

This very distinct species of *Asplenium* occurs in the deep gullies of the Trinity Bay Ranges. In habit it resembles *Lomaria discolor*, Wilde. This specific name is in honor of Dr. Chas. Prentice, F.L.S., who has greatly assisted in working up the ferns of Queensland.

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ON THE AUSTRALIAN SPECIES OF PENÆUS, IN THE MACLEAY MUSEUM, SYDNEY.

BY WILLIAM A. HASWELL, M.A., B.Sc.

1. *Penæus canaliculatus*, *M. Edw.* (*Hist. Nat. Crust.* Vol. ii. p. 414).

Specimens of this well-marked species are in the Macleay Museum from Port Jackson, where it is very common, Port Stephens, and Port Essington.

2. *Penæus semisulcatus*, *De Haan* (*Crust. Japon.* p. 191. pl. xlvi. fig. 1).

In addition to specimens from Fiji, a locality already indicated\* there are specimens of this species in the Macleay Museum from Endeavour River.

3. *Penæus monoceros*, *Fabr.* (*Ent. Syst. Suppl.* p. 409).

A single specimen, apparently referable to this species, was obtained by the Chevert at Endeavour River.

4. *Penæus esculentus* sp. nov.

Rostrum extending nearly as far forward as the distal end of the second joint of the internal antennae, pointed, and very slightly recurved near the tip; its superior border armed with a series of six pointed teeth, of which the most posterior is separated from the next by a distance greater than the intervals between the others; its lower border armed with three or four teeth, the

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\* *Vide* Mr E. J. Miers, "Notes on the Penæidae in the Collection of the British Museum," (*Proc. Zool. Soc.* 1878, p. 298).

intervals between which increase slightly in length distally—the most anterior being separated by a longer interval from the apex of the rostrum than from its successor; rostrum continued backwards into a non-sulcated carina, which, however, loses itself before attaining the posterior border of the carapace; on each side of the rostrum a groove or sulcus, which, commencing as an obscure linear depression near the tip of the rostrum, increases in breadth and depth posteriorly, but becomes lost about the middle of the carapace. Supraorbital spine absent; hepatic and antennary spines present; gastro-hepatic sulcus very deep; cervical groove obsolete posteriorly. Rami of antennules short; the internal scarcely equalling in length the two last segments of the peduncle; the external somewhat longer. Grinding surface of mandibles slightly excavate, with two obscure teeth; palp biarticulate, setiferous, phylloid, its apex blunt, and its outer border concave in its distal half, nearly straight proximally, its inner border uniformly convex. First maxillæ with the anterior division of the endopodite slender and pointed; the others broader, truncate, armed on their inner border with a series of spines. Second maxillæ with the exopodial portion of the scaphognathite much longer than the epipodial, and strongly incurved anteriorly; endopodite having the most internal of its phylloid divisions larger than the others. First maxillipedes with the inner division of the endopodite rudimentary; the squamiform plate of the exopodite armed with a pointed process near the proximal end of its outer border; the epipodite sub-triangular, with the posterior angle rounded. Second maxillipedes with the endopodite, when extended, shorter than the exopodite. Outer maxillipedes hairy, the palp short, hardly reaching to the distal end of the second joint of the endopodite. Ambulatory legs increasing in length to the third, which is nearly as long as the carapace and rostrum; the fourth pair much shorter than the third, but equal to the second; the fifth intermediate in length between the second and third. First pair with a long acute spine on the under surface of the second

joint, and another on the under surface of the third joint; the second pair with a single spine on the second joint. Abdomen with well-marked carina on the fourth, fifth and sixth segments; the first, second, fourth and fifth segments with a notch on each side posteriorly. Seventh segment strongly grooved on the middle dorsal line, its apex spiniform, its lateral margin devoid of spines. Appendages of sixth segment rounded distally, the inner slightly more pointed.

Length of largest specimen 9 inches.

*Hab.* Port Jackson; Port Darwin. (*Alex. Morton*).

This is the common edible prawn of Sydney, and Newcastle, etc.

5. *Penæus Macleayi* sp. nov.

