor* (Forskål). Mahé Island; Oriental Region.
- Liolophus planissimus* (Herbst). Darros and Etoile Islands; Oriental Region (to Cape St. Lucas); Atlantic Region (Madeira, Ascension Island, Jamaica, coast of Florida).
- \* *Xanthasia murigera*, White. Mozambique; Oriental Region.
- \* *Philyra rectangularis*, sp. n. Seychelles.
- (*Philyra rudis*, sp. n. Penang.)
- \* *Pseudophilyra polita*, sp. n. Poivre Island and Ile des Roches.
- \* *Nursilia dentata*, Bell. Seychelles; Oriental Region.
- \* *Arcania undecimspinosa*, De Haan. Seychelles; Oriental Region (Japanese and Australian seas).
- Ebalia granulata* (Rüppell). Providence Island; Red Sea.
- Calappa hepatica* (Linn.). Mozambique; Oriental Region.
- \* — *gallus* (Herbst), var. *bicornis*, n. Providence Island; Indian Ocean.
- \* *Cymopolia whitei*, sp. n. Seychelles.

## ANOMURA.

- \**Dromidia spongiosa*, Stimpson, var. *stimpsonii*, n. Mozambique.  
 \**Dromia vulgaris*, M.-Edwards. Providence Island; European seas northward to the British Channel; Indian and Indo-Malayan seas?  
 \**Homalodromia coppingeri*, gen. et sp. nov. Providence Reef.  
*Birgus latro* (Linn.). Du Lise Island; Oriental Region.  
*Cænobita perlata*, M.-Edwards. Eagle and African Islands; Oriental Region? (eastward to Japan).  
*Pagurus punctulatus*, M.-Edwards. Darros Island; Oriental Region.  
 — *guttatus*, Olivier. Seychelles; Mascarenes; Madagascar.  
*Calcinus tibicen* (Herbst). Mozambique; Oriental Region.  
 \**Petrolisthes tamarckii* (Leach). Darros Island; Oriental Region (eastward to the Australian seas).  
 — —, var. *asiaticus* (Leach). Darros Island; Oriental Region.  
 \*— *annulipes*, White (ined.), Miers. Seychelles; Oriental Region (to Philippines and Australia).  
 \*— *maculatus*, M.-Edwards. Mozambique; New Ireland.  
 — *villosus* (Richters)? Darros Island; Mauritius.  
 \**Polyonyx bimaculatus* (Dana). Seychelles; Etoile Island; Gulf of Suez; Oriental seas?  
*Galathea spinosirostris*, Dana? Marie-Louise Island; Providence Island?; Oriental Region (Sandwich Islands).  
 \**Munida edwardsii*, sp. n. Ile des Neufs.

## MACRURA.

- Alpheus obeso-manus*, Dana. Seychelles; Oriental Region.  
 — *edwardsii*, Audouin. Seychelles; Oriental Region to California; Atlantic Region (Cape Verds; American coast from Carolina to Brazil).  
 — *levis*, Randall. Seychelles; African or Eagle Islands; Etoile Island; Oriental Region.  
 \*— *collumianus*, Stimpson? African or Eagle Islands; Bonin Island.  
 — *minor*, Say, var. *neptunus*, Dana. Darros Island; Ile des Neufs; Glorioso Islands; Oriental Region (to Bay of Panama).  
 \**Pontonia? brevisrostris*, sp. n. Seychelles.  
 \**Coralliocaris graminea* (Dana). Seychelles; Oriental Region.  
*Penæus canaliculatus*, Olivier. Poivre Island; Oriental Region (to Nicaragua).  
 \*— *richtersii*, sp. n. Cerf Island.

## STOMATOPODA.

- Gonodactylus chiragra* (Fabr.). Mozambique; Seychelles; Darros Island; Etoile Island; Oriental Region (to American coast); Atlantic Region (Mediterranean; W. Indies; Brazil).  
 — *graphurus*, Miers. Seychelles; Oriental Region.  
 \*— *elegans*, sp. n. Providence Island or Ile des Roches; Providence Reef.

## AMPHIRODA.

- \**Mæra diversimanus*, sp. n. Seychelles.

## DECAPODA.

## BRACHYURA.

1. *Achæus lævioculis*. (PLATE XLVI. fig. A.)

I thus doubtfully designate a male specimen from the Seychelles, 4-12 fms., which in many of its characters closely resembles *A. lorina* (Ad. & White\*), from Mindanao and Borneo, but is distinguished by the absence of the prominent spines or tubercles on the gastric and cardiac regions of the carapace (which are here replaced by very small tubercles), the nearly terete eye-peduncles (which in *A. lorina* are armed with a spine or tubercle), and the much shorter ambulatory legs, which are scarcely more than twice the length of the carapace, and have the dactyli, even of the fifth pair, very little falcated, whereby this species may be at once distinguished from *A. cranchii* and *A. lucertus*. *A. tuberculatus*, Miers, has the carapace much less constricted behind the eyes, a prominent cardiac spine, &c. I should note that in specimens of *A. lorina* in the Museum collection the spines of the carapace are much less prominent than in the figure of Adams and White.

2. *Camposcia retusa*, Latr.

Two females of this common Oriental species were obtained on the beach between tide-marks at Mozambique (No. 224), a locality whence Dr. Hilgendorf has already recorded it. I have already referred to its distribution on p. 189.

3. *Huenia pacifica*, Miers.

A male from the Seychelles, 4-12 fms. (No. 194), closely resembles the type specimen of this species from the Fijis in the characteristic long and slender rostrum and in all other characters. The occurrence of *H. pacifica* at the Seychelles suggests the possibility of this form being identical with *H. grandidieri*, A. M.-Edwards, from Zanzibar, founded upon a female example only †. I have, however, already noted the distinctions which exist between M.-Edwards's figures of *H. grandidieri* and the female from the Fijis in the Museum collection which I refer to *H. pacifica*. With the limited material available for comparison, the two forms certainly cannot be united; but perhaps the examination of a sufficient series would demonstrate the necessity of regarding both as mere varieties of the long-known *H. proteus*, with which they may be linked through the form designated by White *H. heraldica*, which has been already cited in the first part of this Report as synonymous with *H. proteus*.

\* Zool. 'Samarang,' Crust. p. 3, pl. ii. fig. 2 (1848).

† Ann. Soc. Entom. France, sér. 4, v. p. 143, pl. iv. fig. 2 (1865).



4. *Menæthius monoceros* (Latr.).

A series of specimens of both sexes and various ages are in the collection from the Seychelles, 4-12 fms. (No. 194); also a small female obtained on the beach at Mozambique (No. 224), which has the prominences or lobes of the antero-lateral margins spiniform and acute.

I have already referred to this widely distributed and variable species on p. 190.

A small female specimen, which has unfortunately lost all the legs, obtained at African or Eagle Islands, 10 fms. (No. 184), has the rostrum remarkably abbreviated, not equalling in length the interocular width of the frontal region of the carapace, the greatest width at the branchial regions little exceeding the width at the frontal region, and the basal antennal joint more dilated than in the typical *M. monoceros*. It appears to merit distinction at least as a variety, since I have seen no specimen in the extensive Museum series which closely resembles it, but I refrain for the present from designating it as such.

5. *Stilbognathus martensii*. (PLATE XLVI. fig. B.)

I propose thus to designate two males obtained at Marie-Louise Island, 17 fms. (No. 186), and a male from Providence Island, 19 fms. (No. 217), which, although having the ischium-joint of the outer maxillipedes longitudinally sulcated (and hence certainly belonging to *Stilbognathus*), differ from *Stilbognathus erythreus*, Von Martens\*, from the Red Sea, in the form of the merus-joint, which has its extero-distal angle produced and acute as in *Stenocionops cervicornis*, and which further differs from the known species both of *Stenocionops* and *Stilbognathus* in having the notch on the inner margin (where the fourth joint articulates with it) provided with a tooth or lobe (see fig. b).

The carapace is constricted behind the orbits (as in *S. cervicornis*); the gastric, cardiac, and front of the branchial regions are rather convex and more or less distinctly covered with small tubercles or granules; the posterior margin of the carapace is cristate and prolonged in the median line into a tooth or lobe. The spines of the rostrum are slender and curved at first outwards and then inwards so as to meet at the apices, which are vertically reflexed as in *Stenocionops curvirostris*, A. M.-Edwards. There is a rounded prominence upon each pterygostomial region. The supraocular spines of the carapace are very long and straight; the eye-peduncles even longer; the basal antennal joint is considerably dilated, and has a small spine on its outer side near the base and another at its distal extremity. The longitudinal pit on the outer surface of the ischium-joint of the outer maxillipedes is longer than in *Stilbognathus ery-*

\* Verhandl. zool.-bot. Gesellsch. Wien, xvi. p. 379, fig. (1866).

*thraeus* as figured by Von Martens, reaching to the distal end of the inner margin, which is toothed as in *S. erythraeus*; this joint has a convex shining prominence at its outer and distal angle. The merus-joint is less deeply excavated where it is articulated with the ischium than in *S. erythraeus*, and, as already stated, there is a tooth in the notch on the inner margin where the carpus-joint is articulated with it, and its extero-distal angle is produced and acute; the lobe on the inner margin of the exognath is acute. The chelipedes (in the male) are of moderate length; merus and carpus granulated; palm granulated above, and with a longitudinal series of granules on its outer and inner surface; fingers arcuated and meeting (in the adult) only toward the apices, where they are denticulated. The ambulatory legs are slender and decrease in length from the first to the last, the first pair being much elongated. Colour (in spirit) yellowish or purplish. Length of carapace (without rostrum) 9 lines (19 millim.).

6. *Paramithrax (Chlorinoides) longispinus*, De Haan,  
var. *bituberculatus*.

An adult but small male from Darros Island, 22 fms. (No. 185), and two small males and a female obtained at Providence Island, 19 fms. (No. 217), are referred to this species, which has evidently a wide Oriental distribution.

They are distinguished from *P. longispinus* as figured by De Haan merely by having the lower (immobile) finger as well as the dactylus armed with a tooth or tubercle on its inner margin in the males, and the upper margin of the palm straight and entire, not dented; the spines of the carapace and legs are small. The anterior præ-orbital spine is more or less recurved, as in De Haan's figure of the Japanese type.

From *P. coppingeri*, Haswell, referred to in the first part of this Report, this species is distinguished not merely by the form of the chelipedes, but by the less elongated carapace and ambulatory legs.

7. *Hyastenus (Chorilia) oryx*, A. M.-Edw.

Two females and two small males are in the collection from Providence Island, 19 fms. (No. 217).

These specimens are of interest as showing the wide Oriental distribution of this species, which had not previously been recorded, I believe, from the Western division of the Indo-Pacific Region. It has already been noticed in the first part of this Report (p. 195).

8. *Hyastenus (Chorilia) ovatus*.

Lahaina ovata, Dana, *Amer. Journ. Sci. & Arts*, ser. 2, xi. p. 269 (1851); *U.S. Expl. Exped., Crust.* i. p. 92, pl. iii. fig. 1 (1853).

A small but adult female is referred to this species from Poivre

Island, or Ile des Roches, 13-20 fms. (No. 183), and a small male from Darros Island, 22 fms. (No. 233).

Dana's types were from the Hawaiian Islands; hence this species, which was previously unrepresented in the Museum collection, is evidently distributed throughout the Oriental Region.

It appears to be very distinctly characterized by the slender and very divaricate rostral horns, and the strong spines of the pterygostomial regions and basal antennal joints. In the specimens before me, the carapace beneath the pubescence is obviously tuberculated, and it is not so broadly ovate as in Dana's figure; as in that figure, there are small lateral epibranchial and intestinal spines.

There is, I think, no sufficient reason for separating this form, even as a subgenus, from *Chorilia*.

In a female from African or Eagle Islands, 10 fms. (No. 184), the carapace is still narrower, less distinctly tuberculated, and has scarcely any trace of the epibranchial and no intestinal spine; the spines of the rostrum are longer, exceeding the carapace in length; the spines of the basal antennal joints and pterygostomial regions shorter (the latter subequal). This I will designate *L. ovata*, var. *tenuirostris*.

#### 9. *Naxia* (*Naxioides*) *petersii*, Hilgendorf.

A young specimen is in the collection, from Marie-Louise Island, 17 fms. (No. 186).

Two specimens of this species are in the British-Museum collection without special locality (*H.M.S.* 'Samarang'). Dr. Hilgendorf's specimen was from Mozambique.

As I have elsewhere noted\*, this species is very probably identical with the earlier described *N. hirta*, A. M.-Edwards, from Zanzibar.

#### 10. *Eurynome stimpsonii*. (PLATE XLVII. fig. A.)

The carapace is of a rather narrow-pyriform shape; the spines of the rostrum rather short, very slightly divergent, and shaped nearly as in *Eurynome aspera*; there are usually two small spinules on the front of the gastric region, and always a strong spine on each branchial region. The surface of the carapace has besides several broadly dilated, laminate, flattened expansions, which, when examined with a lens of sufficient power, are seen to be themselves granulated:—one (longitudinal) on the gastric, one (posteriorly emarginate, and bearing a strong dorsal spine) on the cardiac, one (transverse) on the intestinal, one on the hepatic, and four on the branchial region grouped around the branchial spine; also one on the posterior margin of the carapace; their form will be best understood by a reference to the figure. The postocular tooth or lobe is prominent and triangulate; there is a small ridge or prominence on

\* Proc. Zool. Soc. 1882, p. 341.

the pterygostomian region; the basal antennal joint is slender, but not, as in *E. aspera*, longitudinally sulcated. The chelipedes in the single male examined (which is, however, of very small size) are small and slender; the merus-joint armed with a longitudinal series of small spines and other spines irregularly disposed; wrist and palm also armed on the upper and outer surfaces with numerous irregular spines; palm slender, about twice as long as the fingers, which are straight, not denticulated, and meet along their inner margins. The merus-joints of the ambulatory legs are armed above with a double longitudinal series of small spines, and there are spines also on the two following joints. Colour (in spirit) rose-pink. Length of the body to the apex of one of the rostral horns in the largest specimen (a female) rather over 5 lines (11 millim.); breadth nearly 3 lines (6 millim.).

There are in the collection four females and a small male, from Providence Reef, 24 fms. (No. 215).

This species is evidently nearly allied to *E. longimanus*, Stimpson, dredged with *Gorgoniv* at 10 fms. off the Cape of Good Hope\*, which is only known to me by the short Latin diagnosis of its author; but it is distinguished not merely by the much shorter rostral spines and chelipedes (which may vary with age), but also by the absence of teeth on the branchial regions and posterior margin of the carapace, and the non-carinated ambulatory legs. Nothing is said by Stimpson of the form of the flattened *papille* of the carapace, nor does he mention the existence of the cardiac spine or of the spines on the wrist and palm of the chelipedes, &c. As in his species, the upper orbital fissure is closed in *E. stimpsonii*.

*Eurynome erosa*, A. M.-Edwards†, from Samoa (Upolu), is a much broader species, with less distinctly spinose legs, and the flattened prominences of the carapace are smaller and very different in form and position.

### 11. *Micippa thalia*, *Herbst*, var. *haani*, *Stimpson*.

A small male collected at Providence Island, 19 fms. (No. 217), seems to belong here. An adult male, closely resembling De Haan's figure, is in the British-Museum collection from Mozambique (*Prof. Bianconi*), designated "*Micippa cornuta*, *Bianconi*," and a small male from Pa-tchu-San (*H.M.S. 'Samarang'*).

This variety (for I can scarcely regard it as specifically distinct) is mainly distinguished from the species designated *M. thalia* in the Museum collection by having a prominent supraocular spine, and by the much greater prominence of the spines on the gastric and branchial regions and of the lateral margins in the adult; in the younger specimens, however, all except the supraocular spines are very small. As the supraocular spines seem to be referred to in *Herbst's* original description of *M. thalia*, they cannot be cited as

\* Proc. Acad. Nat. Sci. Philad. p. 219 (1857).

† Journ. Mus. Godeffroy, i. p. 78, pl. xii. fig. 1 (1873).

distinctively characterizing the variety *haani*, which is connected with *M. thalia* by insensible gradations.

Specimens referred by Dr. F. Richters to *M. thalia*, De Haan, from Fouquets, may probably belong to this variety; but the length of the supraocular spines is not mentioned.

## 12. *Paramicippa asperimanus*.

I thus designate a series of specimens from Providence Island, 19 fms. (No. 217), and a small female from the Seychelles, 4–12 fms. (No. 194).

These specimens in all their characters so nearly approach the typical *Paramicippa platypes*, Rüppell, from the Red Sea, of which they may prove to be a variety, that a detailed description is scarcely needed. They scarcely differ except in the form of the rostrum, which is much less deeply emarginate at its distal extremity, with the terminal lobes less acute; in the slenderer chelipedes of the male, whose merus-joint is longer, wrist minutely granulated on its inner and outer surface, and palm more elongated, granulated on its inner surface and without the characteristic coloration of *M. platypes*: and in having the distal extremity of the dilated basal antennal joint armed with a series of spinules, which are visible from above between the rostrum and the orbital cavity. In this latter character this species approaches *Micippa philyra*, Herbst, from which it is distinguished by the dilated palms and arcuated fingers of the chelipedes in the male and much more deeply emarginate front. It seems, in fact, to occupy an intermediate position between the two forms—which, however, can hardly be conspecific, since an adult male in the Museum collection of *M. philyra*, with slender feeble chelipedes, is of larger size than the males with strong dilated chelipedes of *P. platypes* and *P. asperimanus*. The specimen figured by Richters\* as *M. philyra*, var. *latifrons*, seems to be an adult male *Paramicippa platypes*. I cannot identify *P. asperimanus* with any of the “varieties” recently figured by Kossmann †; the variety designated *Micippa philyra*, var. *mascarenica*, is distinguished by the much deeper notch of the anterior margin of the rostrum, and nothing is said of the form of the chelipedes in this form.

The British Museum, since the above was written, has received an adult male of very large size from the Mauritius (*M. V. de Robillard*), in which the rostrum is as deeply notched as in the typical *M. platypes*, and the palms of the chelipedes strongly granulated both on the inner and outer surfaces.

## ENTOMONYX, gen. nov.

Carapace subpyriform. Rostrum obliquely deflexed and com-

\* In Möbius's 'Beiträge zur Fauna der Insel Mauritius und der Seychellen,' Decapoda, p. 142, pl. xvi. figs. 1–5 (1880).

† 'Zool. Ergebnisse . . . rothen Meeres,' Brachyura, p. 6, pl. iii. figs. 1, 3, 4, 5 (1877).

posed of two moderately divergent spines. Orbits deep, tubular, with a lateral aspect, and with two nearly closed fissures above. Basal antennal joint very much dilated, with a small distal spine. Chelipedes (in the male) rather small and slender, fingers nearly straight. Ambulatory legs slender, not spinose or nodose.

This genus must, I think, be associated with *Pericera* in the family Periceridæ, on account of the deep, well-defined, and tubular orbits, notwithstanding the two narrow fissures in their superior margin. It is further distinguished from *Pericera* by the deflexed rostrum and the absence of a series of lateral spines. In *Priororhynchus* the rostrum is deflexed, but lamellate and merely notched at its distal extremity.

