

1923

Commonwealth of Australia

Department of Trade and
Customs

FISHERIES

Biological Results of the Fishing Experiments
carried on by the F.I.S. "Endeavour" 1909-14

H. C. Dannevig
Commonwealth Director of Fisheries

VOL. V., PART 3.

Published by Direction of the Minister for Trade
and Customs, Hon. Austin Chapman, M.H.R.

Sydney, February 27th, 1923

591.92
D 23



Report on the Crabs obtained by the F.I.S. "Endeavour"
on the Coasts of Queensland, New South Wales,
Victoria, South Australia and Tasmania.

BY

MARY J. RATHBUN,

Associate in Zoology, United States National Museum,
Washington.

Plates xvi.-xlii., and Figures 1-3.

REPORT ON THE BRACHYRHYNCHA,
OXYSTOMATA AND DROMIACEA.

THIS report includes all the brachyuran crabs of the "Endeavour" collection other than the Oxyrhyncha or spider crabs, which were enumerated in Vol. V., part 1, 1918, with one exception here noted. There are sixty-one species listed below, and fourteen of these are new. There are also, among the species previously known, several which are additional to the Australian fauna: *Pinnotheres novæzelandiæ*, *Pilumnoplax heterochir*, *Liagore rubromaculata*, *Chlorodopsis pilumnoides*, *Pilumnus spongiosus*, *Acanthodes armatus*, *Charybdis natator*, *C. truncata*, *Myra fugax*, *Calappa lophos* and *Dromidiopsis edwardsi*. The most noteworthy is *Acanthodes armatus*, which, although described by de Haan in 1835, has been found rarely, and then only in Japanese waters.

I am indebted to Mr. Allan R. McCulloch for allowing me to introduce some of his notes, made several years ago, and for making it possible to examine several Australian *Pilumnus* not in the "Endeavour" collection.

Order DECAPODA.

Suborder REPTANTIA.

Tribe BRACHYURA.

Subtribe BRACHYGNATHA.

Superfamily OXYRHYNCHA.

Family INACHIDÆ.

Subfamily INACHINÆ.

PARATYMOLUS LATIPES QUADRIDENTATA, Baker.

Paratymolus latipes var. *quadridentata*, Baker, Trans. Roy. Soc. S. Australia, xxx., 1906, p. 107, pl. i., fig. 2.

Spencer's Gulf, South Australia, 20 fathoms; E.4442; one female with carapace 6.5 mm. long to tips of frontal teeth, and 6.3 mm. wide including spines.

Chelipeds of female shorter than of male, as figured by Baker, the merus scarcely reaching beyond the lateral angle of the carapace. The merus has a spine instead of a tubercle on its upper margin. The major chela, in this case on the right side, has an enlarged tooth at the base of the dactylus, which is absent from the slightly smaller, minor chela. The first three pairs of ambulatory legs are longer than the chelipeds.

This species was accidentally omitted from the report on spider crabs, vol. v., part 1, of this series, on account of its strong resemblance to *Telmessus*, save for the arrangement of the basal antennal segment.

Superfamily BRACHYRHYNCHA.

Family GRAPSIDÆ.

PLAGUSIA CAPENSIS, de Haan.

Grapsus (Plagusia) capensis, de Haan, Fauna Japon., Crust., 1835, pp. 31 and 58.

Plagusia capensis, Stebbing, South African Crust., Part iii., 1905, p. 47 and synonymy.

Plagusia chabrus, Rathbun (perhaps not Linnæus), Bull. U.S. Nat. Mus., xvii., 1918, p. 336, pl. civ.

Bass Strait?; E.444; one female of medium size. The front is bordered by conical spines and tubercles, two or three being pointed, and the rest rounded at tip.

Family PINNOTHERIDÆ.

PINNOTHERES SUBGLOBOSA, Baker.

(Plate xvi., fig. 1, and Fig. 1.)

Pinnotheres subglobosa, Baker, Trans. Roy. Soc. S. Australia, xxxi., 1907, p. 179; 17 fathoms, South Australian coast.

Off Marsden Point, Kangaroo Island, South Australia; 17 fathoms; E.4519; one female.

Length of carapace 7.6, width at middle 7.8, postero-lateral width above the first ambulatory leg 9.6, length of carapace and the part of the abdomen visible in dorsal view 9.2, fronto-orbital distance 2.4, front 1.3 mm.

Carapace thin and yielding, high, the upper surface transversely oblong-globose, the sides spreading outward posteriorly. Posterior margin, between legs of last pair, transverse. Two broad shallow furrows lead backward from the orbits but do not meet. Eyes colourless, fitting in the orbits.

Palp of maxilliped two-segmented, lacking a dactylus.

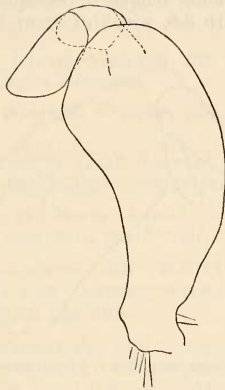


Fig. 1.—Left outer maxilliped, *Pinnotheres subglobosa*.

The slender palm is more than twice as long on its upper margin as its greatest width. The whole propodus has a slightly sinuous lower margin, and a fringe of hair on the inner surface just above the margin; the finger embraces less than one-third of that margin.

Legs similar, dactyli curved; second pair longest, its dactylus also longest; the first and third legs are subequal, the fourth shortest. The left leg of the second pair is longer than the right; whether this is individual or a specific character as in certain American species, only an examination of further material can determine.

The abdomen is very capacious, wider than the widest part of the carapace and envelops the sternum and bases of the legs. The sternal cavity has a dense fringe of hair.

PINNOTHERES NOVÆZELANDIÆ, Filhol.

(Plate xvi., fig. 2, and Fig. 2.)

Pinnotheres novæ zelandiæ, Filhol, Miss. l'Île Campbell, Crust., 1885, p. 395, pl. xlvi. in atlas, figs. 1-6.

Pinnotheres novæ-zelandiæ, Lenz, Zool. Jahrb., Syst., xiv., 1901, p. 467, pl. xxxii., figs. 11-14.

East coast of Flinders Island, Bass Strait; E.5676; one female. Approximate length of carapace 8.4, width 8.5, fronto-orbital width 3.8, width of front 1.6 mm.

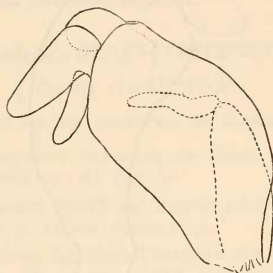


Fig. 2.—Left outer maxilliped, *Pinnotheres novæzelandiæ*.

Carapace soft and much wrinkled, nearly circular; front invisible in dorsal view, and covered by the abdomen, which reaches in all directions beyond the carapace. In front view the margin of the front is straight; the eyes are faintly pigmented, the orbits extend laterally beyond the eyes to a distance as long as the eyes, gradually tapering but not to a point; the margin of the orbit is bluntly rounded, not an acute rim.

Chelipeds rather small, chelæ shaped as represented by Lenz in his fig. 11, *op. cit.* Ambulatory legs slender, similar, dactyli curved; second pair a little the longest; second, third and fourth pairs regularly diminishing, first pair subequal to third. In dorsal view, the upper margin of the merus and the lower margin of the dactylus are conspicuously haired; there are also some hairs on the distal end of the propodus and on the inner surface above the lower margin.

Family GONEPLACIDÆ.

PILUMNOPLAX HETEROCHIR (*Studer*).

(Plate xvii., figs. 1-2.)

Pilumnus heterochir, Studer, Abhandl. k. Akad. Wiss. Berlin, ii., 1882 (1883), p. 11, pl. i., fig. 3 *a-d*.

Pseudorhombila (Pilumnoplax) normani, Miers, in Narr. Challenger Exp., i., part ii., 1885, p. 587.

Pilumnoplax heterochir, Miers, Challenger Rept., Zool., xvii., 1886, p. 227, pl. xix., figs. 1-1*d*.

South of Gabo Island, Victoria, 200 fathoms; E.6211; one male, two ovigerous females.

South of Cape Everard, Victoria, 200 fathoms; E.6152; one young male.

Forty miles South of Cape Everard, Victoria, 200-270 fathoms; E.6155; two males, three ovigerous females.

East-north-east of Maria Island, Tasmania, 127-180 fathoms; E.5168; one male, one female.

Measurements.—Largest male (E.6211), length of carapace 8.2, width 11 mm. Largest female (E.6211), length of carapace 9.3, width 12.8 mm.

In all the specimens the right cheliped is the larger except in the largest male. In comparing this male with one 8.6 mm. wide or about the size of Miers's figured specimen, the dark colour runs a little further back on the palm in the larger one; in all the males the colour margin is oblique to the lower margin, not at right angles to it as in Miers's figure 1*b*, and as in the female specimens. In the young male (E.6152), 4.8 mm. wide, the granulation of the major palm is much coarser than in larger specimens.

CARCINOPLAX MERIDIONALIS, *sp. nov.*

(Plate xviii.)

Type-locality.—Seventeen and a half miles south-east of Rame Head, Victoria, 76 fathoms; May 10, 1911; E.2233; one male, holotype.

Additional localities.—South-east of Cape Everard to South of Gabo Island, Victoria, 70-80 fathoms; E.6487; three females.

South of Mt. Cann, Victoria, 55-70 fathoms; E.6079; one male.

South and south-west of Mt. Cann, Victoria, 70-100 fathoms; E.6116; two males, two females. E.6117; one female, with encrusting Serpulid.

South-south-west of Mt. Cann, Victoria, forty miles, 70 fathoms; E.6276; two females, one immature, one ovigerous, both very small.

East of Bass Strait, 70-80 fathoms; E.4820; two males, two females.

Twenty miles east of Babel Islands, Bass Strait, 65-70 fathoms; E.5159; one young male.

Off Babel Islands, Bass Strait, 50-300 fathoms; E.4785; one male.

South-west of Eucla, about long. 127° E., Great Australian Bight, 80-120 fathoms; E. 3661 and 3662; two males, two females.

