5. On a Collection of Crustacea made by the Rev. G. Brown, C.M.Z.S., on Duke-of-York Island.

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The Crustacea collected by Mr. Brown belong, with one exception (*Lysiosquilla maculata*), to the Decapoda, and amount in all to forty-four specimens, representing sixteen species. Although none of the species collected are new to science, several are interesting and little-known forms. I may particularly mention the *Grapsodes notatus* of Heller, originally described from specimens collected by the Novara Expedition at the Nicobars, and peculiar on account of the form of the carapace and structure of the orbital region; and the *Sesarma rotundata* of Hess, hitherto recorded only from Sydney, New South Wales.

I have added a description of a remarkable species of *Sesarma* (*S. tæniolata*) in the British-Museum collection. The majority of the species collected by Mr. Brown are well-known forms, and generally distributed throughout the Indo-Pacific region.

Atergatis floridus.

Cancer floridus, Linn. Syst. Nat. (ed. xii.) p. 1041 (1766).

Cancer ocyroë, Herbst, Naturg. Krabben u. Krebse, iii. (part 2) p. 20, pl. liv. fig. 2 (1801); M.-Edw. Hist. Nat. Crust. i. p. 375 (1834).

Atergatis floridus, De Haan, Faun. Japon. Crust. (Dec. ii.) p. 46 (1835); A. M.-Edw. Nouv. Archiv. Mus. Hist. Nat. i. p. 243 (1865).

One example, a female, of this very common and widely distributed Indo-Pacific species is in the collection.

Carpilius convexus.

Cancer convexus, Forskål, Descript. Animalium &c., Insecta, p. 88 (1775).

Carpilius convexus, M.-Edw. Hist. Nat. Crust. i. p. 382, pl. xvi. figs. 9 & 10 (1834); A. M.-Edw. Nouv. Archiv. Mus. Hist. Nat. i. p. 215 (1865).

Two specimens, both females, are in the collection. This is also a very common species, and generally distributed throughout the Indo-Pacific region. In *C. convexus* the abdomen of the male is 6-, of the female 7-jointed; but in the males a small marginal fissure is usually to be observed on each side of the abdomen, marking the line of coalescence of the third and fourth segments. In the females the right chela is usually very large and massive.

ETISUS DENTATUS.

Cancer dentatus, Herbst, Naturg. Krabben u. Krebse, i. p. 186, pl. xi. fig. 66 (1790).

Etisus dentatus, M.-Edw. Hist. Nat. Crust. i. p. 411 (1834).

One specimen, a female with ova, is in the collection. This is another widely distributed species. Specimens are in the British-Museum collection from the Mauritius, Torres Straits, and New Caledonia.

ACTÆODES TOMENTOSUS.

Zozymus tomentosus, M.-Edw. Hist. Nat. Crust. i. p. 385 (1834); Règne Animal de Cuvier, Atlas, pl. xi. *bis*, fig. 2.

Actæodes tomentosus, Dana, U.S. Expl. Exp. xiii. Crust. i. p. 197 (1852).

Actæa tomentosa, A. M.-Edw., Nouv. Archiv. Mus. Hist. Nat. i. p. 262 (1865).

Four specimens of this species, all of them males and three of large size, were collected. Length of largest specimen $\frac{5}{6}$ inch, greatest breadth $1\frac{1}{3}$ inch. Like most of the species collected, this is a very common Indo-Pacific species.

I may here observe that M. A. Milne-Edwards, in his revision of the Cancridæ (Nouv. Arch. Mus. Hist. Nat. i. p. 259, 1865), has united the genera *Actæa* and *Actæodes*, not considering the excavate or non-excavate finger-tips a character of generic importance. Dana, on the other hand (Expl. Exp. Crust. i. p. 147, 1852), has based his subfamilies Xanthinæ and Chlorodinæ upon this very peculiarity of structure, and has shown that the genera may be arranged in each division in two parallel series. I am inclined to think the latter the most natural and convenient arrangement of the genera; but it will probably be necessary, if Dana's system be adopted, to unite the subfamilies Cancrinæ and Xanthinæ, as the genus *Cancer* bears nearly the same relation to *Etisus* in the Chlorodinæ, as *Liomera* to *Carpilodes*, or *Xantho* to *Leptodius*.