### 13. *Entomonyx spinosus*. (PLATE XLVII. fig. B.)

The carapace is moderately convex, subpyriform; its surface uneven and granulated, with two spines in a longitudinal series on the gastric, two in a transverse series on the cardiac, and two on the branchial regions near the postero-lateral margins. The spines of the rostrum are rather short, moderately divergent, broadest at base, and distally acute. The orbits are deep, tubular, project somewhat laterally, and are bordered with short spiniform teeth; in the upper margin, near the postocular lobe or tooth, are two narrow fissures. The postabdomen (in the male) is narrow, with the segments all distinct, the first the shortest. The pterygostomial regions are granulated. The basal antennal joint is granulated and very much enlarged, and has a short spine at its distal extremity beneath the base of the next joint, besides two small spines which are situated on the inferior margin of the orbit. The anterior legs or chelipedes are of moderate length and rather slender; merus-joint or arm granulated, and with a series of spines on the upper and lower surfaces; the wrist and palm also very closely granulated, the wrist with some longer tubercles or short spines on its outer surface near base; the palm rather slender, nearly twice as long as the wrist; the fingers nearly straight, acute at their apices, and regularly denticulated along their inner margins. The ambulatory legs are very slender, and decrease regularly in length from the first to the last; their merus-joints are minutely spinulose above, and have a longer spine at the distal extremity. The carapace and ambulatory legs are clothed with short curled hairs, which are longest and most dense at the base of the rostrum. Colour (in spirit) pinkish. Length of carapace to base of rostrum nearly  $5\frac{1}{2}$  lines (11 millim.), greatest breadth  $4\frac{1}{2}$  lines (9.5 millim.); length of a chelipede about  $\frac{1}{2}$  inch (13 millim.).

An adult female and small male were collected at Providence Reef, 24 fms. (No. 215), and three males and a female at Providence Island, 19 fms. (No. 217).

The rostrum is more strongly deflexed in the females than in the males.

14. *Lambrus* (*Parthenopoides*) *calappoides*, *Adams & White?*

Two small males are in the collection from the Seychelles, 4-12 fms. (No. 194).

They have the carapace relatively somewhat broader and flatter than in the typical *L. calappoides* from the Philippines and Eastern Seas, and are possibly distinct. The specimens of *L. calappoides* in the Museum collection are somewhat more strongly tuberculated, but vary between themselves as regards this character.

15. *Euxanthus exsculptus*, var. *rugosus*.

This designation is proposed for a female specimen obtained on the beach at Darros Island (No. 200), which differs from all the specimens of *Euxanthus exsculptus* (*E. mammillatus*) in the Museum collection in having the elevations or bosses of the carapace very much more rugose and punctulated, so that it has something of the appearance of a specimen of *Hypocælus sculptus*. A larger female is in the Museum collection from Tamatave, Madagascar (*Rev. Deans Cowan*), from which the figure is taken. As in the specimens of the typical form of *E. exsculptus* in the Museum collection, from Australia and the Philippines, the bosses of the carapace, although distinctly punctulated, are never rugose, I think this form may prove to be specifically distinct. In *E. huonii* (referred to in the earlier part of this Report and in *E. sculptilis*) there is an additional antero-lateral marginal tooth developed between the penultimate and last tooth. *Euxanthus exsculptus* (Herbst) is referred to by Hoffmann (*t. c. p. 38*) as occurring at the Mauritius.

16. *Lophactæa semigranosa* (*Heller*).

Etoile Island, 13 fms. (a small male).

This species, which is apparently well distinguished by the disposition of the granulations of the carapace, which are absent from the mesogastric and cardiac regions, has been hitherto a *desideratum* in the Museum collection. The outer surface of the chelipedes and the margins of the ambulatory legs are clothed with hairs, and a few similar hairs exist on the sides of the carapace near the antero-lateral margins. The coloration (in spirit) is pinkish or yellowish.

17. *Lophozozymus dodone* (*Herbst?*)

An adult male, obtained on the beach at Mozambique (No. 224), is referred to this species.

In this specimen the front is rather narrow and prominent, with scarcely any trace of a median emargination; the teeth of the antero-lateral margins have some indications of having borne *setæ*, as described by Hilgendorf. The merus of the chelipedes is carinated above, the wrist has a cristated lobe on its inner surface; the

palm is keeled along the distal half of its upper margin, and, as well as the wrist, is very evenly punctulated.

Dr. Hilgendorf has already recorded this species from Mozambique and Ibo and from the Mauritius.

In two specimens in the British-Museum collection from the Sandwich Islands (*W. H. Pease*), referred to *L. intosus* (Randall), with which species *L. nitidus* (Heller) is very probably identical, the carapace is relatively broader, the front less prominent, and the palms of the chelipedes much more rugose above. It may be that a larger series would demonstrate the necessity of uniting these with *L. dodone*, when it would prove to be a widely distributed Indo-Pacific species.

#### 18. *Liomera punctata* (*M.-Edw.*).

A small male from the beach at Darros Island (No. 200), in which, however, the red punctulation has completely disappeared, is referred here.

Specimens of the same species are in the British-Museum collection from the Seychelles (*Dr. E. P. Wright*); Madagascar, Tamatave (*Rev. Deans Cowan*); Red Sea, Dædalus Shoal (*Lt.-Col. Playfair*); Ceylon, Galle (*Dr. W. Ondaatje*).

The types were from the Mauritius, and A. Milne-Edwards records this species from New Caledonia; hence it has undoubtedly a wide Oriental distribution.

In the adult examples in the Museum collection the front is much more deeply incised than in the smaller ones.

By M. A. Milne-Edwards this species is retained in the genus *Xantho*; but it appears to me that it should be referred to the genus *Liomera*, which should include all those species in which the carapace is markedly transverse, as in *Carpilodes*, with the two anterior of the antero-lateral teeth obsolete and the two posterior rounded, the legs not cristated, the finger-tips not distinctly excavated, and the basal antennal joint reaching to the subfrontal process, but not included within the inner orbital hiatus.

#### 19. *Actæa rufopunctata* (*M.-Edw.*).

Seychelles, 4-12 fms., a small female (No. 194).

Specimens of this widely distributed form are in the Museum collection from the Mauritius (*Old Collection*); Dædalus Shoal, Red Sea (*Lt.-Col. Playfair*); Ceylon, Galle (*Dr. W. Ondaatje*); Keeling or Cocos Island (*Lt. Burnaby*); Fijis (*H.M.S. 'Herald'*); and Samoa Islands (*Rev. S. J. Whitmee*); also probably from the Hotspur Bank, S. Atlantic (the specimen referred to in the Report on Dr. Copping's collections in the Magellan Straits and S. Atlantic), and Madeira (*Rev. R. Boog Watson*). The specimens from Madeira have lost the characteristic coloration, but otherwise closely resemble Oriental examples.



20. *Atergatopsis granulatus*, A. M.-Edw.

A small female from Marie-Louise Island, 17 fms. (No. 186), belongs, I think, to this species. It has the carapace uniformly granulated, as in A. Milne-Edwards's figure, based on specimens from Zanzibar.

The specimens in the British Museum (from the collection of H.M.S. 'Samarang') designated by A. M.-Edwards *A. granulatus* are without special indication of locality; they differ from his description, and resemble (as it would appear) *A. lucasi*, in having the carapace granulated only towards the antero-lateral margins; but they have the strong compressed tooth on the lower (immobile) finger, which is deficient in *A. lucasi*, but exists in *A. granulatus*. They seem therefore to be intermediate between the two species; but a larger series of the genus is needed to show whether or no they should be regarded as specifically distinct.

21. *Xanthodes lamareckii* (M.-Edw.).

Darros Island, beach (No. 200); a small male and two females.

Specimens are in the British-Museum collection from Madagascar, Tamatave (*Rev. Deans Cowan*); Ceylon, Galle (*Dr. W. Ondaatje*); Philippines (*Cuming*); and Eastern Seas, without special locality (*H.M.S.S. 'Samarang'* and '*Herald*'). It is distributed throughout the Oriental Region eastward to the Pacific islands, since A. Milne-Edwards records it from New Caledonia.

22. *Carpilodes rugatus* (M.-Edw.).

Seychelles, 4-12 fms. (No. 194); an adult female.

Specimens are in the British-Museum collection from the Red Sea, Dædalus Shoal (*Lt.-Col. Playfair*), and Galle, Ceylon (*Dr. W. Ondaatje*).

This species is widely distributed throughout the Oriental Region; it has been recorded from various localities eastward to New Caledonia.

Specimens which are referred doubtfully to the nearly allied, but, as I think, distinct, *C. vaillantianus* (A. M.-Edwards\*), are in the British-Museum collection from the Seychelles (*Dr. E. P. Wright*). In these specimens the lobes of the carapace are less prominent than in *C. rugatus*, and the sulci of the branchial regions are shorter, not prolonged to those which define the cardiac region of the carapace.

\* Annexe F, Crustacés, p. 3, in Maillard, 'Ile Réunion' (1862).

23. *Actæodes tomentosus* (M.-Edw.).

Darros Island, beach, an adult female (No. 200).

Specimens of this very common Oriental species are in the British-Museum collection from the Mauritius (*Lady F. Cole*); Rodriguez (*Transit-of-Venus Exped.*); Seychelles (*Dr. E. P. Wright*); Red Sea, Dædalus Shoal (*Lt.-Col. Playfair*); Duke of York Island (*Rev. G. Brown*); Sulu Islands (*U.S. Exploring Exped.*); Philippines (*Cuming*); Goto Islands (*Capt. H. C. St. John*); Port Essington, Minerva Reef, and Fiji Islands (*H.M.S. 'Herald'*); Samoa Islands (*Rev. S. J. Whitmee*); and Sandwich Islands (*W. H. Pease*).

24. *Leptodius exaratus* (M.-Edw.).

A specimen from the beach at Darros Island (No. 200) and Mahé Island (No. 196) are referred to this species, and may perhaps be best regarded as belonging to the variety *sanguineus*, M.-Edwards, which is said to be common at the Mauritius, although they have not the additional tooth behind the last of the normal antero-lateral teeth which usually characterizes *sanguineus*. From the variety designated *distinguentus* by De Haan\* they are scarcely distinguishable, except by their somewhat less convex and rugose carapace. I have referred to the uncertainty of the specific distinctions in this genus on p. 214.

If, as Dr. Richter surmises, the *Xantho quinquedentatus* of Krauss is to be regarded as synonymous with this species, Natal must be added to the recorded localities where *L. exaratus* occurs on the African coast.

25. *Leptodius exaratus*, var. *gracilis* (Dana).

Mozambique, obtained between tide-marks (Nos. 225, 227), two males; Poivre Island, beach (No. 198), eight specimens, of both sexes and different ages.

In the typical condition of this form the carapace is depressed and nearly smooth in its median regions: there are four distinct antero-lateral teeth (the one at the exterior orbital angle being usually obsolete); the first of the four is the smallest, with its apex obscurely defined; the three posterior are broad, triangulate, and very distinct. The chelipedes are nearly smooth, and have their fingers strongly arcuated, the lower, and sometimes the upper, finger being strongly toothed on its inner margin. On p. 214 I have referred to the localities whence the Museum possesses specimens of this variety, and to its apparent connexion with the typical *L. exaratus*; nevertheless it is usually easily distinguishable by the characters mentioned above.

\* *Xantho distinguentus*, De Haan, Faun. Japon., Crust. p. 48, pl. xiii. fig. 7 (1835).

26. *Phymodius rugipes*.

*Actæodes rugipes*, Heller, *Sitzungsber. der Akad. Wissensch. Wien*, xliii. (1) p. 330, pl. i. fig. 20 (1861).

Seychelles, 4–12 fms. (No. 194), a small male.

This species, originally described from the Red Sea, has been hitherto a desideratum in the Museum collection. The coloration (in spirit) is a brilliant red, with whiter blotches, whereof the largest is in the middle line of the carapace. It is distinguished from the other species of *Phymodius*, to which genus I think it must be referred on account of its strongly-lobulated carapace, which is less transverse than in *Carpilodes*, where it is referred by A. Milne-Edwards (N. Arch. Mus. Hist. Nat. ix. p. 181, 1873), by the rugose ambulatory legs, whose merus-joints, in the specimen I have examined, are denticulated along their upper margins. The basal antennal joint enters slightly within the inner orbital hiatus, but not more so than is usual in *Phymodius* (*P. unguatus*, *P. monticulosus*).

27. *Chlorodius niger* (Forskål).

Seychelles, 4–12 fms. (No. 194), an adult female.

On p. 215 I have referred to the distribution of this species as exemplified in the series in the British-Museum collection.

28. *Chlorodius miliaris*, A. M.-Edw.

Two specimens, adult males, were collected at the Seychelles with the preceding (No. 194).

This fine species has been hitherto a desideratum in the British-Museum collection. The specimens before me merely differ from M.-Edwards's description, based on specimens from New Caledonia, in the less elevated protogastric lobes, and in having the somewhat rounded frontal lobes separated by a rather deep median notch; the three posterior antero-lateral teeth are spiniform. The black coloration of the chelæ covers the distal part of the outer surface of the palms, where it forms a rectangular black patch.

29. *Chlorodopsis melanodactylus*, A. M.-Edw.

Etoile Island, 13 fms. (No. 191), four specimens; African or Eagle Island, 10 fms. (No. 184), an adult male. Seychelles, 4–12 fms. (No. 194); several specimens of both sexes and different sizes.

They agree in all essential characters with the description and figure of A. M.-Edwards, based on New-Caledonian examples, and with a specimen from the Oriental seas, without special locality, in the Museum collection (*H.M.S. 'Herald'*).

*Chlorodopsis pilumnoides* of Adams and White\* is a nearly

\* Crustacea of H.M.S. 'Samarang,' p. 41, pl. ix. fig. 3 (1848).

allied species; but in the adult male from Singapore in the British-Museum collection both carapace and chelipedes are much more spinulose, and the black coloration of the fingers extends over the inner and outer surface of the hand.

### 30. *Chlorodopsis areolatus*.

*Chlorodius areolatus*, *M.-Edwards, Hist. Nat. Crust.* i. p. 400 (1834).  
*Xantho dehaanii*, *Krauss, Südafrik. Crustaceen*, p. 29, pl. i. fig. 2 (1843), *nec Savigny*.

? *Chlorodius perlatus*, *McLeay, Annulosa in Smith's Zool. S. Africa*, p. 59 (1849).

? *Etisodes celatus*, *Dana, Pr. Acad. Nat. Sci. Philad.* p. 77 (1852);  
*U.S. Expl. Exp., Crust.* xiii. p. 188, pl. ix. fig. 4 (1852).

*Chlorodopsis areolatus*, *A. M.-Edwards, Nouv. Archiv. Mus. Hist. Nat.* ix. p. 231, pl. viii. fig. 8 (1873); *Hilgendorf, Monatsb. Akad. Wissensch. Berlin*, p. 790 (1878); *Richters, Decapoda in Möbius's Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen*, p. 148 (1880).

A good series of specimens was obtained on the beach at Darros Island (No. 199); also a female at Mozambique (No. 224).

Specimens are in the British-Museum collection from Port Essington and Fiji Islands (*H.M.S. 'Herald'*), besides others without special locality.

In the lobulation of the carapace and the form of the teeth of the antero-lateral margins, this species has much the aspect of a *Phymodius*, from which genus it is distinguished by the exclusion of the flagellum of the antennæ from the inner orbital hiatus, the hiatus, however, usually remaining open.

The description and figure of *Xantho dehaanii*, Krauss, seem to apply very well to this species except in one particular only—the legs are not very long as stated by Krauss. The coloration of the chelipede, as he represents it, is exactly what is usual in males I refer to *C. areolatus*.

### 31. *Etisodes electra* (*Herbst*).

A good series of specimens was obtained at the Seychelles, 4–12 fms. (No. 194).

The synonyms of this variable and widely-distributed species have been given on p. 217.

### 32. *Cymo andreossii* (*Audouin*).

A good series of specimens was collected at the Seychelles, 4–12 fms. (No. 194). Two of these specimens only have the fingers nearly colourless, the remainder belonging to the variety *melanodactylus* of De Haan, with dark-coloured fingers.

In the Report on the Crustacea collected by the naturalists of the

Transit-of-Venus Expedition at Rodriguez, I have already alluded to the geographical distribution of this very variable species\*.

The specimens in the Museum collection are from Rodriguez (*H. H. Slater*); Red Sea, El Tor (*Major MacDonald*), and Gulf of Suaz (*R. McAndrew* and *J. K. Lord*); Fiji Islands (*H.M.S. 'Herald'*); Samoa Islands (*Rev. S. J. Whitmee*).

The variety *melanodactylus* is usually less pubescent than the typical *C. andreossii*, and the lower part of the outer surface of the larger chelipede is usually, but not invariably, destitute of granules or tubercles.

A male and female, from the Dædalus Shoal, Red Sea (*Lt.-Col. Playfair*), which may be designated *C. andreossii*, var. *quadri-lobatus*, are distinguished from all other specimens of the genus I have seen by having the front armed with four very distinct equal and equidistant rounded lobes or teeth. In this variety the carapace is very distinctly granulated on the protogastric and hepatic regions, and the chelæ tuberculated on the whole of their outer surface, the tubercles being very large, rounded, and granulated on and near the upper margin; the fingers were dark-coloured.

In both specimens there is a red spot on the gastric, cardiac, and branchial regions of the carapace. It may perhaps prove to be specifically distinct.

### 33. *Actumnus setifer* (*De Haan*).

Of this species, upon whose synonymy and distribution I have remarked on p. 225, a male and three females were collected at the Seychelles, 4-12 fms. (No. 194), a small female at Ile des Neufs, 15 fms. (No. 187), and two males and a female at Providence Island, 17 fms. (No. 217).

The length of the carapace of the smallest ova-bearing female is less than 3 lines (6 millim.).

*Actumnus miliaris*, A. Milne-Edwards †, an allied species, also from the Seychelles, seems to be well distinguished by the much less prominent and acute lobes of the antero-lateral margins, and by the deflexed index or immobile finger of the larger chelipede.

### 34. *Eurüppellia annulipes*.

*Rüppellia annulipes*, *M.-Edwards*, *Hist. Nat. Crust.* i. p. 422 (1834); *Dana*, *U.S. Expl. Exped.*, *Crust.* xiii. p. 246, pl. xiv. fig. 4 (1852); *Stimpson*, *Proc. Ac. Nat. Sci. Philad.* p. 37 (1858); *nom. genericum præoc.*

A male and female were obtained on the beach at Poivre Island (No. 198).

In the British-Museum collection is a male from the Fiji Islands, Totoya (*H.M.S. 'Herald'*). Specimens from the Keeling or Cocos Islands (*Lt.-Col. Burnaby*) possibly belong to a different species, as they have the antero-lateral margins of the carapace less distinctly

\* *Phil. Trans.* clxviii. p. 487 (1879).

† *Nouv. Archiv. Mus. Hist. Nat.* i. p. 288, pl. xviii. fig. 7 (1865).

dentated, and carapace and chelipedes less distinctly granulated; in other particulars, however, they closely resemble the other examples in the British-Museum collection. In all the specimens I have examined there is a very large subbasal tooth or lobe on the inner margin of the mobile finger of the hand of the larger chelipede.

Dana records this species from the Kingsmill and Society Islands, and Stimpson from Loo Choo. It is evidently a widely distributed Oriental form.

Since the designations *Büppellia* and *Eudora* have both been pre-occupied in zoology (the former by Wiedemann, in 1830, for a genus of dipterous insects, and the latter by Péron and Lesueur, in 1809, for a genus of *Acalephæ*), I have slightly modified the former name, which has so long been used by carcinologists for this species of crab.

### 35. *Ozium (Epixanthus) frontalis*, M.-Edw.

Mahé Island, beach (No. 196); two males—one adult, the other very small.

Specimens are in the British-Museum collection from Madagascar, Tamatave (*Rev. Deans Cowan*); Nicol Bay, N.W. Australia (*M. du Boulay*); Fiji Islands, Ovalau (*H.M.S. 'Herald'*); Samoa Islands (*Rev. S. J. Whitmee*).

The genus *Epixanthus* can scarcely, I think, be regarded as generically distinct from *Ozium*; but the name may be conveniently used as a subgeneric designation for the species with broader, more depressed, and flattened carapace (*cf.* A. M.-Edwards, *Nouv. Archiv. Mus. Hist. Nat.* ix. p. 240, 1873).