Sixty to eighty miles west from Eucla, Great Australian Bight, 80-120 fathoms; E.3167; one male, one female. P.3552; one female.

South Australia; E.4438; one male.

Measurements.—Male holotype, length of carapace 21.7, width (approximate) between tips of lateral spines 30.2, width just in front of lateral spines 27, fronto-orbital width 17.8, front 8.3 mm. Largest female (E.6117), length of carapace 22.3, width between tips of lateral spines 30.4, width just in front of lateral spines 28.2, fronto-orbital width 18.4, front 8.6 mm. One of the two smallest females (E.6276) is ovigerous, carapace 5.8 mm. long.

Description.—Carapace very convex fore and aft. A short, obliquely transverse branchial ridge near lateral tooth; postero-lateral angle of dorsum also marked by a smooth ridge. Two transverse depressions, one in front of, the other behind, the cardiac region. Three antero-lateral projections; the first or orbital tooth is blunt, produced little in advance of orbital angle, its inner slope short and continuing the supraorbital margin, outer slope convex; second tooth longer and with a sharp tip, directed forward; third projection a stout, acuminate spine, directed obliquely outward. Front transverse, or nearly so, double-edged, upper edge less advanced than lower. Antennal sinus well defined. Supraorbital fissure obscure. Suborbital margin crenulate; inner angle nearly as advanced as the front.

The major cheliped is considerably heavier than the minor one; of the 25 specimens possessing chelipeds, all but four have the major cheliped on the right side. On the upper border of the arm distad of the middle there is a rounded lobe; dorsal aspect of wrist an elongated rhomb, with a spine at the inner angle, and a smaller one at the outer angle. In the male the dark brown colour of the immovable finger embraces a small part of the palm except in its upper part where it does not quite cover the prehensile edge; on the dactylus the colour does not quite cover the proximal end but seems to cover the prehensile edges when the fingers are closed. In the female the brown is much more restricted, extending on the outside edges less than half the length from the tip in the full-grown, or quite half the length of the dactylus in the half-grown; on the prehensile edges the colour runs much further, half or more than halfway on the immovable finger, and nearly the whole length on the minor dactylus and quite the whole length on the major dactylus.

Ambulatory legs long and slender; last three articles sparsely fringed with long, fine hair; the dactyli have also two marginal stripes of dense pubescence.

The male abdomen is nearly triangular from the third segment to the tip, posterior margin of terminal segment arcuate. The sternal furrow just in front of the bases of the chelipeds forms a slightly obtuse angle at the median line.

CARCINOPLAX VICTORIENSIS, *sp. nov.*

(Plate xix.)

Type-locality.—South of Gabo Island, Victoria, 120-275 fathoms; E.4395; one male, holotype.

Additional localities.—South of Gabo Island, Victoria, 180-150 fathoms; E.4394; one female.

Off Gabo Island, Victoria, 80-100 fathoms; E.4779; one male with Serpulid shell on the merus of the left maxilliped.

Off Gabo Island, Victoria, about 200 fathoms; E.5196; four very young.

South-east of Cape Everard to south of Gabo Island, Victoria, 70-80 fathoms; E.6091; one young female.

Measurements.—Male holotype, length of carapace 24.4, width (approximate) between tips of lateral spines 34, width just in front of lateral spines 31.3, fronto-orbital width 20, front 9.3 mm. Largest specimen, male (E.4779), length of carapace 27.3, width between tips of lateral spines 37.4 mm. Length of carapace of a very young crab (E.5196) 3.6, total width of same 4.4 mm.

Description.—Of similar appearance to the preceding and at a glance might be mistaken for it.

The chief differences are:—

The antero-lateral angle of the carapace is coincident with the outer angle of the orbit, instead of being advanced beyond the orbital angle to form a tooth.

The first of the marginal teeth is less dentiform, its sides at an oblique angle to each other, meeting in a short, acute tip.

The spine at the lateral angle of the carapace is directed more outward.

The supra-orbital fissure is more deeply marked.

The wrist is squarer, less elongate.

The proximal end of the palm, opposite the carpal spine is produced in a tubercle.

The fingers are longer, slenderer and bent downward beyond the lower border of the palm. In preserved specimens they are almost colourless; only on the teeth of the distal third to half is there trace of a violet brown.

The dactyli of the ambulatory legs are almost covered with dense pubescence; a thinner coating of similar hairs runs along the greater part of the upper margin of the propodal segments and a short way on the lower margin.

Variations.—The chelipeds become very massive with age; the largest male (E.4779) lacks the major cheliped but the minor one is much larger than in the type specimen which has a somewhat smaller body.

The fingers of the females (there are none of large size in the collection) are little deflexed.

A young female (E.6091), 8.7 mm. long, has the first antero-lateral projection spiniform or tipped with a slender spine so that it has a strong resemblance to the spine at the lateral angle; the granulation of the hands is more pronounced than in the old.

The four young crabs registered E.5196, probably represent one of the earliest stages of the crab-form. The carapace is very narrow, as may be seen from the measurements, and subquadrate, the sides being parallel except just behind the orbit; the two lateral spines are nearly the same size and shape. The granules of the palm are arranged partly in longitudinal rows and mixed with fine hair.

Family XANTHIDÆ.

Subfamily XANTHINÆ.

XANTHO BOWENENSIS, *sp. nov.*

(Plate xx.)

Type-locality.—Seven miles north-north-east of Bowen, Queensland, 16 fathoms; E.3097; one male, holotype.

Measurements.—Male holotype, total length of carapace 31, greatest width, at last pair of lobes, 46.3, fronto-orbital width 17.6, front 10 mm.

Description.—Carapace very convex fore and aft, closely covered with uneven granules, which are smaller in the depressions; anterior two-thirds well areolated, areoles 1 L and 2 L fused,¹ and with 3 L and 4 L high and *Actæa*-like; 5 L and 6 L lower and partially fused; a small, transverse, oval areole on the posterior cardiac region; anterior mesogastrium very narrow; protogastric regions unevenly and incompletely divided; epigastric lobes distinct. Of the four lateral lobes, E is very low, N and T are obtuse-angled, S is rounded. Front not visible in dorsal view; median fissure closed, its sides overlapping; on each side a truncate lobe occupies less than half the front; a broad, shallow sinus separates it from the pointed outer tooth; no supra-orbital angle. Suborbital region, reaching to a line from the buccal angle to lateral tooth N, roughly granulous like the dorsum. The fissures either side of N are continued on the lower surface where they almost meet in a small, circular depression.

Chelipeds equal in male, closely granulous, the granules smaller and smoother on the merus than on the carpus and propodus; carpus slightly furrowed; chelæ short, stout, tapering distally; fingers black, fluted, with blunt tips, and meeting when closed.

¹ See Dana—Crust. U.S. Expl. Exped., part i., 1852, p. 29.

Legs granulous, the three principal segments short and broad; dactyli hairy between the granules.

Remarks.—This is not a typical *Xantho* in all respects, it is too convex at its middle, and the front too deflexed, and uncommonly narrow. On the other hand, the orbits and antennæ are typical, the flagellum not excluded from the orbit.

PSEUDOCARCINUS GIGAS (*Lamarck*).

Cancer gigas, Lamarck, Hist. Anim. sans Vert. v., 1818, p. 272.

Pseudocarcinus gigas, Milne Edwards, i., 1834, p. 409.
McCoy, Prodr. Zool. Victoria, ii., Dec. xviii., 1889, p. 293, pls. 179 and 180. McNeill, Rec. Austr. Mus., xiii. 3, 1920, p. 180.

East of Bass Strait; E.6094; one male, with *Lepas* attached.

East-north-east of Maria Island, Tasmania, 127-180 fathoms; E.5169; one young female.

East of Maria Island, Tasmania, 50-100 fathoms; E.6241; one young male.

North-east of Cape Pillar, Tasmania, 50-60 fathoms; E.6174; one young.

Thirty-five miles south-east of Bruni Island, Tasmania, 150-230 fathoms; E.5155; one young female.

South of Eucla, Great Australian Bight, long. 129° 28' E., 250-450 fathoms; E.3701; one male, with *Lepas*.

Great Australian Bight, 80-120 fathoms; E.3698; one female, with *Lepas*.

Southern Australia; one immature female.

A series of eight specimens, the three largest of which are 140 mm. wide or a little smaller, and the remainder graduated down to one 12.3 mm. wide. In small specimens the carapace is roughly granular except in the furrows; the granules on the inner and outer surfaces of the hand tend to form more or less distinct rows. All the spines on the carapace and legs are much more acute than in larger examples; in carapaces under 40 mm. wide, four of the lateral spines are much more developed than the intermediate ones, and the third and fourth large spines, or those near the widest part of the carapace are longest. The teeth on both fingers are proportionately larger. The chelipeds are subequal in size though the right is the larger.

As the specimens increase in size, all these characters become less marked except the size of the hand, the right becoming gradually larger than the left.

The red colour of the back may be uniform, as described by McCoy, or divided up into different patterns in different specimens. It may form vermiculating lines on the yellow ground colour or the latter may break through it as irregularly shaped spots. The chelipeds are all marked with vermicular red lines, and the fingers are uniformly scarlet at their junction with the hand.²

LIAGORE RUBROMACULATA, *de Haan*.

Liagore rubromaculata, Alcock, Journ. Asiat. Soc. Bengal, lxxvii., 1898, p. 93 [328] and synonymy.

Twenty miles north-east of Cape Gloucester, Queensland, 35 fathoms; E.3120; one small female.

New to the Australian fauna.

GALENE BISPINOSA (*Herbst*).

Cancer bispinosus, Herbst, Naturg. d. Krabben u. Krebse, i., No. 2, 1783, p. 144, pl. vi., fig. 45; and iii., No. 2, 1801, p. 11, pl. liv., fig. 1 (female).

Galene bispinosa, Alcock, Journ. Asiat. Soc. Bengal, lxxvii., part 2, 1898, p. 136 [371], and synonymy; Etheridge and McCulloch, Rec. Austr. Mus. xi. 1, 1916, p. 10, pl. iii., figs. 3-4.

Seven miles north-north-east of Bowen, Queensland, 16 fathoms; E.3096; one male. P.3517; one female.