LEPTODIUS EXARATUS, var. SANGUINEUS, Milne-Edwards.

? *Chlorodius sanguineus*, Milne-Edwards, Hist. Nat. Crust. i. p. 402 (1834); Dana, U.S. Expl. Exp. xiii. Crust. i. p. 207, pl. xi. fig. 11 (1852).

Chlorodius nodosus, Randall, Journ. Ac. Nat. Sci. Phil. p. 111 (1839); Dana, U.S. Expl. Exp. xiii. Crust. i. p. 210, pl. xi. fig. 14 (1852).

? *Leptodius sanguineus*, A. M.-Edw. Nouv. Archiv. Mus. Hist. Nat. ix. p. 224 (1873).

Five males and one female specimen of a *Leptodius* were collected, which I should have referred, without any doubt, to the *Chlorodius sanguineus* of Milne-Edwards, were it not that M. Alphonse Milne-Edwards in his description says:—"*Jamais il n'y a de tubercules sur les parties saillantes.*" In the specimens before me there is a slight tubercle on the carapace behind each tooth of the antero-

lateral margins. The *Chlorodius nodosus* of Randall, as figured by Dana (*l. c.*), is evidently the same species and variety as the specimens from Duke-of-York Island, and is not, I think, distinct from *C. sanguineus* as figured by the same author. The principal character that differentiates this variety from the typical *exaratus* is the presence of an additional small tooth behind the last tooth of the antero-lateral margins. *C. sanguineus* is considered a distinct species by Dana, and, with some hesitation, by A. Milne-Edwards, but was united with *C. exaratus* by Stimpson in his preliminary "Report on the Crustacea collected by the United-States Expedition to the North Pacific" (Proc. Ac. Nat. Sci. Phil. p. 34, 1858).

OZIUS RUGULOSUS.

Ozius rugulosus, Stimpson, Proc. Ac. Nat. Sci. Phil. p. 34 (1858); Heller, Voy. Novara, Crust. p. 22, pl. iii. fig. 1 (1865); A. M.-Edw. Nouv. Archiv. Mus. Hist. Nat. ix. p. 240, pl. xi. fig. 3 (1873).

Three specimens of this species are in the collection—two females and a young male. Specimens are in the British-Museum collection from the Mauritius, Australian coast, and New Hebrides; and it has been recorded from the Nicobars, Bonin Islands, Tahiti, and New Caledonia. Thus it is evident that its range extends over the whole Indo-Pacific region; but it is probably nowhere a common species.

ERIPHIA LÆVIMANA.

Eriphia lævimana, M.-Edw. Hist. Nat. Crust. i. p. 427 (1834); Dana, U.S. Expl. Exp. xiii. Crust. i. p. 249, pl. xiv. fig. 7 (1852); A. M.-Edw. Nouv. Archiv. Mus. Hist. Nat. ix. p. 255 (1873).

Two males and four females were collected by Mr. Brown. In the young animal the series of tubercles upon the frontal margin are not developed, the margin appearing subentire; but those on the postfrontal region and antero-lateral margins are clearly distinguishable. *E. lævimana* is distributed throughout the Indo-Pacific region; there are specimens in the collection of the British Museum, from Madagascar and the Mauritius, that certainly belong to this species, and not to the allied *E. smithii* of M'Leay (*Annulosa* in Smith's Zool. S. Africa, p. 60), figured by Krauss (Süd-Afrikan. Krust. p. 36, pl. ii. fig. 3, 1843), of which specimens, from Port Natal, are in the Museum collection.

OCYPODE CERATOPHTHALMA.

Cancer ceratophthalmus, Pallas, Spic. Zool. ix. p. 83. pl. v. figs. 7, 8 (1772).

Ocypode ceratophthalma, Fabr. Ent. Syst. Suppl. p. 347 (1798); M.-Edw. Hist. Nat. Crust. ii. p. 48 (1837); Règne Animal de Cuvier, Atlas, Crust. pl. xvii. fig. 1; Ann. Sci. Nat. (Sér. 3) Zool. xviii. p. 141 (1852); A. M.-Edw. Nouv. Archiv. Mus. Hist. Nat. ix. p. 270 (1873).