Of the species designated by Adams and White *Panopeus formio*\*, there are two specimens in the Museum collection. The smaller, from Ligitan, is not to be distinguished from normal specimens of *O. frontalis*. The larger, which is an adult male, and is apparently the specimen figured, and therefore the type, has the carapace somewhat narrower and more convex, and the first tooth of the antero-lateral margin shorter and more distinctly separated by a notch from the outer margin of the orbit, which is also notched. On account of this latter character the species, as represented by this specimen, must, I think, be retained, together with *Epixanthus dentatus* (Ad. & White), in the genus (or subgenus) *Heteropanope*, in which Stimpson long ago included it (*Proc. Acad. Nat. Sci. Philad.* p. 35, 1858).

### 36. *Eriphia lævimanus* (M.-Edw.)

Two females from the beach at Darros Island (No. 200), and a small male from the Glorioso Islands (No. 220), have been retained for the Collection.

The series in the British Museum includes specimens from the Mauritius (*Lady F. Cole*); Madagascar (*Dr. J. E. Gray*) and Tama-

\* *Zoology of 'Samarang,' Crustacea*, p. 43, pl. ix. fig. 1 (1848).

tave (*Rev. Deans Cowan*); Seychelles (*Dr. E. P. Wright*); India, Bengal; Malaysia (*Dr. Bleeker*); Duke of York Island (*Rev. G. Brown*); Moreton Bay (*purchased*); West Hill, Queensland (*J. B. Jukes*); Canton River (*purchased*); Fiji Islands (*H.M.S. 'Herald'* and *U.S. Exploring Exped.*); Samoa Islands (*Rev. S. J. Whitmee*).

The carapace and chelipedes (in dried and spirit-specimens) are very prettily spotted with red; but the coloration is often entirely obliterated.

### 37. *Eriphia lævimanus*, var. *smithii*, *MacLeay*.

Glorioso Islands, from the beach and reef at low water, two females (No. 220); Mozambique, between tide-marks, a small female (No. 227).

I have already remarked upon the specimens of this variety in the Museum collection\*, which is found not only on the eastern coast of Africa and on the Mascarene Islands, but also in the Indian and Indo-Malaysian seas eastward, at least, to New Guinea, and, according to Hilgendorf, at the Tonga Islands.

### 38. *Eriphia scabricula*, *Dana*.

Mozambique, between tide-marks, a male (No. 225); Darros Island, beach, a male (No. 200).

Specimens of this species (which is always distinguishable from small examples of *E. lævimanus* by the narrower front and wider orbits, the triangulate and acute spines of the antero-lateral margins, and the pubescent and granulated chelipedes) are in the Museum collection from the Mauritius, and Fiji Islands, Ovalau, Totoya (*H.M.S. 'Herald'*), besides others without special locality. The ambulatory legs are transversely banded with spotted reddish markings, which are not discernible in *E. lævimanus*. The length of the carapace in the largest specimen examined is only about 8 lines (17 millim.). Besides several Polynesian localities, it has been recorded from the Mauritius (*A. M.-Edwards*), Fouquets (*Richters*), Madagascar (*Lenz & Richters*), the Sooloo Sea (*Dana*), and Ousima Island (*Stimpson*).

### 39. *Trapezia cymodoce* (*Herbst*).

Of this very common species a large series of specimens was collected at the following localities:—Seychelles, 4–12 fms. (No. 194); African or Eagle Islands, 10 fms. (No. 184); Darros, 22 fms. (Nos. 185, 233); Etoile, 13 fms. (No. 191); Marie-Louise, 17 fms. (No. 186); Des Neufs, 15 fms. (No. 187); and the Glorioso Islands, 7–10 fms. (No. 219).

In a former paper † I have remarked upon the synonymy and distribution of this species, and have pointed out the characters by

\* *Vide* Ann. & Mag. Nat. Hist. ser. 5, v. p. 227 (1880).

† Ann. & Mag. Nat. Hist. ser. 5, ii. p. 408 (1878).

which it may be distinguished from *T. ferruginea*, Latreille, *i. e.* by the more acute lateral spines of the carapace, and the suberistate and hairy palms of the chelipedes, and these characters are remarkably constant in adult examples; but young and half-grown specimens can scarcely be distinguished except by the suberistate hands. Since the publication of that paper, a specimen has been added to the Museum collection from Amboina (*Dr. P. Bleeker*).

#### 40. *Trapezia ferruginea*, Latreille.

A few specimens are in the collection from the Seychelles, 4–12 fms. (No. 194).

Since 1878 specimens from Ceylon, Galle (*Dr. W. Ondaatje*), and Honolulu (found among fishes of the collection of H.M.S. 'Challenger') have been added to the Museum collection.

#### 41. *Trapezia rufopunctata* (*Herbst*).

Etoile Island, 13 fms. (No. 191), ten specimens of varying ages and both sexes; Glorioso Islands, 7–10 fms. (No. 219), an adult male.

Specimens are in the British-Museum collection from the Mauritius; Madagascar, Tamatave (*Rev. Deans Cowan*); Rodriguez (*H. Slater*); Red Sea (*Col. J. Burton*); El Tor (*Major MacDonald*); Dædalus Shoal (*Lt.-Col. Playfair*); Gulf of Suez (*R. MacAndrew*); and Ceylon (*E. W. H. Holdsworth*). It is distributed, as I have already noted, throughout the Oriental Region.

This species, as has been repeatedly observed, varies much in the size and degree of acuteness of the frontal teeth, and in the size and number of the red spots with which the body is covered. The specimens from Etoile Island are mostly of the variety designated by Dana *T. maculata* of MacLeay\*, for which Rüppell's name *T. guttata* is an earlier and safer appellation †, characterized by the less prominent and acute frontal lobes and smaller spots on the body and legs. The latter is not a character dependent upon the age of the individual, since in the smallest example from Etoile, length of carapace only  $2\frac{1}{2}$  lines (5 millim.), the spots are as large as in the adult and large example from the Glorioso group. Another specimen from Etoile exhibits an intermediate condition in its markings, since several small spots are intermingled with the larger ones.

Dr. J. G. de Man, in the first of his papers on Crustacea collected by M. J. A. Kruyt in the Red Sea near Djeddah ‡, regards *T. rufopunctata* and *T. guttata* as distinct species (*t. c. ii. p. 176*)§.

\* In Smith's Zool. S. Africa, Annulosa, p. 67 (1849).

† Beschreib. 24 kurzschwänzigen Krabben des rothen Meeres, p. 27 (1830).

‡ *Vide* 'Notes from the Leyden Museum,' vol. ii. p. 171 (1880), and iii. p. 93 (1881).

§ I subjoin here a description of a mutilated Crustacean from Providence Island, 19 fms. (No. 217), which I cannot certainly identify with any genus or species with which I am acquainted. As it is a female and wants the cheli-

*Quadrilla*



42. *Tetralia cavimanus*, Heller.

Seychelles, 4-12 fms. (No. 194), nine specimens; Etoile Island, 13 fms. (No. 191), five specimens.

Specimens are in the British-Museum collection from Rodriguez (*H. H. Slater*); Red Sea, Gulf of Suez (*R. MacAndrew*); Dardalus Shoal (*Lt.-Col. Playfair*); Fiji Islands, Ovalau, Totoya (*H.M.S. 'Herald'*); and others without special locality. In some specimens there is a very distinct transverse band of darker colour on the front; in others it is scarcely, or not at all, discernible. The pit on the outer margin of the hand near the wrist, whereby Dr. Heller distinguishes this species from *T. glaberrima* (Herbst), varies greatly in depth: ordinarily, in well-grown and even in smaller examples, it is deep, well defined, and clothed with hair; but in other rather small specimens it is so shallow as scarcely to be distinguishable and devoid of hairs. Ordinarily, in adult males, the lower finger of the larger chelipede is more or less strongly dentated on its inner margin, and there is scarcely any interspace between the fingers when closed; but in two very dark-coloured males from the Seychelles, in the 'Alert' collection, the fingers are scarcely dentated and are strongly arcuated, meeting only at the tips. A similar variation occurs in a male from the collection of H.M.S. 'Herald,' which, on account of the entire absence of the palmar pit, is referred to *T. glaberrima*.

I think the *T. heterodactyla* of Heller is probably a mere variety of *T. cavimanus*, to which species (if, indeed, it be distinct from *T. glaberrima*) nearly all the specimens of this genus in the Museum collection must be referred. Although several species of this genus have been described, of earlier date than *T. cavimanus*, by Dana, Stimpson, and Lucas, by none of these authors, I believe, is any mention made of the subbasal pit on the palm of the chelipede which is so characteristic of *T. cavimanus*.

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pedes, I am not even sure whether it should be referred to the Cyclometopa or to the Catometopa. In most of its characters, however, it nearly resembles a species of *Trapezia*, differing mainly in the more elongated convex and regularly hexagonal carapace and in the dactyli of the ambulatory legs. The carapace is smooth and slightly but regularly convex; the front is about half the greatest width of the carapace, and is divided by three notches into four prominent triangular teeth, the median notch being the deepest; there is also a small spinule or tooth at the inner supraccular angle, and a short spine at the widest part of the carapace at the angle where the antero-lateral and postero-lateral margins unite. The endostome or palate has faintly indicated longitudinal ridges. The postabdomen is shaped nearly as in *Trapezia*. As in *Trapezia*, the inner and inferior margin of the orbit reaches to the front and excludes the antennæ, and bears a strong spine; the basal peduncular joint of the antennæ is rather short, and the penultimate joint reaches to the frontal margin. The outer maxillipedes present nothing remarkable, having a truncated merus-joint, and exognath reaching to its extero-distal angle. Of the legs only the third and fourth are present on each side; these are rather longer and slenderer than in *Trapezia*, and the three terminal joints are somewhat hairy; the dactyli are armed on their inferior margin with about half-a-dozen spinules, which increase successively in length. Colour (in spirit) yellowish white. Length of carapace nearly  $4\frac{1}{2}$  lines (9 millim.), breadth nearly 5 lines (10 millim.).

43. *Xiphonectes vigilans* (Dana), var. *obtusidentatus*.  
(PLATE XLVIII. fig. A.)

Thus is designated a female with ova, from the Seychelles, 4-12 fms. (No. 194), which may be specifically distinct from Dana's types, which were collected at the Fijis. As, however, Dr. F. Richters\* has recently recorded *X. vigilans* from the Seychelles, and notes important variations in the number of the antero-lateral marginal teeth, I do not at present venture to separate the specimen before me from this species. It is distinguished from *X. vigilans* and *X. longispinosus*, as figured by Dana, and also from *X. leptocheltes*, A. M.-Edwards, by the form of the frontal lobes, which are not triangulate and acute, but obtuse and broadly rounded, so that the two prominent submedian lobes are semicircular in form. There are eight antero-lateral marginal teeth on one side and seven on the other (including the outer orbital tooth, but excluding the long lateral spine); these teeth are very irregular and unequally developed.

Specimens which I refer to *X. vigilans*, Dana, are in the British-Museum collection from the Fiji Islands, *i. e.* Nairai, Ovalau, and Matuka (*H.M.S. 'Herald'*). These all have the submedian frontal teeth more triangulate than in the specimen from the Seychelles; in the largest specimen, which is about as large as the example from Seychelles, they are very prominent and acute. The antero-lateral marginal teeth are much more regularly and evenly developed, and vary from five to nine in number; they are least numerous in the largest example.

44. *Scylla serrata* (Forskål).

A small male is in the collection from Mozambique, between tide-marks (No. 227).

As is usual in immature examples, this specimen has the teeth of the front very obscurely developed.

Specimens of this very common species are in the Museum collection from the Mauritius (*Lady F. Cole*); Port Natal; S. Africa, at the mouth of the Swartkops River (*Dr. A. Smith*); Dukhun (*Col. Sykes*); Bali and W. Borneo (*coll. Dr. Bleeker*); Philippines, Luzon (*Cuming*); Hong Kong, China (*J. Reeves*); Fijis, Vanua Levu and Bau (*H.M.S. 'Herald'*); and New Caledonia (*J. Macgillivray*).

45. *Achelous granulatus*, *M.-Edw.*

Seychelles, 4-12 fms., a female with ova (No. 194).

The distribution of this species has been already noticed on p. 230.

\* In Möbius's 'Beitr. zur Meeresfauna der Mauritius und der Seychellen,' Decapoda, p. 152 (1880).

46. *Goniosoma natator* (*Herbst*).

A female was collected at Poivre Island, or Ile des Roches, 13-20 fms. (No. 183).

Specimens are in the British-Museum collection from the following localities:—Port Natal; Indian Ocean (*Gen. Hardwicke*); Penang (*Dr. Cantor*); Philippines (*Cuming*); and Shanghai.

47. *Thalamita sima*, *M.-Edw.*

Several young specimens were collected at the Seychelles, 4-12 fms. (No. 194); a series of specimens of both sexes and varying sizes at Poivre Island and Ile des Roches, 13-20 fms. (No. 183); a young male at the Glorioso Islands, 7-10 fms. (No. 219); and a female on the beach at Mozambique (No. 224).

I have remarked upon the distribution of this common species on p. 231.

48. *Thalamita quadrilobata*. (PLATE XLVIII. fig. B.)

The carapace is markedly transverse, of the form usual in this genus, depressed, with the lateral margins forming nearly a right angle with the front; the carapace marked with transverse lines, one of which passes across it at its greatest width from the bases of the fifth lateral marginal teeth, being interrupted only on the sides of the gastric region by the shallow depression indicative of the cervical suture. The frontal margin is divided into four squarely-truncated lobes of nearly equal width; the median lobes are more prominent than the lateral, with their anterior margins very shallow, concave, or excavate, and are separated by a narrow median incision; the lateral lobes have a straight margin. On the post-frontal part of the carapace, on either side of the middle line, are two slight prominences. The upper margin of the orbit has two distinct fissures, the lower margin is also marked by a deep fissure; and the inner suborbital lobe is very prominent and squarely truncated. There are five very strong, acute, subequal, lateral marginal spines; the postero-lateral margins are deeply concave; the posterior margin bounded by a raised line. The postabdomen of the male is five-jointed; the third to fifth joints coalescent; the basal antennal joint is armed with three strong spines. The chelipedes are massive and of equal size; the merus or arm has its posterior margin obtusely angulated, and its anterior margin armed with three principal spines and one or two very small intervening ones; the wrist granulated externally, with two small spines on its outer surface and a very strong spine on its inner margin; the palm granulated above and armed with five or six spines, externally traversed by three granulated lines, of which the lowermost is prolonged along the outer margin of the immobile finger; the fingers are very distinctly denticulated, those of the right side having each a larger subbasal tooth. The three following legs are slender; the

fifth or last pair are shorter than the preceding, the merus-joint is armed with a spine near the distal end of its posterior margin, the penultimate joint has its posterior margin armed with a series of spinules, the last joint ovate, of the form usual in the genus. Colour (in spirit) yellowish white; chelipedes punctulated externally with red, and fingers broadly banded with dark brown; the ambulatory legs are marked with dusky spots as in some other *Thalamite*. Length of carapace nearly 1 inch 2 lines (29 millim.), breadth to apex of the fifth lateral spines about 1 inch 11 lines (47 millim.); length of chelipede nearly 2 inches 7 lines (65 millim.).

The single specimen (an adult male) was obtained at the Seychelles, 4-12 fms. (No. 194).

It is distinguished from all other *Thalamite* known to me having four frontal lobes and the penultimate joint of the fifth ambulatory legs denticulated, by the form of the lobes of the front, the longer fourth lateral marginal spine of the carapace, and the strongly spinulose basal antennal joint.

#### 49. *Thalamita integra*, Dana.

Seychelles, 4-12 fms. (No. 194); an adult male.

Two very small specimens collected with this example belong either to *T. admete* or *T. savignyi*, since the basal antennal joint is granulated.

Of *T. integra* there are specimens in the British-Museum collection from the Fiji Islands, Nairai (*H.M.S. 'Herald'*), and Sandwich Islands (*U.S. Exploring Expedition*), and also specimens from Honolulu in the same group (*Lieut. Strickland*), besides the specimens of the Atlantic variety of this species which I have recently designated *africana*\*.

#### 50. *Thalamita crenata*, Rüppell.

Mozambique, between tide-marks (No. 227); three small specimens.

For the geographical distribution of this species see p. 232. One of the three specimens from Mozambique (a male) approaches *T. stimpsonii* in the somewhat smaller fourth tooth of the lateral margins, but there are no granulations upon the palms of the chelipedes as usual in that species.

#### 51. *Thalamita picta*, Stimpson.

A small male from the beach, Darros Island (No. 200), is recorded here, but with some uncertainty, as the fifth ambulatory legs are deficient.

In a male, also of small size (length of carapace about 7 lines,

\* Ann. & Mag. Nat. Hist. ser. 5, viii. p. 218 (1881).

15 millim.), without exact locality (*H.M.S. 'Herald'*), the carapace has three brilliant patches of red—one on either side of the middle line on the frontal region, and one on the cardiac region reaching to the posterior margin. No trace of this coloration appears in the specimen from Darros Island, but in other particulars they are closely alike. This species, although rare, has a wide Oriental distribution. Stimpson's types were from the island of Ousima, and A. M.-Edwards records it from New Caledonia; Hilgendorf (though doubtfully) from Mozambique. By Kossmann (*t. c. p. 47*) this species, as also *T. crenata*, is united with *T. prymna*, Herbst: possibly therefore it occurs also on the coasts of the Red Sea, but there is nothing to show whether Kossmann had among the specimens he refers to *T. prymna* any examples truly referable to *T. picta*, Stimpson.

#### 52. *Lissocarcinus orbicularis*, Dana.

A small male from the Seychelles, 4–12 fms. (No. 194), seems to be referable to this species; it has the carapace very prettily marked with circular spots of a dusky purplish colour with darker borders. Specimens are in the British-Museum collection from the Samoa Islands (*Rev. S. J. Whitmee*) and Suwarrow Island (*R. Hart*). In these specimens, as in the one figured by Dana from the Fijis, the purplish markings usually predominate, so as sometimes nearly to cover the carapace.

Of the type of the genus (*L. polybioides*, Ad. & White), which has a more elongated carapace with more prominent front and more distinctly developed lateral frontal lobes, there are, besides the original specimens from Borneo, two examples from Ceylon (*E. W. H. Holdsworth*) in the Museum collection.

#### 53. *Gelasimus annulipes*, M.-Edw.

A series of specimens was obtained on the beach at Mahé Island (No. 196).

To the localities (whence the Museum possesses specimens) mentioned in 1879, in my Report on the Crustacea of the Transit-of-Venus Expedition, the following are to be added:—River Zambesi (*H. Waghorn*); Port Natal, D'Urban Bay (*Alfred E. Craven*); Celebes (*H.M.S. 'Samarang'*); Batjan (*coll. Dr. Bleeker*); and Timor Laut (*H. O. Forbes*), received together with *G. tetragonum* and *G. vocans*.

Kossmann (*t. c. p. 53*) records a variety (*albimanus*) from the Red Sea, which is apparently scarcely distinguishable from the typical form of the species.

#### 54. *Gelasimus dussumieri*, M.-Edw.

A specimen obtained at Mahé Island with the preceding species is referred here, although with some hesitation. *G. dussumieri* has been hitherto a desideratum in the Museum collection.

This example is a male of moderate size, and resembles the figure of Milne-Edwards \*, but differs from those of Hilgendorf † and Hoffmann ‡, who record this species from Zanzibar and Nossi-Bé, in having the fingers of the larger chelipede destitute of prominent teeth or denticles; the fingers are, however, less elongated than in Milne-Edwards's figure, based on specimens from Malabar and Samarang; the arm has but a single denticle near the distal end of its anterior margin. Its recorded range extends eastward to New Caledonia.

#### 55. *Ocypoda ceratophthalma* (Pallas).

Ile des Roches, beach (No. 210), an adult male.

This species has been already referred to in the earlier part of this Report (p. 237).