Rostrum extending nearly as far forward as the end of the antennary scale, very slender and styliform near the apex, which is recurved; armed with five teeth above, of which the fifth is separated from the fourth by an interval greater than that separating the others; unarmed below; produced behind into a low carina which broadens out and becomes lost before attaining the posterior third of the carapace; a lateral groove at the side of the rostrum and the anterior part of the carapace. Gastro-hepatic sulcus deep. Supra-orbital spine absent; antennary and hepatic spines present. Filaments of antennules sub-equal, scarcely equal in length to the two last joints of the peduncle. External maxillipedes slender, hairy; palp extending as far as the middle of the third articulation of the endopodite. First pair of ambulatory legs as long as the antennary scale, very hairy internally; second and third progressively longer; fourth shorter than third; fifth the longest of all, and very slender. First and second pairs each with a spine at the base of the second joint. Abdomen having the fourth, fifth, and sixth segments dorsally carinated; carina ending in a small spine at the posterior border of the sixth segment. Terminal segment longitudinally grooved in the middle dorsal line, ending in a spiniform apex, ciliated laterally, and armed on each side

near the extremity with a strong spine, with two weaker spines immediately anterior to it.

Length 5 inches.

*Hab.* Port Jackson.

6. *Penæus granulatus*, sp. nov.

Rostrum rather short, not reaching so far as the end of the antennary scale, very slightly recurved, with ten small teeth above, situated close together anteriorly—the intervals between consecutive teeth increasing progressively from before backwards, the last separated from the penultimate by a wide interval; under surface toothless, with a fringe of very long cilia. Rostrum continued backwards into a blunt carina, which is non-sulcate, and reaches to the posterior margin of the carapace; no lateral sulci. Carapace granular. Supra-orbital spine present, small; antennary and hepatic spines present; gastro-hepatic sulcus almost obsolete. Eyes large. Antennules with the flagella sub-equal, nearly equal in length to the peduncle. External maxillipedes hairy, the first three joints of the endopodite broad, compressed; flagellum reaching hardly as far as the distal end of the second joint. Ambulatory limbs progressively increasing in length to the third pair; fourth shorter than, fifth equal to the third pair. First and second pairs both unispinous, third non-spinous. Surface of abdomen minutely granular; third, fourth, fifth and sixth segments with a mesial dorsal carina, which ends in a small spine on the sixth segment. First, second, fourth and fifth rings with a lateral notch on their posterior border; those on the first and second segments shallow and open, those on the fourth and fifth rather deeper. Seventh segment mesially grooved; its apex acute, but not developed into a spine; its lateral margin with a single, weak spine.

The above is the description of the adult female. From the same localities are a number of small male specimens, which seem to be the males of this species; they differ from the females in

the following points;—(1) the rostrum is a shade higher and more compressed; (2) the peduncles of the antennae are rather shorter; (3) the anterior pair of legs are bispinous; (4) there is no marked dorsal carina on the carapace.

Length of female  $3\frac{1}{2}$  inches; of male  $2\frac{1}{2}$  inches.

*Hab.* Darnley Island; Cape Grenville; Cape York (Chevert Exped.).

7. *Penæus Mastersii*, sp. nov.

Rostrum reaching nearly as far as the end of the antennary scale, slender, nearly straight; armed above with eight or nine teeth, of which the last is separated by a wide interval from the penultimate; unarmed below; continued back into a non-sulcate carina which does not reach to the posterior margin. A slight lateral groove at the side of the rostrum, not continued backwards. Carapace smooth; supra-orbital spine rudimentary; hepatic and antennary spines present, acute; gastro-hepatic sulcus deep; cervical suture well-marked in its anterior half. Eyes large; flagella of antennules equal in length to the two last segments of the peduncle. External maxillipedes rather slender; palp extending to the distal end of the antepenultimate joint of the endopodite. First three pairs of legs, as usual, progressively increasing in length from before backwards; fourth much shorter than third; fifth of about the same length as the latter; first three pairs with a spine on the under surface of their second joint. Fourth, fifth, and sixth segments of abdomen carinated, the carina on the sixth segment ending in a small spine; the posterior border of the first, second, fourth, and fifth with a notch on each side—shallow and wide on the first and second, deeper and narrower on the fourth and fifth. Last abdominal segment mesially grooved, and with a slight lateral groove near each external border, apex pointed but not markedly spiniform; lateral margin devoid of spines.