In the collection are two specimens of an *Ocypode*, males, and both in a mutilated condition, which I refer to this species. In both specimens are to be seen the large orange-red blotches on the sides

and back of the cardiac region which always characterize *O. ceratophthalma*. The terminal spines of the eyes in one specimen are quite short; in the other specimen they are longer, but not one third of the total length of the eye. Occasionally they are very greatly elongated; and evidently their length is of no value as a specific character. *O. ceratophthalma* is a very common and generally distributed Indo-Pacific species.

GRAPSUS STRIGOSUS.

Cancer strigosus, Herbst, Naturg. der Krabben und Krebse, iii. (part 1) p. 55. pl. xlvii. fig. 7 (1799).

Grapsus strigosus, Latr. Hist. Crust. et Ins. vi. p. 70 (1803); M.-Edw. Hist. Nat. Crust. ii. p. 87 (1837); Ann. Sci. Nat. Zool. (Sér. 3) xx. p. 169 (1853); A. M.-Edw. Nouv. Archiv. Mus. Hist. Nat. ix. p. 286 (1873), *ubi synon.*

Two specimens, a male and a female with ova, both in an imperfect condition, are in the collection. M. Alphonse Milne-Edwards (*l. c.*) has excellently summarized the characters which distinguish this common and variable species from the closely allied and still more common and variable *G. pictus*, and has indicated the synonymy of each species.

G. strigosus is distributed throughout the Indo-Pacific region, and is even (as is also *G. pictus*) found on the western coast of the American continent.

GRAPSODES NOTATUS.

Grapsodes notatus, Heller, Reise der Novara, Crust. p. 58, pl. v. fig. 2 (1865).

Three specimens, a young male and two females, are in the collection, which, I think, belong to this species. Dr. Heller's specimens were from the Nicobars; both the genus and species are unrepresented in the collection of the British Museum. The antero-lateral margins are described as 3-toothed, as are those of the specimens from Duke-of-York Island (including the external orbital tooth); in the figure of *G. notatus* there is an additional small antero-lateral tooth: this is probably an error of the draughtsman. As in the allied genus *Nectograpsus*, there is a wide hiatus between the outer orbital tooth and the suborbital lobe; this is mentioned in Dr. Heller's description, but not properly represented in the figure. Dr. Heller's genus *Grapsodes* is evidently very nearly allied to *Nectograpsus* of the same author, principally differing in the existence of antero-lateral marginal teeth. The two genera, in fact, bear the same relation to one another in the subfamily Sesarminæ as do certain species of *Chasmagnathus* to *Cyclograpsus* in the Grapsinæ.

SESARMA ROTUNDATA.

Sesarma rotundata, Hess, Archiv. f. Naturg. xxxi. p. 149, pl. vi. fig. 9 (1865).

Three specimens of this species, all of them males, are in the collection. *S. rotundata* belongs to the section of the genus in

which the lateral margin of the carapace is 3-toothed, and is distinguished by the peculiar convexity of the hepatic regions, and the granulation of the front part of the carapace, and the anterior legs. The ambulatory legs are long and slender, the last joint much shorter than the preceding. The specimen described by Hess was from Sydney, New South Wales; and specimens are in the British-Museum collection from the Fiji Islands (Nairai) and Eastern seas.

I subjoin the description of a species in the British-Museum collection[1].

SESARMA (HOLOMETOPUS) AUBRYI.

Sesarma (*Holometopus*) *aubryi*, A. M.-Edw. Nouv. Archiv. Mus. Hist. Nat. Bulletin, v. p. 29 (1869); ix. p. 307, pl. xvi. fig. 3 (1873).

Six specimens, four males and two females, of which one bears a considerable quantity of ova, were collected. They agree in all particulars with A. Milne-Edwards's description of the species, based upon specimens collected at New Caledonia, except that in the figure of the abdomen, probably that of a male, the sides are represented nearly straight, and the terminal joint as broad at base as the preceding; whereas in the specimens from Duke-of-York Island (as is usual in *Sesarma* and the allied genera) the terminal abdominal joint is much smaller than the preceding at its base.

In the *Sesarma* (*Pachysoma*) *hæmatocheir* of De Haan (Faun. Japon. Crust. p. 62, pl. vii. fig. 4), upon which Milne-Edwards founded the genus *Holometopus*, the front is broader in proportion to its depth, the abdomen has the sides more decidedly concave, and the terminal joint longer; the differences between the two species, however, are very slight, and may depend upon the age of the specimen.