#### 56. *Ocypoda cordimanus*, Desmarest.

Three adult males are in the collection, obtained respectively at Bird Island, Seychelles, African Island, on the beach, and Providence Island; also an adult female from the Ile des Roches (No. 210). The specimen from Bird Island was found in the interior of the island.

For the distribution of this and the preceding species I may refer to my recent revision of the genus §.

#### 57. *Macrophthalmus parvimanus*, Latr. (ined.), Milne-Edw.

Mahé Island, beach (No. 196); an adult male.

This species, hitherto a desideratum in the Museum collection, is remarkable on account of the extreme smallness and slenderness of the chelipedes in the male, which resemble those of the females in many other species. In the specimen before me the fingers are slightly inflexed and concave on their inner surfaces, but scarcely excavated; the palms have a patch of hair on their inner surface, but apparently no spine.

Dr. Richters records this species (which was originally described from supposed Mauritius examples) from the Fouquets, and M. A. Milne-Edwards from Réunion.

#### 58. *Euplax* (*Chænostoma*) *boscii* (Audouin).

Five males and a female lacking the chelipedes, obtained on the beach at Mozambique (Nos. 225, 227), are referred to this species, to which also belongs, as I think, a very small male from the Red Sea, received from the Godeffroy Museum as *Macrophthalmus depressus*, Rüppell (No. 16403).

\* Ann. Sci. Nat. sér. 3, xviii, p. 148, pl. iv. fig. 12 (1852).

† Crust. in Van der Decken's 'Reisen in Ost-Afrika,' p. 84, pl. iv. fig. 1 (1867).

‡ In Pollen and Van Dam's 'Recherches sur la Fauna de Madagascar,' p. 17, pl. iii. figs. 19-22 (1874).

§ Ann. & Mag. Nat. Hist. ser. 5, x, p. 376 (1882).

In these specimens the carapace is very distinctly granulated over its upper surface; the chelipedes are hairy on their inner surface, but are not ciliated on their margins; the palm is not carinated; the upper (mobile) finger has the blunt or quadrate tooth on its inner margin mentioned by Rüppell as characteristic of the male of *Macrophthalmus depressus*; the lower finger is slightly deflexed, so as to form an angle with the lower margin of the palm. I have already referred to *Euplax boscii* in the earlier part of this Report. The carapace is not quite so broad as in Rüppell's figure of *M. depressus*, based on a female specimen, and the upper orbital margin is sinuated, not straight as in that figure; so that I must regard *M. depressus* as a distinct species.

### 59. *Dotilla fenestrata*, Hilgendorf.

Mozambique, between tide-marks (No. 227), eleven specimens, all of them males.

There is in the British-Museum collection a series of specimens of both sexes of the allied *D. sulcata* (Forskål), from the Red Sea. The distinctive characters pointed out by Hilgendorf are constant in the two series.

*D. fenestrata* has been hitherto a desideratum to the collection of the Museum. Hitherto it has apparently been recorded only from the east coast of Africa, where it ranges from Ibo to Natal, if (as Hilgendorf notes, and as is doubtless correct) the specimens referred by Krauss to *D. sulcata* belong to *D. fenestrata*.

### 60. *Carcinoplax integra*. (PLATE XLVIII. fig. C.)

The body and limbs are everywhere clothed with a short close pubescence; the antero-lateral margins of the carapace, the frontal region above the anterior margin, and the chelipedes and limbs are fringed with longer hairs. Carapace transverse, with the antero-lateral margins entire and much shorter than the postero-lateral; the front is about one third the greatest width of the body, somewhat deflexed; its anterior margin nearly straight, with a very small median notch; the endostome without longitudinal ridges; the orbital margins entire, without teeth or fissures. The post-abdomen (in the young female) has none of the segments coalescent, at base it covers the whole width of the sternum. The eye-peduncles are pubescent, lie closely within the transverse orbits, and have a distinct black cornea; the basal (or actual second) joint is narrow and slender, and does not quite attain the front. The outer maxillipedes have a nearly quadrate merus-joint, with straight anterior margin and rounded, not excavated, antero-internal angle. The chelipedes are subequal and densely pubescent and hairy; merus short and trigonous, with a small blunt tooth or lobe near the distal end of the upper margin; wrist somewhat angulated, but not toothed on its inner margin; palm about as long as the wrist, rounded above and below; fingers naked at the tips and meeting

along their inner margins, which are strongly dentated. Ambulatory legs very hairy and pubescent, with the merus-joint slightly compressed, but not dilated; dactyli unarmed on the inferior margins and terminating in a small corneous claw. Colour (in spirit) pinkish; hairs yellowish white. Length of carapace nearly 2 lines (4 millim.), breadth about  $2\frac{1}{2}$  lines (5 millim.); length of third ambulatory leg 4 lines (nearly 9 millim.).

The single female in the collection was obtained at the Seychelles (4-12 fms.).

The species described by A. M.-Edwards as *Carcinoplax setosa*, from New Caledonia\*, resembles this form in many of its characters, but has a narrower, more arenate front, and dentated antero-lateral margins. To it I refer a specimen from the Fijis, Totoya (*H.M.S. 'Herald'*), and perhaps two from the Philippines, Bohol (*Cuming*), in the British-Museum collection.

*Ceratoplax arcuata*, described in the earlier part of this Report, is at once distinguished by the very differently shaped carapace, acute-edged eye-peduncles, &c.

#### 61. *Grapsus maculatus* (Catesby).

Two adult females of this very common and widely distributed species are in the collection from African Island (No. 210). To the localities mentioned in my Report in 1879 on the Transit-of-Venus Crustacea (*t. c.* p. 489), the following are to be added:—Canaries, Teneriffe (*Old Collection*); Lanzarote (*Rev. R. T. Lowe*); Madagascar, Tamatave (*Rev. Deans Cowan*); Amboina (*coll. Dr. Bleeker*); and Loyalty Islands, Lifu (*Rev. S. J. Whitmee*).

This species, as hitherto recorded, ranges throughout the Oriental Region southward to the Cape of Good Hope and New Zealand, eastward to the coasts of California and Peru, and occurs in the Atlantic Region at the Canary and Cape-Verd Islands and St. Helena, and on the American coasts and islands from Florida to Pernambuco (*cf.* Kingsley, *Proc. Acad. Nat. Sci. Philad.* p. 193, 1880, who has shown that Catesby's designation *maculatus* must be used for this species instead of *pictus* of Latreille). I have never seen the edition of Catesby's work published in 1771. In the original and pre-Linnean edition (1743) the figure and description are so bad as to be scarcely recognizable.

#### 62. *Grapsus strigosus* (Herbst).

Mozambique, beach (No. 227); a small male.

I refer to this common species, which is sometimes scarcely distinguishable from *G. maculatus*, specimens in the Museum collection from the Red Sea, Egyptian coast (*Sir J. G. Wilkinson*); Gulf of Suez (*R. MacAndrew*); Port Natal (*purchased*); Karachi (*the Karachi Museum*); Duke of York Island (*Rev. G. Brown*); Timor

\* *Nouvelles Archives du Muséum*, ix. p. 267, pl. xii. fig. 2 (1873).



Laut (*H. O. Forbes*); Keeling or Cocos Island (*Lt. Burnaby*); Fiji Islands, Nairai (*H.M.S. 'Herald'*); and Samoa Islands (*Rev. S. J. Whitmee*).

From *G. maculatus* this species seems to be best distinguishable by its usually broader, less abruptly deflexed front, with straighter margin, and by the more widely transverse, shorter epistoma.

### 63. *Geograpsus grayi* (*M.-Edw.*).

Ile des Roches, two adult males; Providence Island, an adult female (No. 210).

The series in the Museum collection includes specimens from Egypt (*Sir J. G. Wilkinson*); Mauritius; Zanzibar (*Sir J. Kirk*); Madagascar, Tamatave (*Rev. Deans Cowan*); Ceylon, Galle (*Dr. W. Ondaatje*); Loyalty Islands, Lifu (*Rev. S. J. Whitmee*); Maré (*W. Wykeham Perry*); and Fiji Islands, Matuka (*H.M.S. 'Herald'*).

Mr. Kingsley has already (*t. c.* p. 196) noted the identity of *Geograpsus rubidus*, Stimpson, under which name specimens from East Africa and Réunion are referred to by Hilgendorf and Hoffmann, with *G. grayi*.

### 64. *Metopograpsus messor* (*Forskül.*).

Mahé Island, beach (No. 196); a male.

The distribution of this common species has been referred to in the preceding part of this Report (p. 245.) The specimen from Mahé Island appears to belong to the variety designated by M.-Edwards *M. intermedius*, characterized by the larger markings of the carapace, the front is only very obscurely denticulated.

Mr. J. S. Kingsley, in his recent revision of the Grapsidæ\*, places the *Grapsus* (*Pachygrapsus*) *ethiopicus*, Hilgendorf, as a distinct species in the genus *Pachygrapsus*, being apparently unaware that Hilgendorf has himself admitted the correctness of Kossmann's identification of this species with *M. messor* †.

### 65. *Liolophus planissimus* (*Herbst*).

Thirteen specimens (among them but one adult male) were obtained at Darros Island on the beach (No. 200), and a very small male at Etoile Island, 13 fms. (No. 191).

Since my revision of the genus in 1878 ‡ specimens have been added to the Museum collection from Ascension Island (*Staff-Surgeon T. Conry*); Vizagapatam (*A. E. Craven*); and the Korean seas (*Capt. H. St. John*).

\* Proc. Acad. Nat. Sci. Philad. p. 200 (1880).

† Hilgendorf, Monatsb. Akad. Wiss. Berlin, p. 808 (1878).

‡ Ann. & Mag. Nat. Hist. ser. 5, i. p. 153 (1878).

66. *Xanthasia murigera*, White.

An adult female and small male from Mozambique, obtained on the beach (No. 237), agree in all particulars with White's typical specimens in the British-Museum collection from the Philippines (*Cuming*), and with a series of specimens from the 'Herald' collection, without indication of locality, but labelled as "parasitic on *Tridacna*." Dana records this curious species from the Fijis (Vanua Levu), and A. Milne-Edwards from New Caledonia; its occurrence at the western limit of the Indo-Pacific Region is now, I believe, recorded for the first time.

67. *Philyra rectangularis*. (PLATE XLIX. fig. A.)

Carapace of somewhat rhomboidal form, depressed, about as broad as long, with the angles at the junction of the antero-lateral and postero-lateral margins rounded; its dorsal surface is everywhere uniformly and very distinctly punctated; the front projects but little, and its anterior margin is slightly concave. The pterygostomial regions are slightly angulated; the posterior margin of the carapace projects somewhat and is perfectly straight, the postero-lateral angles being right angles. The eyes project slightly from the orbits, whose upper margins are marked with a fissure; the exognath of the outer maxillipedes is nearly as broad as the ischium-joint of the endognath, and reaches nearly to the acute distal end of the merus-joint. The chelipedes (in the female) are of moderate length and slender; the arm or merus-joint is granulated both above and below, but more thickly on its inferior surface; its margins are not distinctly angulated; the palm and wrist are minutely punctated on their upper and lower surfaces, and are granulated on their outer (or posterior) margins: the fingers are more than half as long as the palms, straight, acute, and are not denticulated on their inner margins: the ambulatory legs small and slender, with the dactyli longer than the preceding joints. The colour (in spirit) is light yellowish brown, carapace and chelipedes being punctulated with dusky grey. Length of carapace (of the female) under 3 lines (nearly 6 millim.).

A single female was collected at the Seychelles, 4-12 fms. (No. 194). The abdomen in this specimen has all the segments, except the first two and the last, coalescent.

This species is distinguished from nearly all of its congeners with which I am acquainted by the straight posterior margin of the carapace, with its prominent postero-lateral angles. *Philyra tuberculosa*, Stimpson\*, from Hong-Kong, which it resembles in this character, has the branchial, post-gastric, and genital regions of the carapace tuberculated. *Philyra levidorsalis*, Miers, from Goree †,

\* Proc. Acad. Nat. Sci. Philad. p. 160 (1860).

† Ann. & Mag. Nat. Hist. ser. 5, viii. p. 264, pl. xv. fig. 2 (1881).

also has a straight posterior margin to the carapace, but the postero-lateral angles are not prominent, and the chelipedes are of very different form; these characters will also apply to *P. carinata*, Bell, and another apparently undescribed species in the Museum collection from Penang (*Dr. Cantor*), which is allied to *P. carinata*, but has a more granulated carapace, a distinctly tridentate front, the lateral margins of the carapace bounded by a sharp cristiform line marked at intervals by small granuliform teeth, and much slenderer chelipedes, the palms of which are not distinctly granulated. This species, which only differs from *Pseudophilypira* in its less prominent front, I will designate as *Philypira rudis*.

### 68. *Pseudophilypira polita*. (PLATE XLIX. fig. B.)

In this little species the carapace is subrhomboidal, but (with the front) much longer than broad, slightly sinuated at the hepatic regions; the posterior margin nearly straight, but without prominent postero-lateral angles, the antero-lateral margins with a series of very distinct granules, which is continued for a short distance along the postero-lateral margins; the posterior margin is defined by a minutely granulated line; the frontal or cephalic region is very prominent, the front obscurely trilobate; the median lobe distinct and slightly deflexed, but the lateral lobes nearly obsolete; the dorsal surface is polished, and only very minutely punctulated. There is no distinct thoracic sinus, but one or two tubercles near the base of the chelipedes. The postabdomen (in the male) has all the segments (except the first and last) coalescent; the eyes are very small and lie well within the nearly tubular orbits, which have an external fissure and an internal hiatus for the reception of the small antennæ. The outer maxillipedes have the merus as long as or rather longer than the ischium-joint, acute at its distal extremity, near to which its margins are granulated; the exognath broad, with its outer margin somewhat arcuated and its distal end obtuse, the margins granulated, except towards the base. The chelipedes are rather short and somewhat triquetrous, with the margins very strongly granulated, as are also the upper and the anterior faces toward the base; on the inferior surface of the arm the granules are smaller and more crowded; palm and wrist nearly smooth; the palm suberistate on its upper and granulated on its lower margin; fingers about as long as the palm, slightly incurved at the tips, with a slight hiatus between them when closed. Ambulatory legs with the merus-joints more or less distinctly granulated on their lower margins. Colour (in spirit) yellowish white. Length of the only specimen nearly 4 lines (8 millim.); breadth rather over 3 lines (7 millim.), which is also the length of the chelipede when extended as far as its conformation will allow.

A male is in the collection from Poivre Island or Ile des Roches, dredged in 13-20 fms. (No. 183).

This species is distinguished from the three others of the genus by its much less distinctly trilobate front. *P. tridentata*, Miers, which is its nearest ally in this genus, has a much more coarsely punctulated carapace, and differs in other characters.

Three small male specimens of a species of *Leucosia* from the Gulf of Suez (*R. MacAndrew*) in the Museum collection, which were not described when I published my memoir on this group in 1877\*, because I doubted if they presented the characters of the fully adult, bear a curious resemblance to this species. They are distinguished not only by possessing a distinct, although shallow and imperfectly defined thoracic sinus, but also by the absence of the lines of granules from the inferior margin of the palm of the chelipedes and from the margins of the outer maxillipedes.

#### 69. *Nursilia dentata*, Bell.

A male was obtained at the Seychelles, 4-12 fms. (No. 194). The wide Oriental distribution of this species, which has been already noticed in the earlier part of this Report (p. 253), is evidenced by the acquisition of this specimen.

#### 70. *Arcania undecimspinosa*.

*Arcania undecimspinosa*, De Haan, *Faun. Japon. Crust.* p. 135, pl. xxxiii. fig. 8 (1841); Bell, *Trans. Linn. Soc.* xxi. p. 309 (1855); *Cat. Leucos. Brit. Mus.* p. 21 (1855).

*Arcania granulosa*, Miers, *Trans. Linn. Soc.* ser. 2, *Zool.* p. 240, pl. xxxviii. fig. 29 (1877); *Proc. Zool. Soc.* p. 44 (1879).

Seychelles, 4-12 fms. (No. 194); an adult male.

This specimen scarcely differs from De Haan's figure and the specimen from Moreton Bay in the British-Museum collection, which I formerly separated on insufficient grounds under the name of *A. granulosa*, except in its somewhat less strongly granulated carapace and the slightly recurved lateral spines of the third pair. Unfortunately the three posterior spines of the carapace were (subsequent to its examination) accidentally crushed in the specimen from the Seychelles.

There is in the collection another male specimen from the Seychelles (4-12 fms.), apparently referable to this genus, but which I hesitate to separate as a distinct species, as, on account of its very small size, I think it may not present all the characters of the fully-grown animal. The carapace is nearly circular in outline and is covered with close-set granules; its lateral and posterior margins are armed with twelve small nearly equidistant and equal granulated spines, those on the posterior margin being smaller and tuberculiform. The front is bilobate and slightly concave above;

\* *Trans. Linn. Soc.* ser. 2, *Zool.* i. p. 235 (1877).

the lobes but little prominent. The postabdomen has all the segments, except the last, coalescent. The inferior surface of the carapace is closely granulated. The exognath of the outer maxillipedes is rather narrow, with a straight outer margin, and does not reach to the distal end of the merus-joint of the endognath. The chelipedes are rather small, and arm, wrist, and palm are closely granulated, but otherwise unarmed; palm not twice as long as the wrist, rather turgid; fingers about as long as the palm, slender, and meeting along their inner edges. Colour (in spirit) pinkish. Length of carapace barely 2 lines (4 millim.).

This specimen is distinguished from all of the species of this genus with which I am acquainted by the evenly-granulated carapace and the number and disposition of the spines of the lateral and posterior margins. If the characters should prove constant, I would propose to designate it as *Arcania duodecimspiuosa*.

*Arcania pulchella*\*, from the Fijis, which is evidently very nearly allied to it, has the lateral margins armed (on each side) with about seven teeth, the front nearly straight, the regions of the carapace strongly mammillated.

#### 71. *Ebalia granulata* (Rüppell)?

Since the original diagnosis is very brief, I append the following description:—

The body and legs are everywhere covered with numerous very close-set and crowded perliform granules, which are largest on the postabdomen and on the merus-joints of the chelipedes; the carapace is nearly circular in outline (not rhomboidal), but a little broader than long, moderately convex, the gastric and cardiac regions defined by faintly indicated lateral *sulci*. The front is slightly concave, and projects less than the buccal cavity, so that the outer maxillipedes are just visible in a dorsal view; the hepatic regions are prominent, the lateral margins are slightly sinuated, but not lobate or toothed. The postabdomen (of the female) has all the joints, except the first two and the last, coalescent. The eyes are closely set in the nearly circular orbits; the small antennæ enter the inner orbital hiatus; the merus-joints of the outer maxillipedes are shorter than the ischium-joints; the rather narrow exognaths have a straight outer margin, and do not reach to the distal ends of the merus-joints; the chelipedes (in the female) are rather small, the merus-joint or arm has its inner distal angle somewhat produced and rounded, but is not toothed; carpus small, rounded; palm little longer than the carpus, rather turgid; the fingers are longer than the palm, meet along their inner edges, and are slightly incurved at the tips. The ambulatory legs are very slender; the dactyli bear a minute terminal claw. Colour (in spirit) pinkish. Length of carapace about  $2\frac{1}{2}$  lines (5 millim.); of chelipede (of the female) about 3 lines (nearly 7 millim.).

\* *Ebalia pulchella*, Journ. Mus. Godeffroy, iv. p. 85, pl. xiii. fig. 2 (1873).

The single example was collected at Providence Island, 24 fms. (No. 215).

It only differs from Rüppell's figure (*t. c.* p. 17, pl. iv. fig. 3) in the somewhat broader carapace and shorter granulated chelipedes, and I do not venture, therefore, to separate it as a distinct species.

*Ebalia granulata* has been hitherto a desideratum in the Museum collection. Originally described by Rüppell as *Nursia granulata*\*, it was retained as a doubtful member of that genus by Milne-Edwards†, who had seen no specimens. Prof. T. Bell, in his monograph of the family‡, makes no mention of the species; but it is included by Von Martens in his conspectus of the East-African Crustacea§, who refers to it as *Ebalia granulata*.