Twenty miles north-east of Cape Gloucester, Queensland, 35 fathoms; E.3121; one female.

Two of Herbst's specimens were extant in the Berlin Museum in 1896; one is a male, labelled "type," and may be the original of pl. vi., fig. 45, the other is a female and is figured on pl. liv., fig. 1.

² Taken almost wholly from Mr. McCulloch's notes.

Subfamily ACTÆINÆ.

ACTÆA INSKIPENSIS, *sp. nov.*

(Plate xxi., figs. 1-3.)

Type-locality.—Off Point Inskip, Great Sandy Strait, Queensland, 10 fathoms; E.3186; one young male, holotype.

Measurements.—Male holotype, length of carapace 5.1, width of same 7.7, fronto-orbital width 4 mm.

Description.—Carapace, chelipeds and legs furnished with scanty hairs which do not conceal the surface and are scarcely to be noticed. Carapace covered everywhere except on the cardiac and intestinal regions with fine, subequal granules; well, but not deeply areolated; areolations but not granulations visible to the unaided eye. Each protogastric region is divided by a shallow, longitudinal sulcus which fades out posteriorly, into two unequal parts, the inner part half as wide as the outer; epigastric and antero-external protogastric lobes swollen. In the language of Dana,³ lobes 1 L and 2 L are scarcely separate, 3 L and 4 L are well marked, 5 L shows a tendency to subdivide, 6 L is faintly outlined behind, 1 R, 2 R and 3 R are continuous. Of the marginal lobes, N, T and S are prominent and somewhat angled, E is nearly flat. Postero-lateral margin concave; above the posterior margin there is a narrow, raised, bilobed and crenulated ridge. Frontal lobes in front view with sinuous margins separated by a median fissure; at the outer ends an independent, triangular tooth bent downward.

Chelipeds of immature male small; carpus granulous like the carapace, and with a few shallow furrows. Granules of palm arranged largely in longitudinal rows especially on the lower half of the outer surface; immovable fingers with two outer furrows, the lower one leading from the palm and tapering to a point, the upper one reaching only to middle of finger, a tooth on prehensile edge near its base; dactylus with a deep groove below the upper margin, a small tooth near the base of that margin, a large basal tooth or tubercle on the prehensile margin and a shallow tooth further out and distad to that on the immovable finger.

Legs granulous, except on the posterior surface of the merus joints, the granules more pointed than on carapace.

³ Dana—Crust. U.S. Expl. Exped., part i., 1852, p. 29.

Relationship.—Closely related to *A. obesa*,⁴ A. Milne Edwards, which also has a broad-oval carapace with numerous granules, similar areolations, and chelæ of the same form. In *obesa* the lateral lobes are rounded, not at all angular, and are not separated from the neighbouring areoles, the granulation is very coarse especially on the lateral thirds, and the posterior part is finely granulate, not smooth as in *inskipensis*; the posterior surface of the merus of the last leg is granulous, not smooth; the dactylus of the cheliped has a row of spinules on the upper margin instead of a single denticle.

ACTÆA PERONII, (*Milne Edwards*).

(Plate xxi., figs. 4-5.)

Xantho peronii, Milne Edwards, Hist. Nat. Crust., i., 1834, p. 392.

Xantho spinosus, Hess, Arch. f. Naturg., xxxi., 1865, pp. 132 and 171, pl. vi., fig. 3.

Actæa peronii, Haswell, Cat. Austral. Crust., 1882, p. 46.

From sixty miles south of Diana's Peak to about forty miles south of Mt. Cann, Victoria, 70-80 fathoms; E.6086; two males, one female.

South of Mt. Cann, Victoria, 55-70 fathoms; E.6080; one young female.

East coast of Flinders Island, Bass Strait; E.5672; one male, six females.

Forty miles west of Kingston, South Australia, 30 fathoms; E.4464; one young.

Marsden Point, Kangaroo Island, South Australia, 17 fathoms; E.4465; one young.

North of Cape Borda, Kangaroo Island, 40 fathoms; E.4463; one female.

Sander's Bank, Kangaroo Island, 28 fathoms; E.4462; one young.

Spencer Gulf, South Australia, 20 fathoms; E.4461; one female.

South Australia; E.4460; one female.

⁴ Rathbun—Trans. Linn. Soc. London, ser. 2, xiv., 1911, pl. xvi., figs. 4 and 5.

ACTÆA CALCULOSA (*Milne Edwards*).

Cancer calculosus, Milne Edwards, Hist. Nat. Crust., i., 1834, p. 378.

Actæa calculosa, Grant and McCulloch, Proc. Linn. Soc. New South Wales, xxxi., 1906, p. 11, and synonymy.

Fifteen miles north-west of Cape Jervis, South Australia, 17 fathoms; E.4457; two females. E.4459; one young female.

Marsden Point, Kangaroo Island, South Australia, 17 fathoms; E.6485; five males, ten females.

Spencer Gulf, South Australia, 16 fathoms; E.4456; four males, one female.

Subfamily CHLORODIELLINÆ.

CHLORODIELLA NIGER (*Forskål*).

Chlorodius niger, Alcock, Journ. Asiat. Soc. Bengal, lxvii., 1898, p. 160 [395], and synonymy.

North-west Island, off Rockhampton, Queensland; E.4455; one male, one female.

CHLORODOPSIS PILUMNOIDES (*White*).

Chlorodius pilumnoides, Adams and White, Voy. Samarang, Crust., 1848, p. 41, pl. ix., figs. 3 and 3a.

Chlorodopsis pilumnoides, Alcock, Journ. Asiat. Soc., Bengal, lxvii., 1898, p. 167 [402], and synonymy.

Thirteen miles south-east of Cape Capricorn, Queensland, 13 fathoms; E.3146; one young specimen, carapace 5.3 mm. wide.

New to the Australian fauna.

Subfamily PILUMNINÆ.

Genus PILUMNUS, *Leach*.*Key to the Australian species of Pilumnus.*

- a. Abnormal species. Carapace covered with symmetrically disposed, raised, curved or sinuate ridges:— *labyrinthicus*.†
- aa. Normal species in which the carapace is covered wholly or partially with a more or less thick coat of hair and is without raised ridges.
 - b. Carapace covered with a short, close pubescence, unmixed with long hairs.

- e. Antero-lateral teeth each capped by a cluster of granules:—
monilifer.
- cc. Antero-lateral teeth not capped by a cluster of granules.
- d. Carapace transversely suboval.
- e. Carapace with small, red, bead granules showing in the pubescence:— *rufopunctatus.**
- ee. Carapace without bead granules showing in the pubescence:— *humilis.†*⁶
- dd. Carapace narrow, subhexagonal, interregional furrows deep, not concealed by the pubescence.
- e. Merus of ambulatory legs sharply cristate above:—
cristipes.†
- ee. Merus of ambulatory legs not cristate above:—
*spongiosus.**
- bb. Carapace more or less hairy; when covered with a short, close pubescence, it is mixed with long hairs.
- e. Larger palm more than half smooth and bare, at least in male.
- d. Infero-distal portion of outer surface of smaller palm bare and, in male, smooth:— *fissifrons.**
- dd. Outer surface of smaller palm rough all over and more or less hairy.
- e. Last three antero-lateral teeth armed with long, slender spines. A similar but larger projection at inner angle of wrist:— *spiniarpus.**
- ee. Antero-lateral projections dentiform, the last three armed with short spinules. Larger wrist with an acute, conical tubercle at inner angle:— *tantalus.**
- cc. Larger palm either partially smooth and bare on not more than half its outer surface, or rough all over.
- d. Antero-lateral projections dentiform or lobiform, not spine-tipped.
- e. Palms and fingers finely granulate except on the short, light brown, finger-tips. Chelipeds, legs and anterior carapace ornamented with fringes of long and very fine soft hair:— *digitalis.**
- ee. Palms tuberculate. Fingers not granulate beyond their basal portions, and nearly all brown. Hairs coarser than in:— *digitalis.*
- f. Carapace half smooth and bare. Fringes of long hair on anterior and lateral portions. Whole outer surface of larger palm tuberculate:— *semilanatus.**
- ff. Carapace covered with hair or pubescence.

⁶ The name *humilis* was suggested as an alternative by Miers (Crust. "Alert," 1884, p. 221, pl. xxi., fig. B) for specimens which he doubtfully labels *P. lanatus* Latreille. Latreille, however, in concluding his brief description (Encyc. Méth., Entom., x., 1825, p. 125) compares *lanatus* with *vespertilio*, as follows: "Un peu plus grand que le précédent, avec les serres épaisses et graveleuses; d'ailleurs presque semblable. Variété peut-être du male de cette espèce." This indicates a much closer resemblance of *lanatus* to *vespertilio* than one would ascribe to the trim looking species figured by Miers, *loc. cit.* I have, therefore, used the name *humilis* for his species.

- g. Two notches in upper margin of orbit. A subhepatic tooth present. Carapace rough with small, granulate areoles and covered with distinctly separated bunches of hair.
- h. Fingers whitish or lightish:— *vespertilio.*
- hh. Fingers blackish:— *lanatus.†*
- gg. One notch in upper margin of orbit. No subhepatic tooth. Carapace finely, and in the centre, sparingly granulate; hairs soft, without definite arrangement:— *contrarius.**
- dd. Antero-lateral projections (some or all) either spines or spine-pointed teeth.
- e. Antero-lateral projections simple, not bifid nor with spinules on their slopes.
- f. Large hand ornamented with rounded granules. Outer orbital angle a small tooth, not spine-tipped.
- g. Granules of palm arranged in longitudinal series and almost concealed in pubescence or hairs.
- h. Carapace wide, one and a third times as wide as long. Anterior carapace, wrist and palm clothed with short pubescence:— *seminudus.†*
- hh. Carapace narrow, less than one and a fourth times as wide as long. Carapace, wrist and palm clothed with long hairs:— *pulcher.*
- gg. Granules of palm not arranged in rows or concealed by pubescence:— *terrae-reginae.†*
- ff. Large hand ornamented with spines or pointed tubercles or granules. Outer orbital angle a spine or tooth with sharp tip.
- g. Large hand ornamented chiefly with spines, less than half smooth and bare. Three antero-lateral spines long, slender, horny, set in cylindrical bases from which spring a few long hairs.
- h. No subhepatic nor outer orbital spine:— *australis.†*
- hh. A long, slender, subhepatic spine. A similar spine at outer angle of orbit:— *acer.**
- gg. Large hand ornamented with conical, pointed tubercles. Antero-lateral spines slender, set in triangular or conical bases. A small, subhepatic spinule.
- h. Larger palm half smooth and bare:— *hirsutus.**
- hh. Larger palm nearly all rough, tubercles largely seriate:— *vestitus.*
- ee. Antero-lateral projections either bifid or with spinules on their slopes.
- f. Antero-lateral teeth bispinous, the anterior spine the larger. Both palms smooth just above lower margin:— *etheridgei.**
- ff. Antero-lateral teeth spine-pointed and with several much smaller spinules on their slopes. Larger palm only is smooth just above lower margin:— *tomentosus.**

* In the "Endeavour" collection. † Not seen by the writer.