CARDISOMA CARNIFEX.

Cancer carnifex, Herbst, Naturg. Krabben u. Krebse, i. p. 163, pl. xli. fig. 1, ♂ (1796).

[1] SESARMA TÆNIOLATA.

Sesarma tæniolata, White, List Crust. Brit. Mus. p. 38 (1847), sine descr.

Carapace quadrate and very convex, the groove defining the gastric region deep, the lateral margins with two prominent teeth (including the external orbital tooth). Front nearly vertically deflexed, the anterior margin sinuated, the median sinus wide; postfrontal lobes four, not very abrupt; carapace behind the lobes slightly granulated. Anterior legs robust; arm with a very strong tooth near the distal extremity of its upper margin; wrist closely covered with granules or small tubercles, each of which is itself crenulated; hand granulated externally, and with a strong granulated ridge on its inner surface; upper margin with a *longitudinal*, comb-like, closely pectinated ridge; mobile finger with a longitudinal ridge on its upper surface marked with about sixty transverse striæ. Ambulatory legs compressed and slightly hairy. Abdomen of male with the last joint not half the width of the preceding. Length and breadth of carapace about $1\frac{2}{3}$ inch.

Hab. Philippine Islands (*Cuming*, coll. Brit. Mus.).

This species is allied to *S. tetragona*, Fabr., but is distinguished from it by the curious longitudinal comb-like ridge on the upper margin of the hand and the transversely striated ridge on the mobile finger.

Cancer hydromus, Herbst, *l. c.* p. 16, pl. xli. fig. 2, ♀ (1796).
Cardisoma carnifex, Latr. Encycl. Méth. Hist. Nat. x. p. 685 (1825); M.-Edw. Hist. Nat. Crust. ii. p. 23 (1837); A. M.-Edw. Nouv. Arch. Mus. Hist. Nat. ix. p. 264 (1873).

In the single imperfect specimen (male) of this species in the collection a very small tooth exists at some distance behind the external orbital angle; the raised line defining the antero-lateral margins is continued but a short distance backward beyond this tooth; the left anterior leg is the larger; the ambulatory legs are clothed with long hairs.

PAGURUS PUNCTULATUS.

Pagurus punctulatus, Olivier, Encycl. Méth. viii. p. 641 (1811); M.-Edw. Hist. Nat. Crust. ii. p. 222 (1837).

A single specimen of this very common species is in the collection, a female, inhabiting the shell of *Dolium perdix*.

White, in the 'List of Crustacea in the Collection of the British Museum,' p. 60, adopts Herbst's earlier name of *Cancer megistos* for this species; but, as the description and figure of *C. megistos* are wanting in the only copy of Herbst's work that I have seen, I retain for the present Milne-Edwards's designation of *Pagurus punctulatus*, by which this species is generally known.

PARRIBACUS ANTARCTICUS.

Scyllarus antarcticus, Lund, Skrivt. Naturh. Selsk. Kjöben. Bd. ii. Heft 2, p. 22 (1793); Fabr. Ent. Syst. Suppl. p. 399 (1798).
Ibacus antarticus, M.-Edw. Hist. Nat. Crust. ii. p. 287 (1837).
Parribacus antarcticus, Dana, U.S. Expl. Exp. xiii. Crust. i. p. 517, pl. xxxii. fig. 6 (1852).

Two specimens, a male and a female, were collected. The male has the appendages (pleopoda) of the second and third abdominal segments much larger than those of the female, foliaceous, and equally developed; in those of the fourth and fifth segments the inner ramus is rudimentary. In the female the third, fourth, and fifth segments have the inner ramus of the appendages produced, substyliform, and two-jointed at its extremity.

LYSIOSQUILLA MACULATA.

Squilla maculata, Fabr. Ent. Syst. ii. p. 511 (1793); Lamarck, Hist. Ann. sans Vert. v. p. 188 (1818); M.-Edw. Hist. Nat. Crust. ii. p. 518 (1837).
Cancer (*Mantis*) *arenarius*, Herbst. Naturg. Krabben u. Krebse, ii. p. 96, pl. xxxiii. fig. 2 (1796).

One specimen, a male, of this common Indo-Pacific species is in the collection. It is of rather small size (about 8 inches). This species, when fully grown, is probably the largest of the genus.