The nearest ally to this species with which I am acquainted is *Ebalia miliaris*, A. M.-Edwards||, a species from Upolu, Samoa Islands, which is only very briefly characterized, but which differs in the shorter dactyli of the chelipedes and the much more robust ambulatory legs. *Ebalia orientalis*, Kossmann¶, from the Red Sea, differs altogether in the form of the carapace, which is subrhomboidal, with deep concavities behind the antero-lateral margins.

### 72. *Calappa hepatica* (Linn.).

Mozambique, beach (No. 224); an adult male.

This very common species has been referred to in the preceding part of this Report (p. 257).

### 73. *Calappa gallus* (Herbst), var. *bicornis*.

This variety is so nearly allied to the typical *Calappa gallus* (Herbst), with which I believe the W.-Indian *C. galloides*, Stimpson, to be identical, that it will suffice here to point out the characters by which the specimens in the Museum collection may always be distinguished. The rostrum is not, as in the ordinary condition of *C. gallus*, entire and obtuse or very slightly excavate at its distal end, but is deeply emarginate, so as to consist of two distinct lobes or spines, on the outer side of each of which there is a smaller tooth, which tooth is, however, sometimes distinguishable in the typical *C. gallus*; the upper margins of the orbits are denticulated, not smooth as in the typical form, the tubercles of the carapace are usually more conical and acute. It may not improbably prove to be a distinct species.

\* Beschreib. 24 kurzschw. Krabben des rothen Meeres, p. 17, pl. iv. fig. 3 (1830).

† Hist. Nat. des Crust. ii. p. 138 (1837).

‡ Trans. Linn. Soc. xxi. pp. 277-313 (1855).

§ In Von der Decken's Reisen in Ost-Afrika, iii. (1) p. 110 (1869).

¶ Journ. Mus. Godeffroy, iv. p. 85, pl. xiii. fig. 2 (1873).

¶ Malacostraca, in Zoolog. Ergebn. roth. Meeres, i. p. 65, pl. i. fig. 6, pl. iii. fig. 16 (1877).

A single female, in which the chelipedes are deficient, was obtained at Providence Island, 19 fms. (No. 217).

A specimen also of this variety is in the British-Museum collection from the Indian Ocean, and others from the collection of H.M.S. 'Samarang' without special locality. Of the typical *C. gallus*, there are specimens in the collection from the Mauritius; Ceylon (*E. W. H. Holdsworth*), and others without special locality; also specimens from the West Indies; and Garden Key, Tortugas (*Smithsonian Institution*, designated *C. galloides*). Specimens from the Philippines (*Cuming*) and Eastern Seas (H.M.S. 'Samarang'), which possibly belong to this species, have the tubercles of the carapace larger, smoother, and more rounded than in the typical *C. gallus*.

A. Milne-Edwards has recently described a species, *C. angusta*\*, from the West Indies, which is too briefly characterized to be identified with certainty, but with which *C. gallus* var. *bicornis* may possibly be identical. The lateral margins of the carapace are, however, described as finely granulated, whereas in var. *bicornis* they are distinctly dentated, as usual in the genus *Calappa*.

#### 74. *Cymopolia whitei*. (PLATE XLIX. fig. C.)

The carapace is shaped nearly as in *C. jukesii*, White, which this species much resembles; it is subquadrate, transverse, with the posterior margin slightly rounded; the cervical and other *sulci* of the carapace are distinct and smooth, the dorsal surface between them is everywhere granulated, but is without spines. The front is moderately prominent, and is divided by a median fissure into two median lobes; outside of which the frontal margin is sinuated, but not distinctly lobate; the upper orbital margin is divided by two deep fissures, the median lobe truncated, the outer orbital angle prominent and acute; behind it on the lateral margin of the carapace are two smaller teeth. The fourth to sixth segments of the postabdomen are partially coalescent; its sides are subparallel to about the middle of the penultimate segment, whence they converge rapidly to the distal end of the terminal segment, which lies just between the bases of the outer maxillipedes, as in *C. dentata*, A. M.-Edwards. The cristiform lobe on the anterior margin of the eye-peduncles has its anterior margin regularly arcuated. The inner suborbital lobe is subacute and but little prominent; there is a prominent subquadrate lobe on the outer side of the peduncles of the antennæ, whose flagella are about 14-jointed. The merus-joint of the outer maxillipedes has an incurved tooth or lobe at its extero-distal angle as in *C. jukesii*. The chelipedes (in the small males I have examined) are rather small, slender, and of nearly equal size; merus and carpus unarmed; palm about twice as long as the wrist, and smooth or very obscurely granulated; fingers about half as long as palm, acute, and somewhat deflexed, with their inner edges

\* Bull. Mus. Comp. Zool. vii. p. 18 (1880).

not denticulated. Ambulatory legs with the joints unarmed; the merus-joints in the third and fourth pairs, although slightly dilated, much less so than in *C. jukesii*, nor is their surface tuberculated and their margins denticulated as in that species; the penultimate joints are also less dilated, the dactyli about as long as the preceding joints. Colour (in spirit) yellowish or whitish. Length of carapace of the largest specimen (a female) about 4 lines (nearly 9 millim.), length of leg of the third pair about 8 lines (17 millim.).

Seychelles, 4-12 fms. (No. 194); an adult and smaller female and two small males.

This species is nearly allied to *C. jukesii*, White\*, from Sir C. Hardy's Island, Australia, from which it is distinguished by the different form of the cristiform lobe of the ocular peduncles, and the much less dilated and non-denticulated merus-joint of the third and fourth ambulatory legs. From *C. dentata*, A. Milne-Edwards†, from the West Indies, to which it is also apparently nearly related, it is distinguished by the non-spinose or dentated merus-joints of the legs and by the smaller chelipedes of the male.

#### ANOMURA.

##### 1. *Dromidia spongiosa*, Stimpson, var. ? *stimpsonii*. (PLATE L. fig. A.)

A female from Mozambique, obtained between tide-marks (No. 224), may perhaps be referred to this species. It differs from Stimpson's description only in the form of the front, which, although deeply longitudinally concave, is not at all bicuspidate, and in the coloration, which (in spirit) is brownish, the fingers only being red. This character and also the absence of orbital teeth will distinguish this species from the *Dromidia? rotunda*, M'Leay‡, also from the Cape. From the *Dromidia unidentata*, Rüppell, which Bianconi§ records from Mozambique, it is apparently distinguished by the much shorter pubescence of the carapace and legs, and by the obsolescence of the lateral marginal tooth, as well as by the non-bicuspidate front. If it be specifically distinct, I would propose the designation *D. stimpsonii* for this form, which when received was deeply ensconced in a species of tunicate Ascidian.

A very small male is in the collection from Poivre Island or Ile des Roches, whose generic position (in the absence of specimens of the female sex) must remain uncertain, which is possibly referable to the *D. rotunda*, M'Leay. As in that species, the front is distinctly bicuspidate, and there is a tooth above the inner margin of the orbit. There is no tooth, but only a slight prominence, behind the lateral sutures of the carapace. The body and legs are clothed with

\* Appendix to Jukes's Voyage H.M.S. 'Fly,' p. 338, pl. ii. fig. 1 (1847); Miers, Crust. in Zool. 'Erebus' and 'Terror,' p. 3, pl. iii. figs. 4, 4a (1874).

† Bull. Mus. Comp. Zool. viii. p. 28 (1880).

‡ Annulosa in Smith's Zool. S. Africa, p. 71 (1849).

§ Mem. Accad. Bologna, ser. 2, ix. p. 207 (1869).



rather long whitish hairs, the chelipedes rather slender; finger-tips white.

By Kossmann (*t. c.* zweite Hälfte, p. 67, 1880) *D. unidentata* and *D. rotunda* are regarded as synonymous. The specimens collected by Kossmann in the Red Sea are distinguished from *D. spongiosa* var. *stimpsonii* by the prominent lateral teeth of the rostrum and the existence of a distinct lateral marginal tooth behind the cervical suture.

## 2. *Dromia vulgaris*, *M.-Edw.*

Two very small specimens from Providence Island, 19 fms. (No. 217), are perhaps referable to this species. They do not present the elongated tubercles on the sternal surface characteristic, as Hilgendorf has shown, of *D. rumphii*\*, to which species a specimen from the Mauritius (*M. Robillard*), which I formerly designated as *D. vulgaris*, is to be referred, as the sternal tubercles are strongly developed. A female, presumably from the Indian Ocean (*General Hardwicke*), apparently belongs to *D. vulgaris*, since in this specimen the sternal tubercles are absent; yet it is to be noted that it presents but slight indications of the secondary tubercle or spine behind the base of the second antero-lateral marginal spine which is generally characteristic of *D. vulgaris*. In the specimen from Mauritius also the secondary lateral spine is absent, but in an adult male Malaysian specimen from Dr. Bleeker's collection it is strongly developed.

## HOMALODROMIA, gen. nov.

Carapace flattened above, somewhat hexagonal in shape, almost as broad as long. Front broad, consisting of two prominent lobes which project over and beyond the bases of the antennæ, and are each excavated at the distal extremity. Epistoma (or interantennular septum) triangulate and united with the front. Palate with faintly defined longitudinal ridges (*colliculi*). The sternal *sulci* in the female terminate in two strong tubercles, which are nearly in contact at their bases, and are situated between the bases of the chelipedes, which have the apices of the fingers denticulated, corneous, and excavated. Ambulatory legs of the second and third pairs without spines or tubercles, with the merus-joint not dilated, the dactyli slightly curved and armed on the inferior margin with two or three accessory spinules. Fourth legs more robust and much shorter than the fifth pair and scarcely prehensile, the penultimate joint being armed at its distal extremity with a very small spinule. Fifth legs slender and elongated (yet less elongated than in *Pseudodromia*), shorter than the second legs, prehensile, with the penultimate joint shorter than the preceding, and its terminal spine slender, arcuate, and about as long as the slender arcuate dactylus.

This genus cannot be confounded with any known to me. It

\* Monatsber. Akad. Wiss. Berlin, p. 813 (1878).

seems to be most nearly allied to *Pseudodromia*, Stimpson\*, of which I have seen no specimens, but is distinguished by the flattened carapace, the different form of the front, which joins the antennular septum, and the much shorter fifth ambulatory legs.

### 3. *Homalodromia coppingeri*. (PLATE L. fig. B.)

Carapace (in the female) flattened above, with the frontal region slightly deflexed, the sides convergent to the posterior margin from the hepatic regions. The front is about one-half of the greatest width of the carapace; the two lobes of which it is composed are separated to their bases by a rather wide interspace, and each lobe has a wide and rather shallow excavation at its distal extremity, with the antero-lateral angles produced and spiniform. There is a small spine or tooth at the exterior orbital angle, and one at the inner inferior orbital angle. The sternal tubercles are somewhat elongated and divergent from their bases. The eyes are deeply set in the small orbits. The second peduncular joint of the antennæ terminates in two spines, and thus appears furcated at its distal extremity; the antennal flagella are considerably elongated. The merus-joint of the outer maxillipedes is about as long as the ischium-joint, and widens somewhat to its distal extremity, which is truncate; it bears the next joint at the inner end of its distal margin; the narrow, straight exognath reaches to the distal end of the merus. The chelipedes (in the female) are rather shorter and little more robust than the following joints, with the arm and merus short and unarmed, wrist with two spines on its outer surface near the distal extremity; palm about as long as fingers, rounded above and below, and without spines; fingers dentated on their inner margins and at the semi-excavated distal extremity; the second and third legs are without spines or tubercles, with the dactyli slightly shorter than the penultimate joints, terminating in a corneous claw, and bearing, as already stated, two or three accessory spinules; in the fourth legs the strongly curved dactyl is unarmed and about equals the penultimate joint in length; in the fifth legs the merus is slender and elongated, longer than the following joint; the spiniform process of the penultimate joint is strongly curved and constitutes with the dactyl a perfectly formed prehensile organ. Colour (in spirit) pinkish; the body is everywhere closely pubescent: longer hairs clothe the margins of the carapace at the hepatic regions and the margins of the postabdominal segments and legs. Length of the carapace of the single example (an adult female) to end of rostrum nearly  $3\frac{1}{2}$  lines (7 millim.), breadth a little less; length of first ambulatory leg about  $4\frac{1}{2}$  lines (nearly 11 millim.); of fifth leg  $3\frac{1}{2}$  lines (nearly 8 millim.).

The single specimen was collected at Providence Reef, 24 fms. (No. 215), and has the carapace somewhat crushed on the dorsal surface and the fifth ambulatory legs detached.

\* Proc. Acad. Nat. Sci. Philad. p. 225 (1858).

4. *Birgus latro* (Linn.).

Du Lise Island, Glorioso Group; beach (an adult female).

Specimens are in the British-Museum collection from the Mauritius (*Lady F. Cole*), Malayasian seas (*Dr. P. Bleeker's coll.*), and Fiji Islands, Nairai (*H.M.S. 'Herald'*), besides others from the 'Samarang' and 'Herald' collections without special indication of locality.

5. *Cænobita perlata*, *M.-Edw.*

Eagle and African Island, beach (No. 210). Five males are referred to this species, mostly inhabiting shells of the genus *Dolium*.

Specimens are in the British-Museum collection from the Mauritius. In this species there is usually an oblique series of somewhat more elongated tubercles on the upper surface of the palm, occupying the place of the series of oblique ridges in *C. rugosa*. The basal joint of the right fifth ambulatory leg is in the adult male furnished with an elongated curved styliform lobe, as noted by De Haan; this does not exist in a small male from Batjan (*coll. Dr. Bleeker*) which I have designated *C. perlata* var. ? *affinis*, and which may belong to a distinct species.

6. *Pagurus punctulatus*, *M.-Edw.*

Darros Island, beach (No. 199); a small example in a shell of *Voluta geographica* (L.).

Specimens of this very common species are in the Museum collection from the Mauritius (*Old Collection*); Rodriguez (*G. Gulliver*); Seychelles (*Dr. E. P. Wright*); Madagascar (*Dr. J. E. Gray*); Celebes, Batjan (*Dr. Bleeker*); Borneo (*L. Dillwyn*); Philippine Islands (*Cuming*); Duke of York Island (*Rev. G. Brown*); Australia, Bramble Key (*J. B. Jukes*); and other Australian specimens without special locality; Fiji Islands, Ngau (*H.M.S. 'Herald'*); and Samoa Islands (*Rev. S. J. Whitmee*).

A. White\* refers to this species under the designation of *P. meqisto* (Herbst); but on examination of his figure† I find that Milne-Edwards's citation of this as an imaginary (or manufactured) type is correct; and therefore I retain the name *P. punctulatus*, which is usually adopted for the species (*cf. Hilgendorf, Crust. in Von der Decken's Reisen in Ost-Afrika, iii. (1) p. 95, 1869*).

7. *Pagurus guttatus*, *Olivier?*

As our specimen differs somewhat from the brief description published, I subjoin the following:—

The carapace is depressed, with the postfrontal, lateral, longi-

\* List Crust. Brit. Mus. p. 60 (1847).

† Naturgesch. der Krabben u. Krebse, iii. p. 23, pl. lxi. fig. 1 (1804).

tudinal, and cervical sutures well defined; there is no median rostral lobe, and the lateral lobes of the frontal margin (situate between the eyes and antennæ) are obtuse and little prominent. These lateral margins are armed with a few very small spinules at and behind the antero-lateral angles; the branchial regions are moderately dilated. The sternum between the bases of the fourth pair of legs is of considerable width, and the coxæ of this and of the third pair widely remote from one another, but those of the first and second pair are contiguous. The postabdomen (in the female) bears three triramose ciliated appendages, and in the middle of its inferior surface a strong conical and somewhat hairy fleshy protuberance; above it is protected by membranaceous plates; its terminal segment is very small. The eye-peduncles are thickened somewhat distally, and are somewhat longer than the anterior margin of the carapace; their corneæ are small and occupy about a fifth of the total length; their basal scales are as broad as long and denticulated on the distal margins at and near the antero-internal angles. The peduncles of the antennæ are rather shorter than the eye-peduncles; the antepenultimate joint is armed above with a strong setose spine, at base of which is a smaller spine; the two last peduncular joints are slender; the joints of the flagella nearly naked. The larger (left) chelipede has a trigonous merus-joint, whose upper margin is not toothed, but whose lower margin has about half a dozen irregular spines and teeth; the carpus is spinulose on all its upper and outer surface; the palm (nearly twice as long as the wrist) has its upper and half of its outer surface spinulose, but the lower half of its outer surface smooth, except at the inferior and proximal angle; the lower margin, both of palm and immobile finger, is thin-edged, straight, and spinulose; the inner surface of the palm has a few granules on its upper part; the mobile finger is spinulose above, near the base, and both fingers have their apices subacute, with only very small corneous tips. In the slender smaller chelipede both wrist and palm are spinulose and hairy on their upper and outer surface, the fingers are sub-excavate at apex, with corneous tips, the upper spinulose at base; the second and third legs are slender and rather hairy, with the dactyli slender, arcuated, and much longer than the preceding joints; on the left side the second legs have the penultimate and last joints spinulose above, but nearly smooth on the outer surface; the terminal joint externally longitudinally canaliculated; the third (left leg) has its penultimate joint spinulose all over the outer surface; its terminal joint is broken, but was apparently externally longitudinally canaliculated and strongly spinulose above; in the fourth legs the penultimate joint terminates as usual in a scabrous pad, and the dactyl is arcuate and denticulated on its inner margin; the fifth legs are apparently more distinctly chelated, and are densely hairy at the distal extremity. The chelipedes and ambulatory legs are rather scantily clothed with hair. Coloration (in spirit) yellowish with reddish patches (interpunctulated with white) on the postfrontal regions of the carapace, chelipedes, second and third legs. Length

of carapace, in the middle line, about  $6\frac{1}{2}$  lines (14 millim.); length of larger (left) chelipede nearly 11 lines (23 millim.); of second (left) ambulatory leg 1 inch  $1\frac{1}{2}$  line (28 millim.).

Seychelles, 4–12 fms. (No. 194); an adult female.

*P. guttatus*, Olivier, as described and figured, differs somewhat in the spinulation of the chelipedes and two following legs and in the coloration.

In the form and spinulation of the larger chelipede it somewhat resembles *P. varipes*, Heller\*; but that species is distinguished by many important characters, as (*e. g.*) by the shorter eye-peduncles, the existence of a strong tooth on the upper margin of the merus-joint of the larger chelipede, and in the form and sculpture of the left leg of the third pair (*cf.* Dr. Heller's figure, *t. c.* pl. ii. fig. 3).

The type of *P. guttatus* was from the Mauritius; Lenz and Richters record this species from Madagascar.

Dana refers specimens from Upolu (which may, however, be specifically distinct) to this species.

### 8. *Calcinus tibicen* (Herbst).

Mozambique, between tide-marks (No. 225); a female.

A specimen from the same locality was presented to the British Museum by the late Dr. Livingstone. Specimens are in the Museum collection from Rodriguez (*H. H. Slater*); Madagascar, Tamatave (*Rev. D. Cowan*); Keeling or Cocos Islands (*Lieut. Burnaby*); Pelew Islands (*Dr. G. L. King*); and Sandwich Islands (*W. H. Pease*); besides a series of specimens from the 'Herald' collection without locality.

### 9. *Petrolisthes lamarckii* (Leach).

Darros Island, beach (No. 200); an adult male and female.

These specimens present the distinctive characters of the species referred to in the preceding part of this Report (p. 268). The body (in spirit) is of a reddish colour, punctulated with yellow; the carpus and penultimate joints of the first and second ambulatory legs alternately banded with yellow and red. In some specimens from Ceylon (*Dr. W. Ondaatje*) the yellowish colour predominates, as in the following variety.