SPECIES OF PILUMNUS REMOVED TO OTHER GENERA.

P. glaberrimus, Haswell, 1881. Now *Ceratoplax glaberrimus* (Haswell) = *C. punctata*, Baker, 1907. Haswell's type examined.

P. inermis, Haswell, 1881. Now *Ceratoplax inermis* (Haswell). Type not found; specimen from Saddleback Island, Queensland, examined.

P. integer, Haswell, 1881. Photographs of type (dorsal views) examined. Should be referred to *Chasmocarcinus* or a kindred genus.

P. pilosus, Fulton and Grant, 1906. Now *Heteropilumnus fimbriatus* (Milne Edwards, 1834). Not *P. fimbriatus*, Haswell, 1882 = *Cryptocæloma fimbriatum*, Miers, 1884. See de Man (who examined Milne Edwards's types), Zool. Jahrb., Syst., viii., 1895, p. 533.

P. fimbriatus, Haswell, 1882. Now *Cryptocæloma haswelli*, nom. nov. = *C. fimbriatum*, Miers, 1884, not *P. fimbriatus*, Milne Edwards, 1834. Male specimen from Port Denison, Queensland, examined.

PILUMNUS SPONGIOSUS, *Nobili*.

Pilumnus spongiosus, Nobili, Bull. Mus. Hist. Nat., Paris, 1905, No. 6, p. 406; Ann. Sci. Nat., Zool. (9), iv., 1906, p. 280, pl. x., fig. 6.

South of Gabo Island, Victoria, 200 fathoms; E.6212; one male. Carapace length 5.6 mm., width 7.1 mm.

This specimen is much smaller than those described by Nobili; the carapace is proportionally narrower than that of the female measured by him, the distance being shorter from the orbit to the second of the five lateral teeth. In nearly every respect the "Endeavour" specimen agrees with the descriptions cited; there is, however, indication of a transverse fringe of hair on the front, though it is incomplete; the pubescence in front of the fringe is shorter than behind it; only one row of granules is discernible on the margin. It may be added that both fingers of both chelæ are deeply grooved, and the granulation extends half the length of the dactyls and almost to the tips of the immovable fingers.

PILUMNUS DIGITALIS, *sp. nov.*⁶

(Plate xxii.)

Type-locality.—South 29° east of Pine Peak, Queensland; E.6486; one male, holotype. Length of carapace 9, width 12, width of front 4.8, distance between outer angles of orbits 9, length of penultimate leg 16.8 mm.

Additional locality.—Eleven to fourteen miles northwest of Pine Peak, Queensland, 24-26 fathoms; E.3188; one male.

This species belongs to the group of *P. trichophorus*⁷ de Man, *P. trichophoroides*⁸ de Man and *P. borradailei*⁹ Rathbun. Like them it has the posterior half of the carapace flat, the surface of body and legs almost entirely covered with a coat of short hair, while fringes of long hair ornament the anterior third of the carapace, and also the chelipeds and legs. The new species has a narrower carapace, its length just three-fourths of its width; the fronto-orbital distance is greater in proportion to width of carapace; the regions are mostly well defined, the mesogastric, protogastric, frontal, cardiac, anterior branchial and posterior branchial; while a furrow sets off the narrow marginal rim of the front, the wider, inner margin of the orbit, the posterior margin, and partially circumscribes an inner branchial areole. The outer of the two emarginations of the upper orbital margin is much the larger and helps to define the dentiform outer angle, which is more acute than the three succeeding blunt teeth of the antero-lateral margin of the carapace. The transversely oblique ridge leading inward and forward from near the hinder part of the posterior tooth is pronounced and granulate. A similar ridge is subparallel to the antero-lateral margin, and runs from the gastric region to a point opposite the third tooth.

⁶ It should be noted that, in drawing the different species of *Pilumnus*, the carapace has been inclined so as to represent the true edge of the front, even though that edge is invisible in a strictly dorsal view.

⁷ de Man—Zool. Jahrb., Syst., viii., 1895, p. 544; ix., 1896, pl. xiii., figs. 7-7e.

⁸ de Man—*Op. cit.*, p. 549, pl. xiii., figs. 8a-8e.

⁹ Rathbun—Proc. Biol. Soc. Washington, xxii., 1909, p. 113.

Chelæ somewhat unequal, covered with a fine but dense granulation reaching nearly to the tips. The horny tips, to which the long hair extends, are in the case of the movable finger only one-fifth of the length of the whole finger. The specific name draws attention to this peculiarity.

Ambulatory legs shorter than in *trichophorus* and *trichophoroides*, the penultimate leg being less than twice as long as the fronto-orbital distance.

PILUMNUS CONTRARIUS, *sp. nov.*

(Plate xxiii.)

Type-locality.—Twelve miles north-north-east of Bowen, Queensland, 19-25 fathoms; E.3155; one male, holotype.

Measurements.—Male holotype, total length of carapace 11.6, total width 13.5, fronto-orbital width 9.4, width of front 5 mm.

Description.—A narrow species without spines, clothed with uneven, ragged-looking hairs. Carapace covered with short and rather fine hair, also long, coarse hair disposed in a line behind the front, a bunch on each protogastric region and a larger patch near the margin at the widest part of the carapace. When the hair is removed, the hepatic region is seen to be marked off by a wide furrow, the epigastric regions are isolated, the protogastric regions are continuous with the broad part of the mesogastric region, the median furrow, including the narrow part of the mesogastric region, is deep, the epibranchial lobe is raised, the lateral teeth are separated off in a sort of rim. All the most elevated parts of the carapace including the frontal, epigastric, middle part of protogastric, hepatic and epibranchial lobes, also the antero-lateral teeth and the postero-lateral regions are granulate.

The large lobes of the front are broadly rounded, median notch of good size, lateral notches larger, the outer teeth slightly acute. Inner upper angle of orbit almost obsolete. Margins of front and orbit granulate, one well-marked superior orbital notch, a shallow notch below outer angle, a thick, triangular tooth at lower, inner angle. Suborbital and subhepatic regions very finely granulate; no subhepatic tooth nor spine. Four antero-lateral teeth, the first low, second largest, carapace equally wide at the third and the fourth tooth.

Chelipeds and legs clothed with long hair, through which the surface is imperfectly seen; arm with a large, subterminal tooth above, lower and inner margins tuberculated; carpus finely and sparingly granulate, a small tooth at inner angle; larger palm unevenly tuberculate, the tubercles largest on upper surface and on lower, distal portion of outer surface; proximal half of lower margin tuberculate; fingers smooth except upper, proximal end of dactylus; two grooves on outer surface of fixed finger, which is slightly deflexed. Minor palm considerably smaller, tuberculation continued so as to embrace the whole lower surface, and part of the fingers, each finger with three deep grooves on the exposed surfaces. Legs almost entire, the upper margin of the merus finely and obscurely roughened.

Remarks.—In shape this resembles some species of *Heteropanope* Stimpson.¹⁰ Of the species of *Pilumnus*, it has much in common with *P. marginatus* Stimpson¹¹ from Loo Choo, but the carapace of the latter is wider with more convergent postero-lateral borders and the hands are more finely roughened.

In *P. contrarius* the tubercles of the major palm, contrary to the customary rule, increase, instead of diminish, in size toward the distal, lower portion, a fact to which the name draws attention.

PILUMNUS SEMILANATUS, Miers.

(Plate xxiv., figs. 1-2.)

Pilumnus semilanatus, Miers, Zool. Alert, Crust., 1884, p. 222, pl. xxii., figs. B and b. McCulloch, Rec. Austral. Mus., ix., 1913, p. 325, fig. 43, and synonymy.

Seven miles north-north-east of Bowen, Queensland, 16 fathoms; E.3099; two females (one ovigerous). P.3519; one male, one female.

Eighteen miles south by west of Lady Elliot Island, Queensland, 18 fathoms; E.4441; two females.

Great Sandy Strait, Queensland; P.3569; one young female.

Off Point Inskip, Great Sandy Strait, Queensland, 10 fathoms; E.3150; one female. E.3183; one young.

¹⁰ Stimpson—Proc. Acad. Nat. Sci. Philadelphia, x., 1858, p. 35.

¹¹ Stimpson—Smithson. Misc. Coll., xlix., 1907, p. 70, pl. ix., fig. 2.

The specimens vary in size from the male (P.3519) 23 mm. long by 29 wide, to the young female (P.3569) 6.5 mm. long by 7.7 wide.

The species may be recognised by its ragged appearance, the carapace more than half smooth and naked, the long, coarse, tubular hairs disposed in tufts on the anterior and antero-lateral portions; besides there is a small tuft above each posterior corner, and a still smaller tuft at each end of the gastro-cardiac suture. The granules and tubercles on the hepatic region are partially exposed. The upper part of wrist and hand is almost bare and armed with large tubercles; the distal half of the larger palm is also bare and the tubercles well spaced. The ambulatory legs are thickly clothed with hair on the upper margin, and in the last pair on the lower margin, while the posterior surface of the last two segments in all the legs is hairy.

PILUMNUS RUFOPUNCTATUS, Stimpson.

(Plate xxiv., figs. 3-4.)