Length  $3\frac{3}{4}$  inches.

*Hab.* Port Darwin (Chevert Exped.).

8. *Penæus Novae-Guineæ*, sp. nov.

Rostrum rather short, not quite reaching to the end of the antennary scale; straight, sub-acute, armed above with six small teeth; unarmed below. No marked dorsal carina, nor longitudinal sulci on the carapace. Surface of carapace pilose; gastro-hepatic sulcus moderately deep; hepatic and supra-orbital spines absent. Eyes large. Flagella of antennules and antennae (wanting). External maxillipedes hairy, palp extending to the distal end of the second joint. Anterior pair of ambulatory limbs (wanting). Third pair longer than second; fourth shorter than third; fifth about equalling the latter in length. Under surfaces of second and third pairs devoid of spines. Abdomen pilose; a mesial dorsal carina on the second, third, fourth, fifth and sixth segments; no spine in the middle of the posterior border of the sixth. A deep lateral notch on the posterior border of the fourth and fifth segments. Last abdominal segment with a narrow mesial groove; its apex spiniform; its lateral border armed with three spines.

Length  $2\frac{1}{2}$  inches.

A single, imperfect, male specimen of this species, from Katow, New Guinea, is in the Chevert collection.

9. *Penæus Palmensis*, sp. nov.

Rostrum short, hardly exceeding the eyes in length, strongly reflexed from the base, straight in the rest of its extent, sub-acute, with eight teeth above—the last separated from the penultimate by a wide interval; unarmed below. No dorsal carina on the carapace. Surface of carapace pilose; gastro-hepatic sulcus shallow; orbital spine absent; antennary and hepatic spines present. Flagella of antennules very short, not much exceeding in length the last segment of the peduncle. Palp of external maxillipedes exceedingly short and slender. Proportionate length of ambulatory limbs as in preceding species; a spine on the under surface of the second joint of the first and second pairs. Abdomen with the second to the sixth segments carinated. Posterior

borders of the first and second with a shallow excavation on each side; those of the fourth and fifth with deep notches. No spines in the middle of the posterior border of the sixth segment. Last segment with a narrow mesial groove; its apex spiniform; its lateral margins armed with several spines.

Length about  $1\frac{1}{2}$  inches.

*Hab.* Palm Is. (Chevert Exped.).

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CONTRIBUTIONS TO A MONOGRAPH OF AUSTRALIAN LEUCOSIIDÆ.

BY WILLIAM A. HASWELL, M.A., B.Sc.

In Bell's Monograph of the Leucosiidæ (*Trans. Linn. Soc., Vol. 21., p. 277, et seq.*) seven species are mentioned as inhabiting the Australian Coast. A recent paper by Mr. E. J. Miers of the British Museum (*Trans. Linn. Soc., 1877, p. 235*), on this interesting family of Brachyurous Decapods, has added six new species to the list. From an examination of the Crustacea of the Chevert Expedition, as well as other specimens in the Macleay Museum which Mr. Macleay has kindly allowed me to study, together with a few in the Australian Museum, which I have been permitted to examine by the courtesy of Mr. E. P. Ramsay, I am enabled to add twelve new species to the list of Australian forms, and also to indicate new localities for several species not previously known to inhabit the Australian region.

GENUS I.—LEUCOSIA, Fabricius.

Sp. 1. *Leucosia unidentata*, *De Haan. (Crust. Japon., p. 133. t. 33, fig. 3)*. “Fronte unidentata; sinu thoracico anticè circulari, tuberculis perlalis circumscripto; brachiis facie superiore seriebus binis tuberculorum.”

*Hab.* Torres Sts. (Brit. Mus.).

Sp. 2. *Leucosia orbicularis*, *Bell, (Trans. Linn. Soc., Vol. 21, p. 284, pl. 30, fig. 1)*. “Testa orbiculari, fronte lato, brevissimo,