### 10. *Petrolisthes lamarckii*, var. *asiaticus*, Leach.

Of this variety, if it can be so styled, three specimens were collected with the typical *P. lamarckii* at Darros Island. In these specimens, and in almost all I have examined, except Leach's type, from the Mauritius, a longitudinal purplish line exists on the upper surface of the palms of the chelipedes, and the outer (or posterior) margin of the palm and mobile finger is marked with a series of

\* Sitz. Akad. Wissensch. Berlin, xliv. (1) p. 244, pl. i. fig. 1, and pl. ii. figs. 2, 3 (1862).

spots of a similar colour, which are larger than those with which the hand is covered.

To this variety are referred specimens from the Philippines, Corregidor (*Cuming*); the island of Ty-pin-san (*H.M.S.* 'Samarang'); Keeling or Cocos Islands (*Lt. Burnaby*); and Fijis, Ovalau (*H.M.S.* 'Herald').

#### 11. *Petrolisthes annulipes*, White (ined.), Miers.

Seychelles, 4-12 fms. (No. 194); an adult female and small male.

The occurrence of this species (described in the preceding part of this Report) in the western limits of the Indo-Pacific region proves its wide geographical range, and it may be that it will prove to be not specifically distinguishable from its near allies *P. scabricula*, Dana, from the Sooloo Sea, and *P. militaris*, Heller, from the Nicobars; but even if it should be necessary to unite the three forms, the distinctions referred to in my description of *P. annulipes* would apparently suffice to constitute it a very distinct variety, and I do not venture to unite them in the absence of types of the two first-mentioned species for comparison.

A small specimen obtained at Ile des Neufs, 15 fms. (No. 187), more nearly resembles *P. scabricula* in having the outer margin of the palm of the chelipedes pubescent, and a series of spinules extending along the whole length of the posterior margin of the wrist, but in this specimen the palms are pubescent, but not transversely striated; it is probably not fully grown, but I think belongs to a distinct species.

#### 12. *Petrolisthes maculatus*, M.-Edw.

Since I identify this species with the very short diagnosis of *P. maculatus* with much uncertainty, I append the following description:—

The carapace is rather convex, smooth, and polished, and very much longer than broad; the front is slightly deflexed, very prominent, of a rounded triangulate form, with a slight lateral sinus or dilatation above the inner orbital angle; the outer orbital angle is obtuse; there is a spinule on the lateral margins of the carapace, at some distance behind the outer orbital angle; on the sides of the carapace, below the lateral margins, is a longitudinal furrow. The second joint of the peduncle of the antennæ bears an acute lobe or spine. The chelipedes are smooth and naked; the merus-joint is very short, with a tooth or lobe at its antero-internal angle; the anterior margin of the wrist is armed with a prominent acute sub-basal tooth or lobe, followed by one or two very indistinct smaller teeth; the posterior margin is entire; the palm is flat and smooth above, its anterior margin bordered by a raised line, its posterior margin (and that of the immobile finger) cristiform and acute; the

fingers are acute, slightly incurved at the tips, and have their inner margins thin-edged and entire; the three following pairs of legs have the joints smooth, naked, and rounded; the merus-joints but little thickened and without spinules; the penultimate joints have a small mobile spinule at the distal end of their posterior margin; dactylus with a single small accessory spinule. The whole of the upper and lateral surface of the carapace and the legs are closely punctulated with small circular red spots: the ground-colour is yellowish. Length of carapace nearly 6 lines (12 millim.).

A single male was obtained on the beach at Mozambique, between tide-marks (No. 224).

There is scarcely any character mentioned in M. Milne-Edwards's very short description, based on a specimen from New Ireland, that will not apply to the specimen from Mozambique, unless it be what relates to the spines of the wrist.

### 13. *Petrolisthes villosus* ?

? *Porcellana villosa*, Richters, *Decapoda*, in Möbius's *Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen*, p. 160, pl. xvii. figs. 11, 12 (1880).

A small male collected at Darros Island (No. 200) with *P. lamarchii* is referred here. To Dr. Richters's short description I may add the following:—The median frontal lobe is prominent and rounded, and more distinctly defined than in *P. lamarchii*, var. *asiatica*. There is apparently no spinule on the lateral margin of the carapace. There is a strong lobe or tooth at the distal end of the merus-joint of the chelipedes; between the three prominent lobes or teeth of the anterior margin of the wrist are one or two smaller teeth; the posterior margin of the wrist is entire. The dactyli of the first to third ambulatory legs have three small accessory spinules. This species has been hitherto a desideratum to the Museum collection.

### 14. *Polyonyx biunguiculatus* (Dana).

Several specimens from the Seychelles, 4–12 fms. (No. 194), and Etoile Island, 13 fms. (No. 191), are referred to this species, which, as I have stated in the preceding part of this Report (p. 271), is distinguished from *P. obesulus* by the much more prominent and acute median lobe of the front. I may add that the specimens I have examined, both from the 'Alert' collection and from the Gulf of Suez (*R. MacAndrew*), have a prominent lobe at the inner and distal angle of the merus-joint of the chelipedes, which is not represented in Dana's figure of this species, and which is scarcely or not at all developed in *P. obesulus*. This character will perhaps be found sufficient to distinguish these specimens from *P. biunguiculatus*, Dana, at least as a marked variety.

15. *Galathea spinosirostris*, Dana?

To this species are rather doubtfully referred female specimens collected at Marie-Louise Island, 17 fms. (No. 186); Ile des Neufs, 15 fms. (No. 187); and Providence Island, 19 fms. (No. 187).

These specimens differ from Stimpson's description of *Galathea labidolepta*\*, based on specimens from the Cape of Good Hope, and from a dried example (probably male) in the Museum collection from Simon's Bay (*J. Macgillivray*, H.M.S. 'Rattlesnake'), only in having the strigæ of the carapace (in the adult) very scantily pubescent, the lateral margins of the carapace armed with nine spinules, and the palms of the chelipedes very slender and scarcely scabrous above, but they are spinulose and setose nearly as in Stimpson's description.

Dana's *G. spinosirostris* is but briefly described, and he does not state how many spinules there are on the lateral margins of the carapace in his types, which were from the Sandwich Islands; the description and figures, however, agree fairly well with our specimens. Dr. Richters refers to this species specimens from the Fouquets.

Two small specimens from Darros Island, 22 fms. (No. 233), much more nearly resemble *G. labidolepta* in the more distinctly strigose and pubescent carapace, whose lateral margins are armed with seven or eight spinules (including the infra-antennal spine). In one of these specimens (a male) the palm of the chelipede is more broadly dilated and the fingers relatively shorter than in the specimen from Simon's Bay referred to above.

16. *Munida edwardsii*. (PLATE LI. fig. A.)

The carapace, as usual in the genus, is transversely strigose; the strigæ ciliated; the lateral spines of the rostrum are rather more than half as long as the median spine; outside of the lateral rostral spines there is a small supraocular spine. The front of the gastric region is armed with a transverse series of about eight spinules; on the sides of the carapace, near to the lateral margins, are two spinules, situated one in front of and one behind the cervical suture; the antero-lateral angles of the carapace are bispinulose, and posterior to these, on the lateral margins, are six spines; the postabdomen is without spinules on the dorsal surface, and the lateral margins of the second to sixth segments are rounded. The cornæ of the eyes are considerably dilated; the terminal peduncular joints of the antennules are armed with four spinules, of which one is very long; the peduncular joints of the antennæ (except the last) are each armed with a spinule (the flagella, both of antennules and antennæ, are wanting in the single specimen examined). The chelipedes (in the male) are rather robust, the merus enlarging distally and armed with superficial and marginal spinules at and toward its distal extremity; carpus spinulose above and on the margins; hand some-

\* *Vide* Proc. Acad. Nat. Sci. Philadelphia, p. 251 (1858).



what dilated, and vertically flattened and compressed; the margins, both of palm and fingers, spinulose, but the surface smooth, without spines. But one ambulatory leg remains attached to the body (on the left side); this is rather small and slender, and has the upper margin of the merus, carpus, and penultimate joints spinulose, the dactyl obscurely denticulated below. Colour light brownish pink or yellowish. Length of the body to end of rostrum nearly 6 lines (12 millim.); of a chelipede about  $6\frac{1}{2}$  lines (14 millim.).

The single specimen (which is, I think, a male) was obtained at Ile des Neufs, 15 fms. (No. 187), with *Galathea spinosirostris*.

The spinulation of the carapace, with the form of the chelipedes, distinguishes it from all the species with which I am acquainted.

The presence of supraocular spines will at once separate it from the Oriental forms *Munida gregaria* (Fabr.)=*M. subrugosa*, Dana, *M. japonica*, Stimpson, and also from *M. spinulifera*, described at p. 279 of this Report.

## MACRURA.

### 1. *Alpheus obesomanus*, Dana.

A specimen was obtained at the Seychelles, 4-12 fms. (No. 194). It has been already noticed at p. 287 of this Report.

### 2. *Alpheus edwardsii* (Audouin).

A specimen, in which the smaller chelipede is wanting, was obtained at the Seychelles, 4-12 fms. (No. 194). I have already referred to the distribution, sexual characteristics, and variability of this species at p. 284 of this Report.

### 3. *Alpheus lævis*, Randall.

Of this widely distributed species specimens were collected at the Seychelles, 4-12 fms. (No. 194); African or Eagle Island, 10 fms. (No. 184); and Etoile Island, 13 fms. (No. 191): most of these are ova-bearing females.

Specimens are in the British-Museum collection from the Red Sea, Gulf of Suez (*R. MacAndrew*); Gulf of Akaba (*Major Burton*); El Tor (*Major MacDonald*); Dædalus Shoal (*Lt.-Col. Playfair*); also Red-Sea specimens received from the Godeffroy Museum, and wrongly designated *A. tricuspидatus*, Heller; also from Rodriguez (*H. H. Slater*); Ceylon, Galle (*Dr. W. Ondaatje*); Samoa Islands (*Rev. S. J. Whitmee*); and Fiji Islands, Matuka (*H.M.S. 'Herald'*).

There is in the collection a specimen of *Alpheus* from African or Eagle Island, 10 fms. (No. 184), which for the present I refrain from designating by a distinct specific name. It is evidently very nearly allied to *Alpheus collumianus*, Stimpson\*, from the Bonin

\* Proc. Acad. Nat. Sci. Philad. p. 31 (1860).

Islands, and may be identical with it; but differs from his brief description in some minor points, *e.g.* in the absence of the small spinules at the base of the third and fourth legs.

#### 4. *Alpheus minor*, var. *neptunus*, Dana.

Specimens of this species, whose synonyms and distribution have been referred to at p. 288 of this Report, are in the collection from Darros Island, 22 fms. (No. 185), Ile des Neufs, 15 fms. (No. 187), and Glorioso Islands, 7-10 fms. (No. 219).

#### 5. *Pontonia?* *brevirostris*. (PLATE LI. fig. B.)

The body of this species is shaped nearly as in *P. tridacna* (Peters). The rostrum is very small, not at all laterally compressed; viewed dorsally it is triangular and acute, and scarcely prolonged beyond the bases of the eye-peduncles; the anterior margin of the carapace, near to the antero-lateral angles, is armed with a spine; the lateral margins of the second to fifth postabdominal segments are obtusely rounded, those of the sixth segment posteriorly spiniform and acute; the terminal segment is subtriangulate, with the apex subacute (broader and more rounded in the adult female), and bears on its dorsal surface two strong spines near to each lateral margin. The eye-peduncles are subcylindrical, thick, and project laterally. The first exposed joint of the antennular peduncles is flattened and considerably dilated, and has two spines on its outer margin, of which one is at the extero-distal angle of the joint; the next joint is very short, the terminal joint longer; the outermost of the two short flagella is thickened and shortly bipartite. The antennæ are inserted beneath and outside of the antennules, and their short peduncles in a dorsal view are hidden by the antennal scales, which are large, ovate, and distally ciliated, and prolonged beyond the distal end of the peduncles and the antennules. The slender mandibles are without a palpus; the outer maxillipedes are subpediform, with the antepenultimate joints but slightly thicker and a little longer than the two terminal joints taken together. The anterior legs are slender and unarmed, with merus and carpus of about equal length, and each about as long as the palm and fingers taken together; the palm is not dilated, and the fingers are not denticulated on their inner margins. The second legs (in the specimens examined) are but moderately thickened and of nearly equal size; ischium, merus, and carpus of about equal length, but the carpus somewhat thicker; palm longer than the carpus, smooth and rounded, scarcely compressed; fingers about as long as palm, meeting along their inner margins, which are not denticulated. Ambulatory legs slender, with the penultimate joints about twice as long as the preceding; dactyli styliform and acute. The rami of the uropoda are ovate and ciliated, and the outermost has a small spinule near to the distal end of its outer margin. Colour (in spirit) reddish yellow. The exact dimensions of the larger specimen, owing to its imperfect condition,

cannot be given; but it is somewhat smaller than adult *P. tridacna*. The chelipede of the second pair measures about 7 lines (15 millim.).

Two specimens, of which one is an adult female with ova, were obtained at the Seychelles (12 fms.), where they inhabited "clamp shells" (bivalves?).

They are distinguished from all the species with which I am acquainted, except *P. unidens*, Kingsley, by the extremely short rostrum, which is not laterally compressed, and from all by the form of the chelipedes of the second pair. From the species of *Coralliocaris*, Stm. (*Ædipus*, Dana), they are distinguished, among other characters, by the form of the dactyli of the ambulatory legs.

In *P. unidens*, Kingsley, from Florida\*, not only is the form of the chelipedes different, but also the antennal scale is shorter, reaching only to the end of the last joint of the peduncle.

#### 6. *Coralliocaris graminea* (Dana).

Four specimens, of which two are adult females with ova, were obtained at the Seychelles, 4-12 fms. (No. 194). Specimens from the same locality were presented to the Museum by Dr. E. P. Wright.

These specimens agree with the description of Dana in all particulars except that no trace remains of the characteristic markings of the carapace, the coloration in spirit being yellowish; and the margins of the rostrum above the eyes are slightly convexly arcuated; the tooth on the inferior margin of the rostrum, or one of the teeth of the superior margin, is occasionally absent.

Dana's specimens were from the Fijis. Dr. Stimpson records this species from Hong Kong.

*Coralliocaris nudirostris* (Heller), from the Red Sea, may possibly be identical with this species; but in the figure the dactyli of the chelipedes are of very different form (*cf.* Heller in Sitz. Wien. Akad. xlv. (1) p. 279, pl. iii. fig. 25, 1862).

#### 7. *Penæus canaliculatus*, Olivier.

A small specimen, I think a male, was obtained at Poivre Island, on the beach (No. 198).

Since reference was made to this species in my memoir on the genus, in 1878†, specimens have been added to the collection from Richmond River, N. S. Wales (*A. P. Goodwin*); there is also in the Museum collection a small example, in bad condition, from Swan River (*Dring*).

*Penæus brevirostris*, Kingsley‡, is very nearly allied to, and may be identical with, this species, but it has two teeth on the inferior

\* Proc. Acad. Nat. Sci. Philad. p. 422, pl. xiv. fig. 9 (1879).

† Proc. Zool. Soc. p. 298 (1878).

‡ Proc. Acad. Nat. Sci. Philad. p. 98 (1878).

margin of the rostrum, whereas in *P. canaliculatus* there is commonly but one; and it is not stated in the author's description whether the terminal segment of *P. brevisrostris* bears lateral marginal spinules. As the type was from Realejo, on the west coast of Nicaragua, the range of *P. canaliculatus* (if it be identical with that species) seems to extend eastward to the American coast.

I may add here, that *P. occidentalis*, Streets\*, from the Isthmus of Panama, to which reference is not made in my paper above referred to, seems to be identical with *P. stylirostris*, Stimpson, which I supposed (in 1878) to be synonymous with *P. indicus*; but according to Mr. Spence Bate, who has since examined the types in the Paris collection, not only *P. indicus* but also *P. semisulcatus*, De Haan, *P. carinatus*, Dana, *P. tahitensis*, Heller, and *P. esculentus*, Haswell, are varieties of *P. monodon*, Fabricius (*vide* Ann. & Mag. Nat. Hist. ser. 5, vol. viii. p. 177, pl. xii. fig. 5, and p. 178, 1881). The designation *P. stylirostris* has precedence by a few weeks only over *P. occidentalis*.

### 8. *Penæus richtersii*. (PLATE LIII. fig. A.)

Carapace with the cervical region scantily clothed with a short pubescence. Rostrum very short, reaching about halfway to the end of the eye-peduncles, ascending slightly, and laterally compressed; armed above with six teeth, of which the two posterior are situated on the dorsal surface of the carapace, and behind these, but at no great distance, on the gastric region is another tooth; the lower margin, under a low magnifying-power, appears entire, but is very minutely denticulated; the distal end is subacute, but not prolonged into a spine. On the carapace is an antennal and hepatic spine, and also a small supraocular spine or tooth; its dorsal surface, behind the gastric spine, is not distinctly carinated. The post-abdomen is smooth and nearly glabrous; its fifth and sixth segments are slightly dorsally carinated, but the carina does not terminate in a spine; there is a very small spiniform tooth at the postero-lateral angles of the sixth segment; the terminal segment is narrow and acuminate at its distal extremity, dorsally canalculated in its proximal half, with three pairs of lateral mobile spines, of which the posterior pair are much longer and jointed in the middle. The eye-peduncles are shaped nearly as in *P. velutinus*, and scarcely reach to the distal end of the antepenultimate joint of the antennular peduncles, the longer of whose flagella is shorter than the carapace. The peduncle of the antennæ is concealed, in a dorsal view, by the much longer antennal scale, which reaches nearly to the distal end of the peduncle of the antennules; the antennal flagellum is slender and nearly naked (broken in the specimen described); the outer maxillipedes are short, scarcely reaching to the end of the eyes. The legs present nothing remarkable; there is a small spine on the second and, I think, the third joint

\* Proc. Acad. Nat. Sci. Philad. p. 242 (1871).

of the legs of the first pair, but none on the second and third pairs of legs; the fifth legs are scarcely longer than the fourth; and the dactyli, in both pairs, about equal the penultimate joint in length. The rami of the uropoda are rather narrow ovate, and longer than the terminal segment, slightly pubescent above and with long ciliated margins. Length of the larger specimen (a male) about 1 inch  $2\frac{1}{2}$  lines (31 millim.).

Cerf Island, 10 fms. (No. 232); two males.

The description is taken from the largest specimen.

This species is distinguished from most of its congeners by the form and extreme brevity of the rostrum, the armature of the terminal segment, &c.

From *P. ? podophthalmus*, Stimpson, from Hong Kong\*, it is at once distinguished by the length of the eye-peduncles and antennules.

It is apparently allied to *P. palmensis*, Haswell, from Palm Island, which has, however, a longer rostrum with more numerous teeth, the second to sixth segments of the postabdomen carinated, &c.

There are in the collection three small specimens of a species of this genus, also obtained at Cerf Island with *P. richtersi*, which I refrain at present from designating by a distinct specific name, although I cannot refer them to any described species. The body is everywhere covered with a short hispid pubescence. The rostrum is short and slender and acute, scarcely reaches beyond the eyes, and is armed above with five teeth, whereof the first is separated by a wider interval and is placed on the gastric region, the second tooth on the postfrontal region, just behind the anterior margin of the carapace; the second to sixth segments of the body are carinated (as in *P. palmensis*); on the sixth segment the carina terminates in a small spinule. From *P. richtersi* they seem to be distinguished by the much slenderer, more acute, and longer rostrum, and the longer carina of the postabdomen; and from *P. palmensis*, Haswell, with which, however, they may prove to be identical, by the fewer rostral teeth, &c.

## STOMATOPODA.

### 1. *Gonodactylus chiragra*, Fabricius.

An adult female is in the collection, from Mozambique, beach (No. 224), and small specimens from the Seychelles, 4-12 fms. (No. 194); Darros Island, 22 fms. (No. 185); and Etoile Island, 13 fms. (No. 191).