Pilumnus rufopunctatus, Stimpson, Proc. Acad. Nat. Sci. Philadelphia, x., 1858, p. 36 [33]; Smithson. Misc. Coll., xlix., 1907, p. 66, pl. viii., fig. 3. Haswell, Cat. Austral. Crust., 1882, p. 66.

Spencer Gulf, South Australia, 16 fathoms; E.4444; four males, four females. The largest male is 9 mm. long, 13 wide; the other specimens are considerably smaller.

The species may be recognised by its short, thick, rather smooth, furry coat in which are embedded the few red granules, which to a certain degree retain their colour in alcohol; the large hand is half granulate, half smooth.

PILUMNUS FISSIFRONS, Stimpson.

(Plate xviii., figs. 3-4.)

Pilumnus fissifrons, Stimpson, Proc. Acad. Nat. Sci., Philadelphia, x., 1858, p. 36 [33]; Smithson. Misc. Coll., xlix., 1907, p. 67, pl. viii., fig. 4. Haswell, Cat. Austral. Crust., 1882, p. 68, pl. i., fig. 6.

Off Point Inskip, Great Sandy Strait, Queensland, 10 fathoms; E.3184; two males, one female.

Great Sandy Strait, Queensland; P.3570; one male, one female.



The largest specimen is the male, P.3570, measuring 6.4 mm. long by 8 mm. wide, or 1:1.25. Both females are smaller than the males, the smallest female (P.3570) measuring 4.8 by 6.9 mm. A lot of four specimens from Port Jackson, sent to the U.S. National Museum (Cat. No. 17025) by the Australian Museum, run much larger, one male being 9.6 by 14.4 mm. or 1:1.5. The width of the carapace, it will be seen, increases rapidly with age.

In the "Endeavour" specimens the main pubescence is very short and close, but the tufts scattered about, especially on the elevations are formed of long, coarse but soft, tubular hairs, which are much longer than on the larger specimens; of a different sort are the long, slender hairs on the ambulatory legs and on the granulated portion of the chelipeds.

PILUMNUS TANTULUS, *sp. nov.*

(Plate xxv.)

Type-locality.—Platypus Bay, Queensland, 5-9 fathoms; E.3113; one male, holotype.

Additional localities.—Eleven to fourteen miles north-west of Pine Peak, Queensland, 24-26 fathoms; E.3189; four males, two females (one ovigerous).

South 29° east of Pine Peak, Queensland; P.3573; four males, two females.

Measurements.—Male holotype, total length of carapace 7.3, width including teeth 10.2, fronto-orbital width 7.4, width of front 3.7 mm.

Description.—A small species. Carapace covered with short, dense pubescence and some longer, fine hairs. When the carapace is cleaned, it is seen to be well areolated; antero-lateral regions rough with four elevations, one hepatic, one extending inward and forward from the last tooth, two behind the orbit; postero-lateral regions finely granulate. Frontal lobes almost free of pubescence, margins slightly oblique and granulate, median cut triangular; outer teeth independent, tuberculiform; pre-orbital angle very obtuse and inconspicuous. Two well-marked emarginations in the upper, granulate border of the orbit; a large, slightly acute tooth at outer angle, beneath which there is a narrow notch followed by a

denticulated margin which gradually advances to the acute inner angle. Three thick lateral teeth, more produced than the orbital tooth and each tipped with a small spine. No subhepatic projection, only a few granules. Posterior margin broad.

Chelipeds very unequal, less hairy than carapace, pubescence not concealing roughness, large chela totally bare. Outer surface of merus granulate; upper edge denticulate, a large subterminal tooth, a smaller terminal one; inner edge tuberculate, lower edge partly so. Carpus covered with pointed tubercles, sharper and more spinelike on the smaller carpus, which also has a spine instead of a tubercle at the inner angle. Larger palm bare and smooth except for a band of tubercles or large granules along the proximal end of the outer surface and a patch of the same at the proximal end of the upper surface. Two or three granules at base of dactylus. Fingers light brown, the colour covering the distal two-thirds of the fixed finger and almost the whole of the dactylus. The outer surface of the smaller palm is covered with pointed tubercles arranged in approximately seven rows, and a patch of the same is at the proximal end of the dactylus above. Ambulatory legs hairy, the merus roughened above by fine, unequal spinules.

Relationships.—The very unequal chelæ suggest those of *P. spinicarpus*¹² but in that species the rough area on the larger palm is much greater, also the carapace and legs are longer. The carapace of *tantulus* resembles in shape that of *P. quadridentatus*¹³ de Man, which also has a striking inequality in chelæ, but differs from *tantulus* in having five (instead of four) antero-lateral teeth, counting the post-orbital tooth, and in the larger palm being finely granulate outside.

PILUMNUS ETHERIDGEI,¹⁴ *sp. nov.*

(Plate xxvi.)

Pilumnus lanatus, Fulton and Grant, Proc. Roy. Soc. Victoria, xix., 1906, p. 18, not *P. lanatus* Latreille.

Type-locality.—Ten miles north of Circular Head, Tasmania; E.6490; two males (one is holotype).

¹² See page 123

¹³ de Man—Zool. Jahrb., viii., 1895, p. 537; ix., 1896, pl. xiii., figs. 6-6g.

¹⁴ For Robert Etheridge, junr., late Director and Curator of the Australian Museum.

Additional locality.—Oyster Bay, Tasmania, 26 fathoms; E.5187; one male, two females, two young. Without locality; E.6492; four males, four females (one soft shell).

Measurements.—Male holotype, entire length of carapace 12, width, including spines, 16.5, fronto-orbital width 10.5, width of front between antennal notches 5.5 mm.

Description.—Carapace very convex from front to back, suboval, the front little advanced beyond curve of antero-lateral margins, the latter nearly as long as the convex postero-lateral margins, posterior margin between legs of last pair arcuate. Posterior fourth or third of carapace smooth and bare; remainder covered with a thin coating of short, light-coloured hair, which does not disguise the surface. Regions fairly well outlined; gastro-cardiac depression deep; also the median furrow leading from the mesogastric region to the front. Surface roughened by two or three stout spinules on the hepatic region, by smaller spinules opposite the last lateral tooth, by the granuliform sockets of many of the surface hairs, and by fine, close granulation on the post-lateral regions.

Edge of front invisible in dorsal view, median lobes deeply separated, oblique, extremities broadly rounded; small outer lobe dentiform with a tuberculiform tip. Supra-orbital border irregularly spinulose and granulose, inner angle not accented, notches obscure; outer angle or first antero-lateral tooth broad, tipped by a short, stout, curved spine, behind which is a spinule, and under which are several spinules; a notch separates this tooth from the suborbital margin, armed with four or five stout spinules, and near the inner angle a broad tooth with bispinulose tip. The second, third and fourth antero-lateral teeth are similar to the first, but larger; the fourth has a narrower base than the second and third, and the spinule on its posterior slope may be absent. Submarginal regions granulose and spinulose, subhepatic region with three or more spinules, some of which are visible from above.

Chelipeds of large male stout, unequal, but similar in shape and ornamentation; merus very high, armed above with two large spine-pointed teeth, followed behind by obscure granulation on margin and on outer surface; wrist and hand armed with stout, acute spines, which on the palm become lower and more and more tuberculiform toward the lower and distal margins until they altogether

disappear; dactyli spinulose above at base only; a punctate groove runs backward from the next to the lowest sinus of fixed finger, a similar groove near upper edge of dactylus; also a row of punctæ near the prehensile teeth of each finger; fingers pale brown in the male, darker in the female, the colour not extending quite to their bases. Dorsal aspect of chelipeds hairy.

In the female, the propodus has a straighter lower border, the small palm is rough all over the outer surface and half way down the fingers, the large palm is also rougher than in the male but finely so, and the spinulose area on the dactylus is longer. In the small male the armature of the lesser palm resembles that of the female.

Merus of ambulatory legs subentire above; carpus and propodus armed with spines, carpus with about four, propodus about five.

Remarks.—The convexity of the carapace in connection with the complex lateral spines is sufficient to fix this species.

PILUMNUS TOMENTOSUS, Latreille.

(Plate xxvii., figs. 1-2.)

Pilumnus tomentosus, Latreille, Encyc. Méth. Hist., Nat., Entom., x., Paris 1825, p. 125 (Nouvelle Hollande).
Milne Edwards, Hist. Nat. Crust., i., 1834, p. 418.
Not Filhol, Mission de l'Ile Campbell, Paris, 1885, p. 375, pl. xlv., figs. 6-8.

Pilumnus tomentosus (?), Miers, Challenger Rept., Zool., xvii., 1886, p. 160, pl. xiv., fig. 4.

Shoalhaven Bight, New South Wales, 15-45 fathoms; E.278; one male, two females (one ovigerous). P.2139; one ovigerous female.

Off Gabo Island, Victoria, 80-100 fathoms; E.4780; one male, one female.

South-east of Cape Everard to south of Gabo Island, Victoria, 90-150 fathoms; E.6095; three males, three females.

From sixty miles south of Diana's Peak to about forty miles south of Mt. Cann, Victoria, 70-80 fathoms; E.6088; two males, two females.

South of Mt. Cann, Victoria, 55-70 fathoms; E.6081; four males, seven females.

South of Mt. Cann, Victoria, 55-100 fathoms; E.6180; two young (one shedding).

South and south-west of Mt. Cann, Victoria, 70-100 fathoms; E.6119; two females.

East of Bass Strait, 70-80 fathoms; E.4825; two young.

East of Flinders Island, Bass Strait; E.5670; two males, seven females.

East of Flinders Island, Bass Strait; P.2321; one male. P.2322; one male.

East of Flinders Island, Bass Strait, 200-300 fathoms; E.4809; one ovigerous female. E.4810; one male. E.4811; one male. E.4812; one male, one ovigerous female. E.4813; two ovigerous females.

Off Falmouth, Tasmania, 60-70 fathoms; E.6135; one female.

Marsden Point, Kangaroo Island, South Australia, 17 fathoms; E.4454; eight males, ten females.

Spencer Gulf, South Australia, 20 fathoms; E.4440; one female.

Spencer Gulf, South Australia, 16 fathoms; E.6488; two young.

Fifteen miles north by west of Cape Jervis, South Australia, 17 fathoms; E.4443; two males, one female with Rhizocephalid, one young.

South-west of Eucla, about long. 127° E., Great Australian Bight, 80-120 fathoms; E.3665; one ovigerous female.

Sixty to eighty miles west from Eucla, Great Australian Bight, 80-120 fathoms; E.3176; two ovigerous females. P.3560; one ovigerous female. P.3561; one male. P.3562; one male. P.3563; one male, two ovigerous females.

South Australia; E.4439; one female.

Measurements.—Largest specimen, female, E.3176: Entire length of carapace 25.2, entire width 35, width in front of posterior pair of spines 31.2, width of front, to antennal notches 10.4, width of front and orbits 20.4, width of posterior end of mesogastric region 7.2 mm. Largest male, E.4454: Entire length of carapace 24.4, entire width 31.3, width in front of posterior pair of spines 28.4, width of front to antennal notches 8.9, width of front and orbits 18.8, width of posterior end of mesogastric region 6.2 mm.

Description.—Front advanced, antero-lateral margins arcuate, postero-lateral margins strongly convergent. Surface covered with short, numerous, but not crowded, single, yellow (in alcohol) hairs which entangle a coat of refuse; regions well marked, branchial region partially subdivided, several (three or four) subacute spines or spinules near the marginal spines. Front subtriangular, lobes with a short inner and long outer slope and rounded tip, edge denticulate; outer tooth single, independent, triangular, spiniform. Inner angle of orbit suberect, not at all advanced. Upper orbital margin with a few spinules, two subequal emarginations, and an outer spine of moderate size. Spinules of lower orbital margin larger and more regular than those of the upper margin, inner spine the largest. A narrow subhepatic spine is visible in dorsal view where it appears as a second antero-lateral spine; in side view it is in same straight line as three succeeding spines; these are large, sharp-pointed, conical spines, each with one or more spinules on its slope; the first of the three spines points almost directly forward.

Chelipeds and legs clothed with similar hairs to those on the carapace, but on the legs the hairs are longer; on the chelipeds the hairs are thickest about the bases of the spines. Chelipeds very unequal; merus with a terminal and a subterminal spine above, lower border obscurely denticulate, one or two spinules on inner border; carpus armed with scattered, conical, acute spines, the longest one erect at inner angle. Larger palm covered with numerous, similar spines, pointing distad and sometimes—especially in full grown males—disappearing toward the lower margin and fixed finger; proximal end of lower margin tuberculate. Each finger has two outer, punctate grooves; the dactylus is tuberculate above at its base. Smaller palm similarly armed, usually all over the outside,

the spines showing signs of longitudinal arrangement and continued half way down the dactylus and nearly as far on the immovable finger.

The ambulatory legs are rather broad, and little armed; the merus has a terminal spinule on the upper border and a rightangled subterminal tooth.

The very young have some long soft hairs among the short bristly ones.

Remarks.—*P. tomentosus* is by far the most abundant species of *Pilumnus* in the "Endeavour" collection. One would think from Miers's figure, *loc cit.*, that it was very smooth and trim looking, but it has a strong tendency to collect dirt and is very untidy looking. Some of the spines, especially those on the back, retain a red colour in alcohol.

PILUMNUS HIRSUTUS, *Stimpson.*

(Plate xxviii.)

Pilumnus hirsutus, Stimpson, Proc. Acad. Nat. Sci., Philadelphia, x., 1858, p. 37 [34]; Smithsonian Misc. Coll., xlix., 1907, p. 69, pl. ix., fig. 1.

Twelve miles north-north-east of Bowen, Queensland, 19-25 fathoms; E.3156; one female.

Twenty miles north-north-east of Double Island Point, Queensland, 30 fathoms; E.4436; one male, one female.

Measurements.—Female (E.3156), total length of carapace 10.1, width including spines 14.1, fronto-orbital width 11 mm. Female (E.4436), length 9.8, width 14.1, fronto-orbital width 10.4 mm. Male (E.4436), length 7.4, width 10.1, fronto-orbital width 7.8 mm. Ratio of length to width in the three specimens, 1:1.4, 1:1.44, 1:1.37, the male being narrower than the females, and the females with a wide range of variation.

There is also some variation in the convexity and in the advancement of the front. The larger female is the most convex, the smaller female has the least produced front, and appears to have (though really has not) the greatest relative fronto-orbital width.

The orbits are very wide, and the distance between the subequal, triangular, superior notches is uncommonly long. The four antero-lateral teeth are similar, having a triangular base and a very slender terminal spine which is shorter in the first or orbital tooth. In only the largest of the three specimens is there a subhepatic spine; it is very short, but visible in dorsal view. In the other two specimens there is on the subhepatic region a cluster of about three sharp granules, which is barely visible from above. The hair on the carapace is very soft and of two sorts, a short, fine fur, with small clusters of longer, coarser hairs, including a line just behind the frontal lobes. These lobes are broadly rounded, and are separated by a large notch; the outer tooth of the front is rather wide as these teeth go, subrectangular, and with a very small point; the inner orbital angle is obtuse and inconspicuous. Upper margin of orbit and front finely granulated; lower margin with a definite outer notch, followed by a short granulate edge and then by sharp spinules mixed with granules.

Chelipeds very unequal; merus with two spines at distal end followed by spinules; wrists and palms armed with sharp tubercles or stout spines, which cover only half of the larger palm, and are seriate on the smaller palm. The brown colour of the fingers does not quite come to their bases. The larger thumb has a punctate groove not far above the margin; the dactylus is rough above near its base. Fingers of smaller chela deeply grooved, and roughened for half their length.

PILUMNUS SPINICARPUS, Grant and McCulloch.

Pilumnus spinicarpus, Grant and McCulloch, Proc. Linn. Soc., New South Wales, xxxi., 1906, p. 15, pl. i., figs. 2 and 2a, and synonymy.

Seven miles north-north-east of Bowen, Queensland, 16 fathoms; E.3100; one female.

Eleven to fourteen miles north-west of Pine Peak, Queensland, 24-26 fathoms; E.3189; one female.

South 29° east of Pine Peak, Queensland; P.5330; one female, one young.

Largest specimen (E.3100), length of carapace 9.8, width 13 mm.

PILUMNUS ACER, *sp. nov.*

(Plate xxix.)

Type-locality.—Sixty to eighty miles west from Eucla, Great Australian Bight, 80-120 fathoms; E.3178; one male holotype, one ovigerous female.

Additional localities.—South-west of Eucla, about long. 127° E., Great Australian Bight, 80-120 fathoms; E.3663; one male.

Sixty to eighty miles west of Eucla, 80-120 fathoms; P.3564; one male, one ovigerous female.

Measurements.—Male holotype, total length of carapace 15.4, width without spines, measured behind the last pair, 20.4; width with spines 22.3 mm.

The gastric region and its three subdivisions are faintly outlined; a little deeper groove runs from the mesogastric region to the median sinus of the front. The dorsal surface of the carapace and appendages is covered with numerous hairs which are distinctly yellow in the specimens preserved in alcohol, and of different lengths, but on the whole rather long, and placed singly with few exceptions. The width of the front is less than half the length of the carapace; its large lobes are so deflexed that they do not show in a dorsal view, they are subtriangular, ends broadly rounded, outer slope longer than inner, edge obscurely granulate, as is also the upper margin of the orbit. This shows two small, subequal, rounded sinuses, and at the outer angle a slender spine. At the inner suborbital angle there is a slender spine springing from a conical base; on the lower margin there are also six or seven small spines or spinules, the outer of which is the largest and is separated by a V-shaped sinus from the exorbital spine. Suborbital region with one larger spine and one or two smaller spines and some spinules. Further back on the lateral border there are three slender horny spines set in larger, cylindrical sockets, from each of which spring behind the spine two or three hairs longer than the spine.

The two spines near the distal end of the arm are similar to those bordering the carapace, and are succeeded by a few spinules; lower margin with a few small tubercles,

inner margin with two unequal spines, surfaces punctate and nearly smooth. The ischium bears a few blunt spinules on inner margin. The carpus is armed with long spines (right 14, left 12) one of which is erect at the inner angle. In the male the outer surface of the large hand may be divided somewhat obliquely into two unequal parts, the upper and larger part spinous and hairy, the lower part smooth and naked; the spines are arranged in six rows and those of large size number about twenty, but toward the distal and lower borders the spines diminish in size, becoming conical tubercles. A patch of hair and blunt, spinous tubercles at base of dactylus above. The rows of spines and tubercles cover the outside of the small hand and are arranged in seven rows, of which two rows are continued slightly on the fixed finger.

In the female the larger hand is practically entirely covered outside with spines, which become smaller below.

The merus joints of the ambulatory legs have a row of several curved spines on the upper edge, the carpus has three long spines above, except in the last pair, only two.

Relationships.—This species is near *P. vestitus*, Haswell,¹⁵ having the same shaped carapace and front, a border of spines, a spine at either end of orbit, a similar arrangement of spines on chelipeds and ambulatory legs. It differs from *vestitus* in having the hairs arranged singly instead of in bunches, in the fainter areolation, narrower and more deeply separated frontal lobes, in the character of the lateral spines whose bases are cylindrical, not conical, in the spines of the wrist few and long instead of numerous and short, in the longer ambulatory legs, with one or two more spines on each merus and much longer spines on the carpal segments.

The species also has a resemblance to *P. terra-reginae*,¹⁶ which has a granulate carapace, no spine outside the orbit, wrist rough with granules instead of spines, and unarmed legs.

¹⁵ Haswell—Proc. Linn. Soc. New South Wales, vi., 1881 (1882), p. 753.

¹⁶ Haswell—*loc. cit.*, p. 752.

ACTUMNUS SETIFER (*de Haan*).

Cancer (Pilumnus) setifer, de Haan, Fauna Japon., Crust., 1835, p. 50.

Cancer (Xantho) setifer, de Haan, *op. cit.*, pl. iii., fig. 3.

Actumnus setifer, Alcock, Journ. Asiat. Soc. Bengal, lxvii., 1898, p. 202 [437], and partial synonymy.