\* This species cannot be included in *Penæus* as recently defined by Mr. Spence Bate (Ann. & Mag. N. H. t. c. p. 173, 1881).

## 2. *Gonodactylus graphurus*, *Miers*.

A series of specimens was obtained at the Seychelles (No. 194) with the preceding species.

Both *G. chiragra* and *G. graphurus* are referred to at p. 298 of this Report.

## 3. *Gonodactylus elegans*. (PLATE LII. fig. B.)

The body is smooth, not longitudinally costated; carapace nearly oblong, without spines at the antero-lateral angles. Rostral plate smooth and somewhat transverse, with its anterior margin regularly arcuated, and the posterior margin straight, its distal extremity not acute. Antepenultimate and penultimate thoracic segments rounded on the sides, and the former but little laterally produced; the last thoracic segment is overlapped on the sides by the produced and rounded antero-lateral lobes of the first postabdominal segment. The postero-lateral angles of the fourth to sixth postabdominal segments are acute; the third to fifth segments have each on the dorsal surface five small pits; the sixth segment has its posterior margin armed with four small spines (including the produced and spiniform postero-lateral angles); the terminal segment is about as long as broad, dorsally nearly smooth, with an acute longitudinal median carina, which terminates posteriorly, behind the distal margin, in a small spinule; the posterior margin is armed with six strong spines, of which the submedian pair are tipped with a small mobile spinule, and have between them about twenty-six minute spinules; between the submedian and the next large spines are two smaller teeth, and between the second and third larger spines one smaller tooth. The eye-peduncles are robust, and about reach to the distal end of the penultimate joint of the antennules, one of whose three flagella is much shorter than the others. The antennæ are about as long as the antennules; the antepenultimate peduncular joint is armed with a short spinule; the basal scale is very much narrowed at base, and rounded and ciliated at its distal extremity. The raptorial limbs have the merus-joints thickened through about two thirds of their length, and thence narrowing distally; carpus and penultimate joint slender and unarmed; dactylus slender and but little ventricose at base, armed on the proximal half of its inner margin with two teeth, and with the distal extremity slender and acute. The appendage to the antepenultimate joint of the three posterior thoracic limbs is styloform, slender, and very nearly as long as the penultimate joint. The postabdominal uropoda are about as long as the terminal segment, their basal processes terminate in two strong and nearly equal spines, and there is a small spine above the outer ramus, which latter is a little longer than the inner ramus, biarticulate, the basal joint armed on its outer margin with a series of strong spinules; the inner ramus is ovate, ciliated, and unarmed. Length of the largest specimen about 11 lines (23 millim.).

A specimen was obtained at Providence Island or Ile des Roches, 13-20 fms. (No. 183), and also one at Providence Reef, 24 fms. (No. 215). Both are apparently females.

The form of the rostrum, together with the armature of the terminal segment, distinguish this species from all with which I am acquainted.

Kossmann (*t. c.* zweite Hälfte, p. 100) mentions a species of this genus, *Gonodactylus brevisquamatus*, Paulson, occurring in the Red Sea, with which *G. elegans* may possibly be identical; but as I have never seen Paulson's work, I can say nothing of the true affinities of *G. brevisquamatus*.

There is in the collection a small male from Providence Island, 19 fms. (No. 217), which is allied in many points to the preceding; but the rostrum is transverse, with its distal extremity deflexed, so that in a dorsal view it appears transversely oblong, with a straight anterior margin, which does not project beyond the anterior margin of the lateral divisions of the carapace. The penultimate post-abdominal segment is armed with six teeth, including those of the postero-lateral angles. The terminal segment has a smaller longitudinal carina on each side of the median longitudinal dorsal carina. The terminal joint of the large raptorial limbs (second maxillipedes) is even less distinctly ventricose at base, and its inner margin is armed with about eight teeth. These characters may be peculiar to the male sex; but if the specimen should prove, on further study, to belong to a distinct species, I would propose to designate it *G. brevirostris* (see Plate LII. fig. C).

*Pseudosquilla empusa* (De Haan)\* is perhaps the species most nearly allied to our new *Gonodactylus*; it has the transverse truncated rostrum of the male above described, with the few-spined dactyl of the female; it is distinguished not merely by the non-ventricose dactyl of the raptorial limbs with its longer spines, but also (if the figure be correct) by the distinctly costated sixth post-abdominal segment, the slightly divergent lateral dorsal carinae of the terminal segment, &c.

## AMPHIPODA.

### 1. *Mœra diversimanus*. (PLATE LII. fig. D.)

The body is slender, with the coxæ not so deep as their respective segments; the head is about as long as deep, with a small triangular median rostral lobe, and with its antero-lateral angles rounded; the coxæ of the first segment of the body have their antero-lateral angles acute and produced below the lateral margins of the head; in the succeeding pairs the antero-lateral angles are rounded. The first

\* Fauna Japonica, Crust. p. 224, pl. li. fig. 6 (1849).

to third segments of the postabdomen have their posterior margins dorsally armed with a series of minute spinules; the first segment has a few spinules on the postero-lateral margin above the postero-lateral angle; in the second segment the spinules are more numerous, and on the third they extend along nearly the whole length of the postero-lateral margins and along part of the infero-lateral margins and (in one specimen) are of very unequal length; the fourth segment is dorsally armed on its posterior margin with about five alternately larger and smaller spinules; there are a few minute spinules on the posterior margin of the fifth segment, and one at the postero-lateral angles of the sixth segment. The telson is double, each of the lobes terminating in a spinule, above which are several stiff setæ. The eyes are large, round, and black. The superior antennæ exceed the inferior in length; the antepenultimate peduncular joint is rather shorter and stouter than the next joint; the last peduncular joint not longer and scarcely stouter than the first joint of the flagellum; accessory flagellum about 5-jointed, flagella imperfect. The antepenultimate joint of the inferior antennæ is about half the length of the next joint; second and third joints subequal; flagellum scarcely longer than the third joint. The first pair of legs (gnathopods) are comparatively slender and feeble; wrist and palm of about equal length and thickness, and palm with a very small and obscure notch in the middle of its distal margin; dactyl about half as long as palm. Second legs with the hands unequal; in the smaller (right) leg the wrist is dilated distally where it is applied to the base of the palm, which is oblong-oval in form, with its very oblique distal margin obscurely crenulated and defined by an obscure lobe or tooth; dactyl not half as long as palm. The larger (left) leg has the wrist posteriorly deeply excavated and distally enlarged to the width of the palm, which is large, massive, nearly oblong in shape, with its distal margin deeply excavated, the notch enclosing a small tooth and followed by a broad truncated and denticulated lobe and by a spine defining the postero-distal angle; the dactyl is about as long as the distal margin of the palm, and has a blunt subbasal lobe or tooth on its inner margin. The three posterior pairs of legs have the second or basus-joints oblong-oval in shape, and posteriorly produced at the distal extremity into a prominent tooth or lobe, which in the posterior pair is spiniform. The rami of the first three pairs of postabdominal appendages are considerably elongated; the fourth and fifth pairs are biramosc, with the rami subequal, styliform, and (like the bases) armed with stiff setæ; in the last pair the rami are subequal and foliaceous, with the margins serrated. Colour (in spirit) reddish. Length of the body nearly 4 lines (8 millim.).

Seychelles, 4-12 fms.; two specimens.

Both are somewhat mutilated; the description was therefore taken partly from one, partly from the other specimen.

This species, in the form and denticulation of the hand of the larger leg of the second pair, somewhat resembles the Mediterranean



*Mæra truncatipes* (Spinola) described by Mr. Spence Bate\*; but in that species (and also, it would appear, in *M. quadrimanus*, Dana, from the Fijis, and in *M. viridis*, Haswell, from the East-Australian coast) the hands are similar and the segments of the postabdomen smooth. It is nearly allied to *M. ramsayi*, Haswell, referred to in the earlier part of this Report, which, however, differs in the form of the hands of the second pair of legs (which have not the deep notch of *M. diversimanus*, and are armed with three nearly equal teeth), and also in the larger posterior pleopoda, &c.; yet it is possible that a larger series of specimens would be found to offer transitional characters serving to unite the two forms. I may note here that there is in the British-Museum collection a specimen from the Corean Seas (*Capt. H. C. St. John*) which cannot, I think, be distinguished specifically from *M. truncatipes* (Spinola).

\* Catalogue of Amphipoda in British Museum, p. 189, pl. xxxiv. fig. 4 (1862).

Table showing the Distribution of the Species on the East Coast of Africa and Islands adjacent.

N.B.—In this table the asterisks in the first column denote that the species was collected at the Seychelles, unless the locality be otherwise stated. Under the heading "Mascarenes," in the second column, are included the three islands of Mauritius (with the Islet Fouquets), Réunion, and Rodriguez. Under "Madagascar," in the third column, are included the small islands adjacent (as Nossi Faly, Nossi Bé), Under "E. Africa" is included any locality on the coasts of Zanzibar and Mozambique, and also the island of Zanzibar. Under the heading "Red Sea" it seemed desirable (in view of the uncertainty regarding the particular localities of many of the recorded species) to include also localities on the Arabian coast.

Where "varieties" are mentioned, the distribution indicated is that of the variety, and not of the typical form of the species; but doubtless some of the recorded localities of the species will, upon comparison, be found to be applicable to the new varieties, now for the first time indicated.

	Seychelles, &c.	Mascarenes.	Madagascar, &c.	Red Sea.	E. Africa.	Natal.	Cape Colony.
DECAPODA.							
<i>Achæus levioculis</i> , n. sp. ....	*						
<i>Camposcia retusa</i> , Latr. ....	.....	*	.....	.....	*		
<i>Huena pacifica</i> , Miers .....	*						
<i>Menæthus monoceros</i> , Latr. ....	*	*	.....	*	*		
<i>Stilbognathus martensii</i> , sp. n. ...	Amirante and Providence groups.						
<i>Paramithrax</i> (Chlorinoides) longispinus, De Haan, var. bituberculatus, n. ....	Amirante and Providence groups.						
<i>Hvastenus</i> (Chorilia) oryx, A. M.-Edw. ....	Providence group.						
— (—) ovatus, Dana .....	Amirante group.						
— (—) —, var. tennirotis, n. ....	Amirante group.						

Naxia (Naxioides) petersii, <i>Hilg.</i>	.....	.....	.....	*
Eurynome stimpsonii, sp. n. ....	.....	.....	.....	*
Micippa thalia ( <i>Hbst.</i> ), var. haani, <i>Stimpson</i>	.....	.....	* ?	*
Paramicippa asperimanus, sp. n.	.....	.....	.....	*
Entomonyx spinosus, g. & sp. n. ....	.....	.....	.....	*
Lambrus (Parthenopoides) calapoides, <i>Ad. &amp; Hite</i>	.....	.....	.....	*
Euxanthus exsculptus, var. rugosus, n. ....	.....	*	.....	*
Lophactæa semigranosa ( <i>Heller</i> )	.....	.....	.....	*
Lophozozymus dodone ( <i>Hbst.</i> )	.....	.....	.....	*
Liomera punctata ( <i>M.-Edw.</i> )	.....	*	.....	*
Actæa rufopunctata ( <i>M.-Edw.</i> )	.....	*	.....	*
Ateygatopsis granulatus, <i>A. M.-Edw.</i>	.....	.....	.....	*
Xanthodes lamarekii ( <i>M.-Edw.</i> )	.....	*	.....	*
Carpilodes rugatus ( <i>M.-Edw.</i> )	.....	*	.....	*
Actæodes tomentosus ( <i>M.-Edw.</i> )	.....	*	.....	*
Leptodius exaratus ( <i>M.-Edw.</i> )	.....	*	.....	*
——, var. gracilis ( <i>Dana</i> )	.....	*	.....	*
Phymodius rugipes ( <i>Heller</i> )	.....	.....	.....	*
Chlorodius niger ( <i>Forskål</i> )	.....	.....	.....	*
—— miliaris, <i>A. M.-Edw.</i>	.....	*	.....	*

Table (continued).

	Seychelles, &c.	Mascarenes.	Madagascar, &c.	Red Sea.	E. Africa.	Natal.	Cape Colony.
<i>Chlorodopsis melanodactylus</i> , A. <i>M.-Edw.</i> .....	* Amirante group.	*	.....	.....	*	*	*
— <i>areolatus</i> ( <i>M.-Edw.</i> ) .....	Amirante group.	.....	.....	*	*		
<i>Etisodes electra</i> ( <i>Herbst</i> ) .....	* .....	*	.....	*			
<i>Cymo andreossi</i> ( <i>Audouin</i> ) .....	* .....	*	.....	*			
<i>Actumnus setifer</i> ( <i>De Haan</i> ) .....	* Amirante and Providence groups.	*	.....	.....	*		
<i>Eurüppellia annulipes</i> ( <i>M.-Edw.</i> ) .....	Amirante group.	.....	.....	*	*	*	
<i>Ozius</i> ( <i>Epixanthus</i> ) <i>frontalis</i> , <i>M.-</i> <i>Edw.</i> .....	*	.....	*	*	*		
<i>Eriphia lævimanus</i> , <i>M.-Edw.</i> .....	* Amirante and Glorioso Islands.	*	*	.....	*		
— —, var. <i>smithii</i> , <i>MacLeay</i> .....	Glorioso Islands	.....	*	.....	*	*	
— <i>scabricula</i> , <i>Dana</i> .....	Amirante group.	*	*	.....	*		
<i>Trapezia cynodoce</i> ( <i>Herbst</i> ) .....	* Amirante and Glorioso Islands.	.....	.....	*	*?		
— <i>ferruginea</i> , <i>Latr.</i> .....	*	*	.....	*	*	.....	*
— <i>rufopunctata</i> ( <i>Herbst</i> ) .....	* Amirante and Glorioso Islands.	*	.....	*	*	.....	*
<i>Tetralia cavimanus</i> ( <i>Heller</i> ) .....	*	*	*	*	*	.....	*
<i>Xiphonectes vigilans</i> ( <i>Dana</i> ), var. <i>obtusidentatus</i> , n. ....	Islands. * .....	*	*	*	*	.....	*?

<i>Scylla serrata</i> (Forskål) .....	.....	.....	Mayotte Isd.	*	*	*
<i>Achelous granulatus</i> (M.-Edw.) .....	*	*	*	*	*	*
<i>Goniosoma natator</i> (Herbst) .....	.....	.....	Mayotte &c.	.....	.....	.....
<i>Thalanita sima</i> , M.-Edw. ....	.....	.....	.....	*	*	*
— <i>quadrilobata</i> , sp. n. ....	*	*	.....	*	*	*
— <i>integra</i> , Dana .....	*	*	.....	*	*	*
— <i>crenata</i> , Rüppell .....	.....	.....	.....	*	*	*
— <i>picta</i> , Stimpson .....	.....	.....	.....	**?	**?	**?
<i>Lissocarcinus orbicularis</i> , Dana .....	*	*	.....	*	*	*
<i>Gelasinus annulipes</i> , M.-Edw. ....	*	*	*	*	*	*
— <i>dussumieri</i> , M.-Edw. ....	.....	.....	.....	*	*	*
<i>Ocyroda ceratophthalma</i> (Pallas) {	.....	.....	.....	*	*	*
— <i>cordimanus</i> , Desm. ....	.....	.....	.....	*	*	*
<i>Macrophthalmus parvimanus</i> , Latr.	.....	.....	.....	*	*	*
<i>Euplax</i> ( <i>Chaenostoma</i> ) <i>boscii</i> (Aud.)	.....	.....	.....	*	*	*
<i>Dotilla fenestrata</i> , Hilgend. ....	.....	.....	.....	*	*	*
<i>Carcinoplax integra</i> , sp. n. ....	*	*	.....	*	*	*
<i>Grapsus maculatus</i> (Catesby) .....	.....	.....	.....	*	*	*
— <i>strigosus</i> (Herbst) .....	.....	.....	.....	*	*	*
<i>Geograpsus grayi</i> (M.-Edw.) .....	.....	.....	.....	*	*	*
<i>Metopograpsus messor</i> (Forskål) ...	.....	.....	.....	*	*	*
<i>Liolophus planissimus</i> (Herbst) ...	.....	.....	.....	*	*	*
<i>Xanthasia murigera</i> , White .....	.....	.....	.....	*	*	*
<i>Philyra rectangularis</i> , sp. n. ....	.....	.....	.....	*	*	*

Table (continued).

	Seychelles, &c.	Mascarenes.	Madagascar, &c.	Red Sea.	E. Africa.	Natal.	Cape Colony.
<i>Pseudophilyra polita</i> , sp. n. ....							
<i>Nursilia dentata</i> , <i>Bell</i> .....	Amirante group.						
<i>Arcania undecimspinoso</i> , <i>De Haan</i> .....	*						
<i>Ebalia granulata</i> ( <i>Rüppell</i> ) .....	Providence group.		.....	*			
<i>Calappa hepatica</i> ( <i>Linna.</i> ) .....	*	*	*	*	*	*	
— <i>gallus</i> ( <i>Hbst.</i> ), var. <i>bicornis</i> , n. ....	Providence group.						
<i>Cymopolia whitei</i> , sp. n. ....	*						
<i>Dromidia spongiosa</i> , <i>Sém.</i> , var. <i>stimpsonii</i> , n. ....	.....	.....	.....	.....	*		
<i>Dromia vulgaris</i> , <i>M.-Edw.</i> .....	Providence group.						
<i>Homalodromia coppingeri</i> , g. & sp. n. ....	Providence group.						
<i>Birgus latro</i> ( <i>Linna.</i> ) .....	group.						
<i>Cœnobita perlata</i> , <i>M.-Edw.</i> .....	Glorioso group.	*	.....	.....	Comoro Isds.		
<i>Pagurus punctulatus</i> , <i>M.-Edw.</i> ...	Amirante group.	*	*	*	*		
— <i>guttatus</i> , <i>Olivier?</i> .....	* Amirante group.	*	*	*	*		
<i>Calceinus tibicen</i> ( <i>Herbst</i> ) .....	*	*	*	.....	*	*	
<i>Petrolisthes lamarekii</i> ( <i>Leach</i> ) ...	Amirante group.						
— — —, var. <i>asiaticus</i> ( <i>Leach</i> ) {	Amirante group.						
— <i>annulipes</i> ( <i>White</i> , ined.) .....	Amirante group.	*	.....	.....			
— <i>maculatus</i> ( <i>M.-Edw.</i> ) .....	*	.....	.....	.....			*

— villosus ( <i>Richters</i> )? .....	*	.....	*	.....	Amirante group.
Polyonyx biunguiculatus ( <i>Dana</i> )	.....	.....	.....	.....	* Amirante group.
Galathea spinirostris, <i>Dana</i> ? ...	*	.....	*	.....	Amirante and Providence groups.
Munida edwardsii, sp. n. ....	*	.....	*	.....	Amirante group.
Alpheus obesomanus, <i>Dana</i> .....	*	.....	*	.....	*
— edwardsii, <i>Adonin</i> .....	*	.....	*	.....	*
— lævis, <i>Randall</i> .....	*	.....	*	.....	*
— collumianus, <i>Stm.</i> ? .....	.....	.....	.....	.....	Amirante group.
— minor, <i>Sag</i> , var. neptunus, <i>Dana</i> .....	.....	.....	.....	.....	Amirante group.
Pontonia? brevis, sp. n. ....	.....	.....	.....	.....	Amirante group.
Coralliocaris graminea ( <i>Dana</i> ) .....	.....	.....	.....	.....	Amirante group.
Penæus canaliculatus, <i>Oliv.</i> .....	*	.....	*	.....	Amirante group.
— richtersii, sp. n. ....	*	.....	*	.....	Providence group.
STOMATOPODA.					
Gonodactylus chiragra, <i>Fabr.</i> .....	*	.....	*	.....	* Amirante group.
— graphurus, <i>Miers</i> .....	*	.....	*	.....	* Providence group.
— elegans, sp. n. ....	.....	.....	.....	.....	Providence group.
AMPHIPODA.					
Mœra diversimanus, sp. n. ....	*	.....	*	.....	*

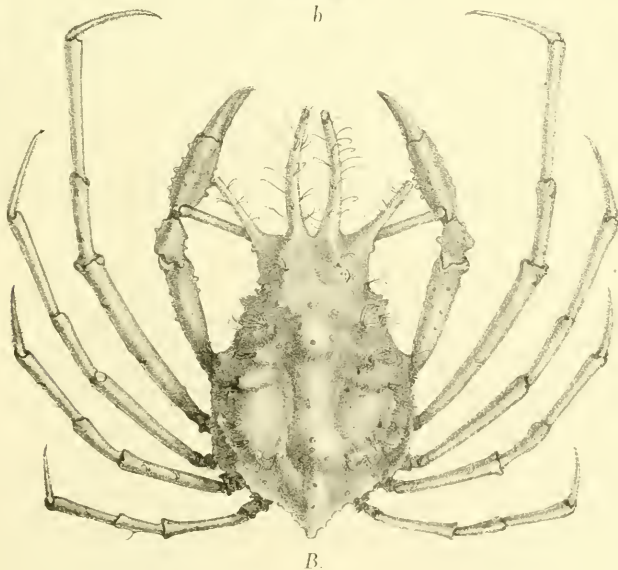
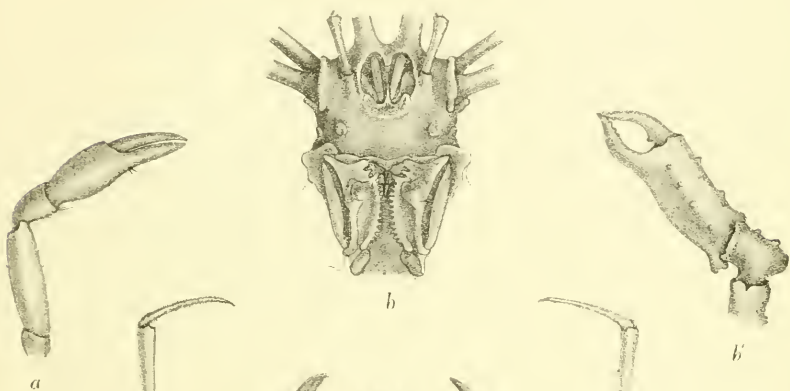
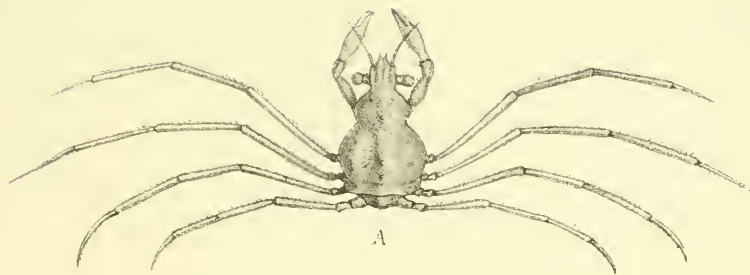


Fig A *Achæus leucoculus*.

Fig B. *Stilbognathus martensii*.





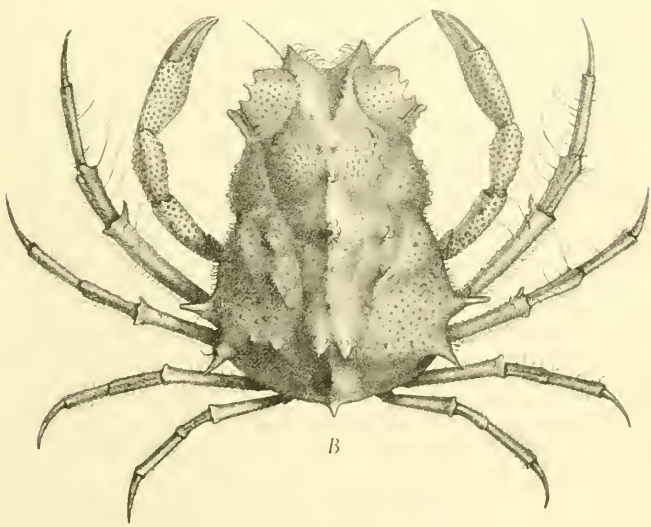
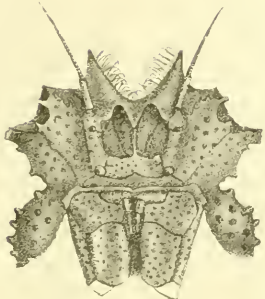
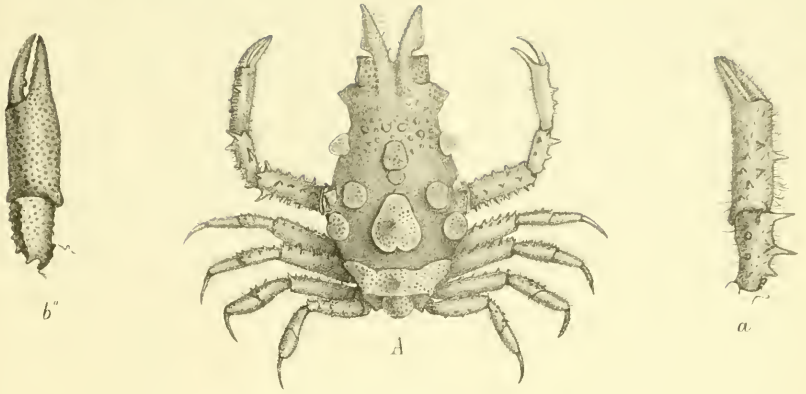
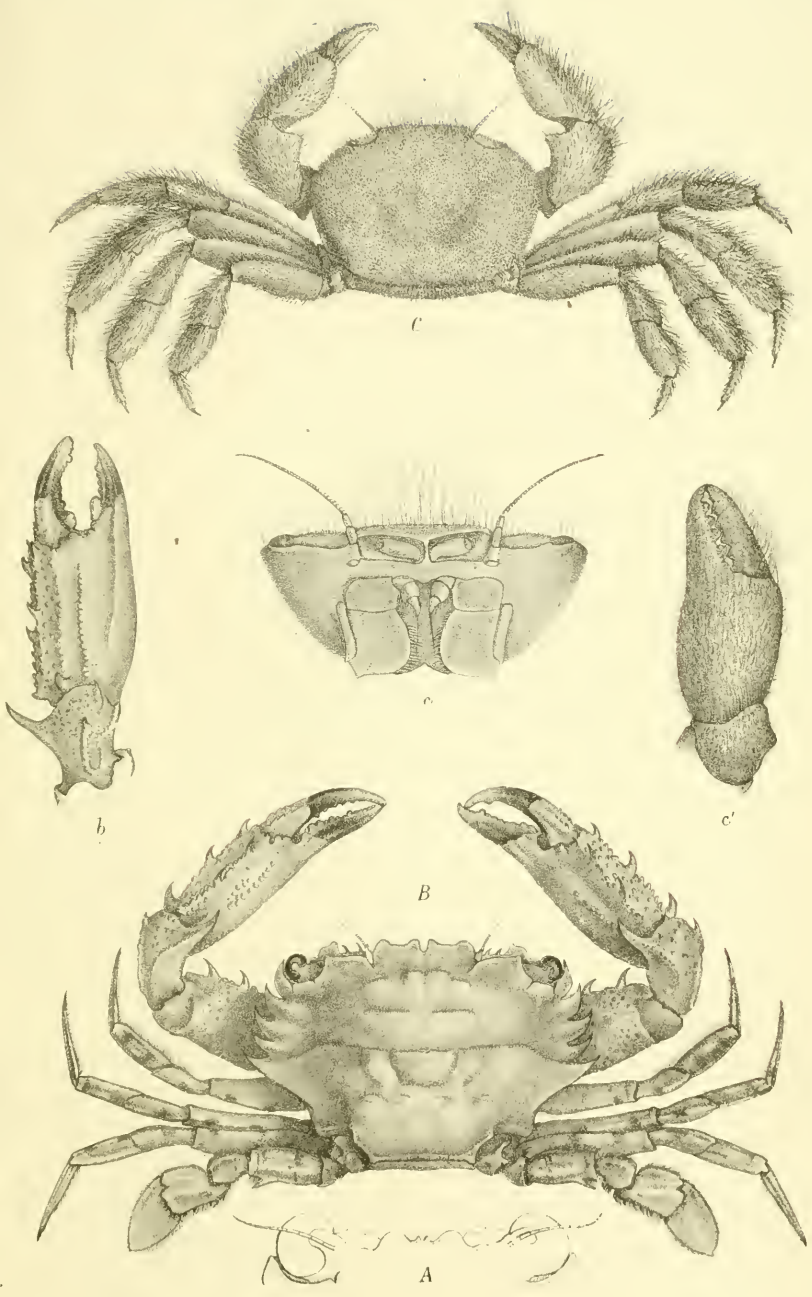


Fig A. *Eurynome stimpsonii*. Fig. B *Entomonyx spinosus*.





Robt Morgan del et lit.

Winters Bros. imp.

Fig. A. *Xiphonectes vigilans*, var. *obtusidentatus*.  
 Fig. B. *Thalamita quadrilobata*. Fig. C. *Carcinoplax integra*.



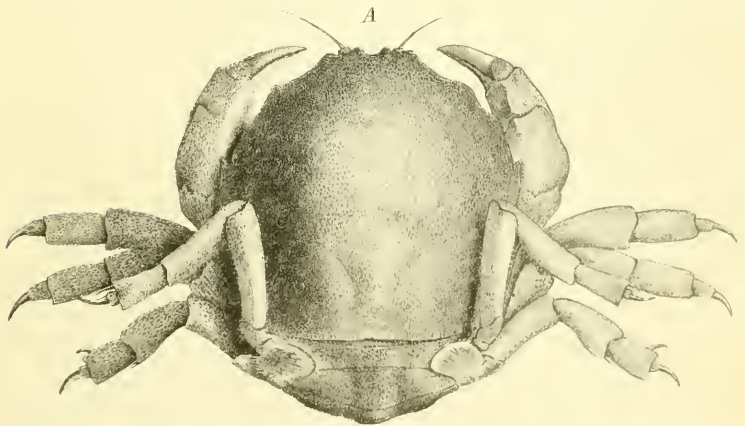
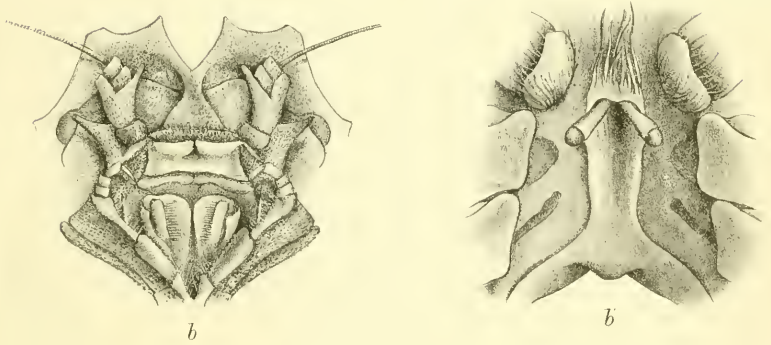
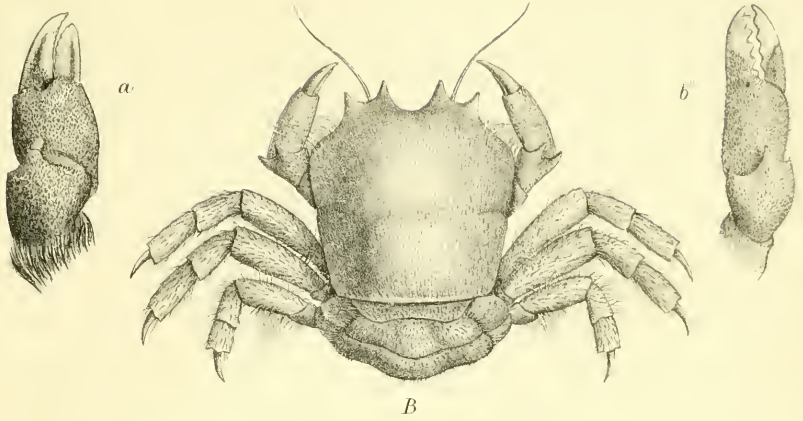


Robt Morgan del et lith

Mintern Bros. imp

Fig. A *Philyra rectangularis*. Fig. B *Pseudophilyra polita*.  
Fig. C. *Cynopolia whitei*





Knight & Morgan del. et lith.

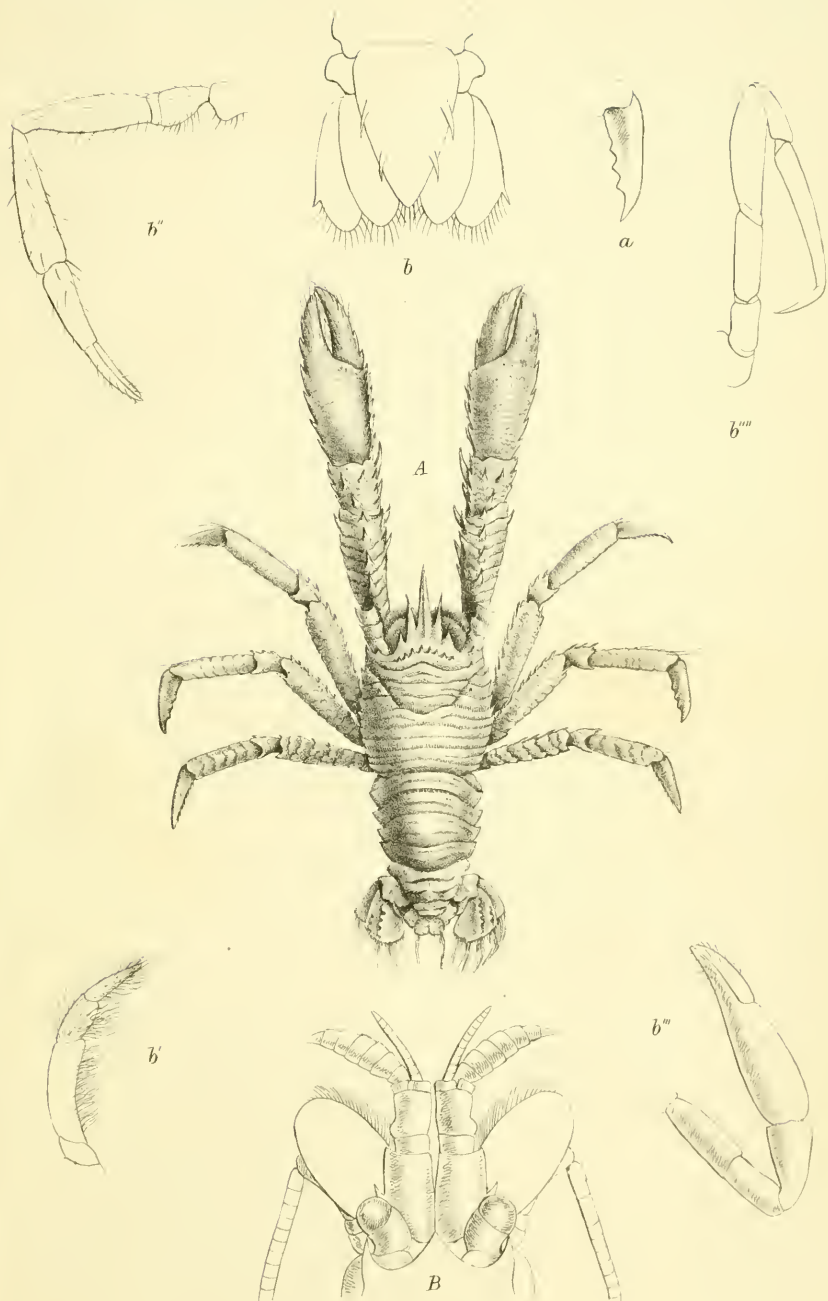
Mintern Bros. imp.

Fig. A. *Dromedia spongiosa*, var. *stimpsonii*.

Fig. B. *Homalodromia coppingeri*.





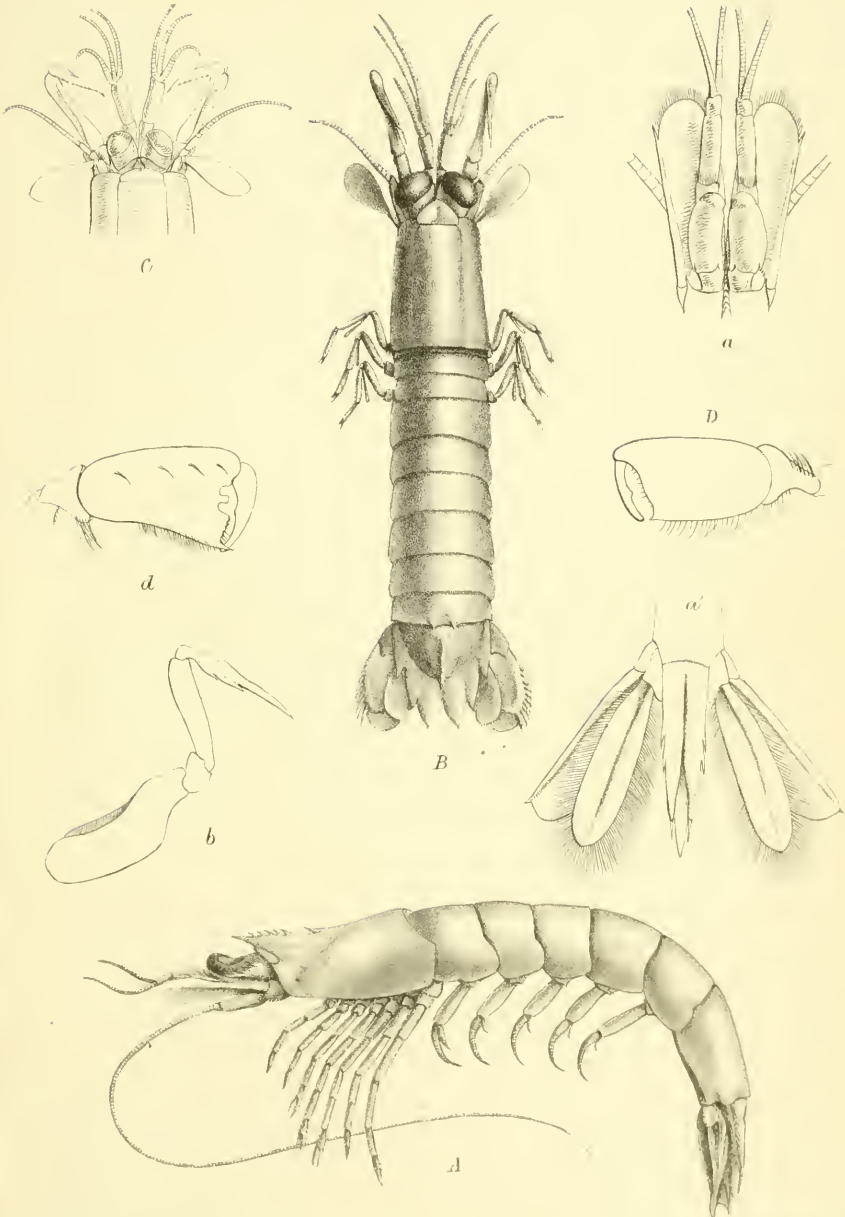


Knight & Morgan, del et lith.

Mintern Bros imp

Fig. A. *Manida edwardsii*. Fig. B. *Pontonia brevisrostris*.





Krught & Morgan del et lith

Mintern lith. imp.

Fig. A. *Penaeus richtersii*.

Figs. B. C. *Cenodactylus elegans*. ♀, ♂?

Fig. D. *Mæra diversimanus*.