Fifteen miles north-west of Cape Jervis, South Australia, 17 fathoms; E.4458; one female, 8.7 mm. long, 11.4 mm. wide.

Marsden Point, Kangaroo Island, South Australia, 17 fathoms; E.4465; one male, somewhat smaller than the female.

ACTUMNUS PUGILATOR, *A. Milne Edwards*.

(Plate xxvii., figs. 3-4.)

Actumnus pugilator, A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat., Paris, ix., 1873, p. 195, pl. vii., figs. 1, 1a.

Eleven to fourteen miles north-west of Pine Peak, Queensland, 24-26 fathoms; E.3192; one female, with large Rhizocephalid parasite attached under the abdomen.

Platypus Bay, Queensland, 28/7/'10; P.3526; one female, carapace 16.3 mm. long, including lobes, 22.2 mm. wide.

Platypus Bay, Queensland, 5-9 fathoms; E.6489; one male, without chelipeds.

ACTUMNUS KINGSTONI, *sp. nov.*

(Plate xxx.)

Type-locality.—Forty miles west of Kingston, South Australia, 30 fathoms; E.4435; one female, thin shell, holotype.

Measurements.—Female holotype, length of carapace 14.2, width of same 19.2, fronto-orbital width 12.3, width of front, between antennæ, 6.3 mm.

Description.—Carapace moderately convex from side to side, and not strikingly so from front to back; covered with soft, uneven, and rather short hairs, which do not conceal the unevenness of the surface below; interregional grooves deep; gastric region divided into three; two areoles on the anterior branchial region. Middle lobes of front oblique, separated by a deep, narrow notch, edge sparsely and minutely spinulose; outer tooth triangular, tipped with a white spinule and separated by a right-angled sinus from the blunt, inner angle of the orbit. Upper margin of orbit hairy, feebly bi-emarginate, a small tooth tipped with a white spinule at outer angle; below this a broad V-sinus; lower margin sparsely spinulose; outer half transverse, inner half advancing gradually to the spine-pointed inner angle. A subhepatic spine a little longer than the outer orbital one. Behind it three conical, curved spines with sharp white tips.

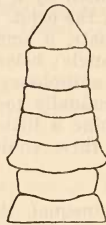
Chelipeds of female unequal, the left palm two-thirds as high as the right; the exposed surface is hairy, except on the fingers; merus with two spines above, at, and near the distal end, upper and lower edges obscurely roughened, proximal end of inner margin as well as the inner margin of the ischium spinulose. The carpus and upper proximal half of the manus are armed with strong and rather sparse spines, which form the centres of clusters of hairs; on the carpus four or five of the spines run along the distal margin and the largest one is at the inner angle; on the lower, distal half of the manus the spines become smaller, more tuberculiform, and more numerous, reaching quite under the lower surface and part way on the immovable finger; this finger of the major chela is much broken, its lower line is continuous with the horizontal line of the palm until near the tip, which bends gradually upward; the dactylus has a deep groove a little below and parallel to the upper margin, the basal two-fifths of its upper surface is spinulose. The immovable finger of the minor chela is slightly deflexed before it turns upward at the tip; the spinulation and hairiness of the fingers are more extensive than in the larger chela.

Ambulatory legs covered with hairs like those on the carapace and also long hairs which are disposed chiefly along the margins.

ACANTHODES ARMATUS, *de Haan*.

(Plates xxxi.-xxxii., fig. 1 and Fig. 3.)

Cancer (Acanthodes) armatus, de Haan, Fauna Japon. Crust., 1835, p. 52, pl. B (part), pl. iv. Doflein, Abh. k. bayer. Akad. Wiss., Cl. ii., xxi., 1902, p. 661, pl. ii.

Fig. 3.—Abdomen of *Acanthodes armatus*, male.

South-west of Eucla, long $126\frac{1}{2}^{\circ}$ E., Great Australian Bight, 130-190 fathoms; E.3674; one male; carapace, length 34.3 mm., width 38.1 mm.

South-west of Eucla, about long. 127° E., Great Australian Bight, 80-120 fathoms; E.3664; one young female; carapace, length 19.4 mm., width 21.5 mm.

Sixty to eighty miles west from Eucla, Great Australian Bight, 80-120 fathoms; E.3179; one young male; carapace, length 16.3 mm., width 18.8 mm.

The measurements do not include spines.

The smallest crab is very hairy and *Pilumnus*-like; hairs long and numerous, without concealing the surface. The hairs lessen with the growth of the animal, and in the larger male are rather scanty on the carapace. On the antero-lateral margin there are four long primary spines, the first of which is at the orbital angle; in the interspaces are three shorter spines, the first one a little below the marginal line. Above and subparallel to this row there is an irregular row of seven spines of which the first is near the orbit, the second is below the line, the fourth is largest, the seventh is opposite the post-lateral margin. In

addition there are three spines in a triangle on the epibranchial region and two on the hepatic region. There are in all nine gastric spines, in transverse series; two on each epigastric lobe, and on each protogastric lobe, and in line with the latter, a small mesogastric spine. Frontal marginal spines six, the middle pair largest, the outer pair situated at the angle of the orbit; behind them there is a row of four spines. There are two supraorbital spines besides the three already mentioned; suborbital spines five, the inner one much the longest, the others diminishing in size. Post-lateral regions rough with short spinules. A row of tubercles above the posterior margin.

Chelipeds unequal in all the specimens, but not much so; the armature is strong and similar. The spines of the legs are slenderer.

In the three small specimens handled the spines retain about the same proportion to the size of the crab. In the type figured (about natural size) by de Haan, *loc. cit.*, which is a female, not a male, as labelled, the spines of the appendages and of the margin of the carapace maintain about the same relative size as in the young, but the dorsal spines are reduced in size and the hairs of the carapace seem to have disappeared. Both chelæ are spinous as in the young.

In Doflein's figure (*loc. cit.*) which is of a much larger specimen, a male 15 cm. wide, all the spines are much reduced, some of them to spinules; the major cheliped has increased enormously while the minor one has remained stationary; the major chela is nearly smooth.

This species had not before been taken outside of Japanese waters.

Subfamily ERIPHIINÆ.

TRAPEZIA CYMODOCE (*Herbst*).

Cancer cymodoce, Herbst, Naturg. Krabben u. Krebse, iii., part 2, 1801, p. 22, pl. li., fig. 5.

Trapezia cymodoce, Alcock, Journ. Asiat. Soc. Bengal, lxvii., 1898, p. 219 (454), and synonymy.

North-west Island, off Rockhampton, Queensland; E.4517; one male, one ovigerous female.

Family PORTUNIDÆ.

Subfamily CARCINIDINÆ.

NECTOCARCINUS INTEGRIFRONS (*Latreille*).

Nectocarcinus integrifrons, Haswell, Cat. Austral. Crust., 1882, p. 81, and synonymy.

Without locality; E.6493; one young male, 11.6 mm. wide.

The front of this species has a slight median emargination, which in the small specimen in hand is relatively larger than in well-grown specimens.

NECTOCARCINUS TUBERCULOSUS, *A. Milne Edwards*.

Ann. Sci. Nat. Zool. (4), xiv., 1860, p. 220; Arch. Mus. Hist. Nat., Paris, x., 1861, p. 405, pl. xxxvii.

Bay of Fires, Tasmania; E.6082; one male, with carapace 63 mm. long and 81.7 mm. wide.

Originally described from Tasmania.

Subfamily PORTUNINÆ.

PORTUNUS (PORTUNUS) SANGUIOLENTUS (*Herbst*).

Neptunus sanguinolentus, Alcock, Journ. Asiat. Soc. Bengal, lxxviii., 1899, p. 32 [500], and synonymy.

Thirteen miles north by west of Double Island Point, Queensland, 25-26 fathoms; E.2051; one female. E.2052; one large male. P.2397; one very large male, 65.6 mm. long by 151.7 mm. wide.

The two males are uncommonly large specimens.

PORTUNUS (PORTUNUS) PELAGICUS (*Linnaeus*).

Neptunus pelagicus, Alcock, Journ. Asiat. Soc. Bengal, lxxviii., 1899, p. 34 [502], and synonymy, except *Neptunus trituberculatus*.

Thirteen miles north by west of Double Island Point, Queensland, 25-26 fathoms; E.2041; one large female, not mature, 59.6 mm. long, 129 wide (allowing for tip of left spine, which is broken off); granules high and numerous, set in dense pubescence.

Platypus Bay, Queensland, 5-9 fathoms; E.3108; one young male, half grown, carapace very pubescent, largely obscuring the granules.

Southern Queensland; E.3138; one very large male, 84.7 mm. long, 165.8 wide; granules of carapace distant, pubescence scanty, one small specimen of *Balanidæ* encrusting. P.3539; one large male, 72 mm. long, 149 wide; granules higher and a little more numerous than in E.3138, partly obscured by pubescence.

CHARYBDIS (CHARYBDIS) NATATOR (*Herbst*).

Charybdis (Goniosoma) natator, Alcock, Journ. Asiat. Soc. Bengal, lxxviii., 1899, p. 61 [529], and synonymy.

Seven miles south-south-east of Double Island Point, Queensland, 32-33 fathoms; E.2036; one male. Front deformed, second of the eight frontal teeth (counting from the left) somewhat reduced, sixth tooth showing only a very short stump; distal tooth of outer row on top of major manus wanting.

Platypus Bay, Queensland, 5-9 fathoms; E.3110; one female.

CHARYBDIS (CHARYBDIS) INCISA¹⁷, *sp. nov.*

(Plate xxxiii.)

Type-locality.—Off Point Inskip, Great Sandy Strait, Queensland, 10 fathoms; E.3151; one ovigerous female, holotype.

Measurements.—Female holotype, total length of carapace 17.3, extreme width 26, width at base of spine at lateral angle 23, fronto-orbital width 18, width between orbits 10.2 mm.

Description.—Belongs to the subgenus *Charybdis*, in which the antennal flagellum is excluded from the orbit, the ridge that bounds the dorsum posteriorly forms a curve with the postero-lateral borders, the posterior border of the arm lacks a spine, and to that division of the subgenus in which there are no distinct ridges on the carapace behind the level of the last spine of the antero-lateral borders.

¹⁷ *Incisus*, cut into, referring to the cut into the first lateral tooth to form the second.

Three ridges present on carapace, one between the spines of the last pair, which is thrice interrupted, two gastric ridges, the posterior of which is interrupted at the middle, while the anterior one is broadly interrupted. Front cut into six rounded teeth, not including the inner supra-orbital angles; the middle two are slightly more prominent than the next pair, which are wider and somewhat oblique on their inner slope; outer pair least advanced, narrow and deeply separated from the second pair. Antero-lateral borders cut into six teeth, five of which are spiniform and similar, the sixth one a little longer. The second tooth is very small, dentiform, and is not salient beyond the outer slope of the first tooth, of which it seems to form an integral part. Orbit with a slight dorsal inclination; the major diameter is about two-fifths as wide as the inter-orbital distance; inner end of lower margin in the form of a broad, blunt tooth. A granular ridge on lobule at outer angle of basal segment of antenna.

Chelipeds of female stoutish, hairy on the depressed portions of the exposed surfaces. Three enlarged spines on anterior border of arm. Wrist with granular costæ on upper and outer surfaces, the inner angle strongly spiniform, three spinules near outer angle. Hand with five granular costæ, and on the upper surface five spines. Merus of last leg over twice as long as wide; posterior border of propodus spinous.

Relationships.—The species looks much like *C. spinifera* (Miers)¹⁸, but the latter has a wider carapace, the median pair of frontal lobes are not narrower than the submedian pair, the second tooth of the antero-lateral margin is of greater size and prominence, and the carpus of the last pair of feet has a strong spine on its posterior margin¹⁹, and the propodus is unarmed.

¹⁸ Miers—Rept. Zool. Coll. "Alert," 1881-2, London, 1884, Crust., p. 233, pl. xxiii., figs. C and c.

¹⁹ Dr. Calman kindly examined the type of *spinifera* and sent sketches of the frontal teeth and the natatory leg for comparison.

CHARYBDIS (GONIOHELLENUS) TRUNCATA (*Fabricius*).

Charybdis truncata, Rathbun, Proc. U.S. Nat. Mus., xxvi., 1902, p. 27, and synonymy. Not *Charybdis* (*Gonioneptunus*) *truncata*, Alcock, Journ. Asiat. Soc. Bengal, lxviii., 1899, p. 67 [535].

Seven miles north-north-east of Bowen, Queensland, 16 fathoms; P.3522; one ovigerous female. E.3103; two ovigerous females.

Platypus Bay, Queensland, 5-9 fathoms; E.3109; one ovigerous female.

Platypus Bay, Queensland; July 28, 1910; P.3524; one male.

The females are sensibly narrower than the male.

Subtribe OXYSTOMATA.

Family LEUCOSIIDÆ.

MEROCRYPTUS LAMBRIFORMIS, *A. Milne Edwards*.

(Plate xxxii., figs. 2-3.)

Merocryptus lambriformis, A. Milne Edwards, Journ. Mus. Godeffroy, iv., Hamburg, 1873, p. 85, pl. xiii., figs. 1-1c. Whitelegge, Mem. Austral. Mus., iv., 1900, p. 162, and synonymy.

East of Bass Strait, 70-80 fathoms; E.4822; two males, four females (one ovigerous).

Twenty miles east of Babel Islands, Bass Strait, 65-70 fathoms; E.5162; one male, one female.

East of Babel Islands, Bass Strait, about 70 fathoms; E.5193; eleven males, thirteen females (four ovigerous).

Sixty to eighty miles west from Eucla, Great Australian Bight, 80-120 fathoms; E.3169; one male.

Carapace of largest male (E.5193) 10.8 mm. in total length, 14.3 mm. in total breadth. The same measurements for the female are 14.8 and 19.3 mm.

The protuberances of the carapace are more striking in the male than in the female. The cardiac prominence is conical in the male, dome-shaped in the old female; the gastric projections are of similar shape in the sexes, but longer and nearer to each other in the male. In the male the teeth of the posterior margin are larger and occupy the whole of the margin, in the female they are separated by a wide interspace. Frontal sinus deeper cut in male than in female.

In both sexes there are visible in dorsal view three small, acute teeth below the lateral border of the carapace, one on the subhepatic region and two just in front of the branchial wing.

EBALIA TUBERCULOSA (*A. Milne Edwards*).

(Plate xxxv., figs. 1-2.)

Persephona tuberculosa, A. Milne Edwards, Journ. Mus. Godeffroy, iv., Hamburg, 1873, p. 86.

Phlyxia granulosa, Haswell, Proc. Linn. Soc. New South Wales, iv., 1880, p. 54, pl. vi., fig. 3.

Ebalia tuberculosa, Miers, Challenger Rept., Zool., xvii., 1886, p. 306, pl. xxv., figs. 1, 1a. Whitelegge, Mem. Austral. Mus., iv., 1900, p. 161. Grant, Proc. Linn. Soc. New South Wales, xxx., 1905, p. 315.

Off Gabo Island, Victoria, about 200 fathoms; E.5197; three males, one female.

South-east of Cape Everard to south of Gabo Island, Victoria, 70-80 fathoms; E.6092; one ovigerous female. E.6093; one male.

South-east from Cape Everard, Victoria, 70-80 fathoms; E.6173; two females.

South of Cape Everard, Victoria, 80 fathoms; E.6165; one male, two females.

South and south-west of Mt. Cann, Victoria, 70-100 fathoms; E.6113; seven males, eight females (one ovigerous).

Forty miles south-south-west of Mt. Cann, Victoria, 70 fathoms; E.6484; three males, three females (one ovigerous).

East of Bass Strait, 70-80 fathoms; E.4821; fourteen males, eight females (two ovigerous).

Twenty miles east of Babel Islands, Bass Strait, 65-70 fathoms; E.5160; seven males, twenty females (eight ovigerous).

East of Babel Islands, Bass Strait, about 70 fathoms; E.5192; two males, six females (two ovigerous).

Sixty to eighty miles west of Eucla, Great Australian Bight, 80-120 fathoms; E.3170; two females. P.3556; one male.

Total length of male carapace (E.6484) 9.3, width 9 mm. Length of female (E.5160) 7.8, width 7.7 mm. Length of smallest ovigerous female (E.6484) 5.5 mm.

Variation.—Whitelegge (*loc. cit.*) mentions the variability in the granulation. Besides the varieties which he observed we have some specimens, part of E.4821, in which, regardless of sex, all the granules of the carapace are flat and disc-like, but many of them are as if crowded up to a higher level, making a very uneven surface. As a rule the carapaces with this surface have higher and rougher protuberances, while the smooth, evenly paved carapaces have low, smoothly rounded protuberances which more often in the female than in the male, may be almost obsolete on the branchial regions. Milne Edwards (*loc. cit.*) may have described such a specimen, as he does not mention branchial tubercles.

Regardless of the above characters, the posterior lobes are shallow in the female, protuberant in the male.

PHLYXIA INTERMEDIA, Miers.

Ebalia (Phlyxia) intermedia, Miers, Challenger Rept., Zool., xvii., 1886, p. 308, pl. xxv., figs. 2-2c.

Off Marsden Point, Kangaroo Island, South Australia; E.4518; one ovigerous female; length of carapace, between tips of spines, 7.8 mm.

Oyster Bay, Tasmania, 26 fathoms; E.5186; one immature female, length of carapace 10.2 mm.

In the larger specimen the posterior margin is straight; in the smaller one it is slightly convex; the two broad teeth thus formed are very obtuse angled. As Miers says, the largest of the lateral marginal tubercles is on the postero-lateral margin; of the smaller tubercles one is at the widest part of the carapace, forming a lateral angle, and another nearly half way to the hepatic protuberance. There is a suggestion of another tubercle in a slight marginal swelling a little behind the lateral angle. The only dorsal tubercle is that on the intestinal region in front of the posterior spine.

MYRA FUGAX (*Fabricius*).

Myra fugax, Alcock, Journ. Asiat. Soc. Bengal, lxx., 1896, p. 202, and synonymy. Ihle, Siboga-Exped., Monog. xxxix^b2., 1918, p. 256, and synonymy.

Twenty miles north-east of Cape Gloucester, Queensland, 35 fathoms; E.3119; one female.

PHILYRA MURRAYENSIS, *sp. nov.*

(Plate xxxiv.)

Type-locality.—Off Murray River mouth, South Australia, 20 fathoms; E.4467; one adult female, holotype.

Measurements.—Female, total length of carapace 26, length of median line from margin to margin 25, width 25.7 mm., posterior margin between tips of teeth 10.5, anterior width between tips of subhepatic teeth 4.8 mm.

Description.—The edge of the buccal cavity shows very slightly beyond the front, but the anterior end of the subhepatic facet projects well beyond the outer angle of the orbit in a thick, blunt, suberect tooth. The posterior margin of the carapace is nearly straight and at either end has a small acute tooth pointing backward.

Carapace subcircular, nearly smooth; a furrow on either side of the cardiac region, depressions behind the front and each orbit; surface obscurely granulate, granules depressed, unequal, mixed with punctæ. Sinus above cheliped broad, obtuse angled. Four small lateral marginal tubercles, one at posterior end of sinus, one over base of first ambulatory

leg and at widest part of carapace, one over second leg and a short distance behind second tubercle, fourth and largest over base of last leg. A large, pointed, median tubercle on intestinal region just over posterior margin; this margin is rough with granulation.

The subhepatic facet is almost entirely visible from above; it has a strong tooth at its postero-external angle, and the anterior half has a granulate outer margin.

Front four-toothed, teeth thick, middle pair small, separated by a rectangular sinus, outer pair broad and shallow. Upper sinus of orbit deep.

Anterior portion of outer maxillipeds granulate and hairy. Chelipeds stout, smooth to the touch, finely granulate, the granules largest on the cylindrical merus; palms of female moderately swollen, greatest width two-thirds of upper or outer length; fingers longer than palm, deflexed, tapering regularly to tips and leaving a very slight opening at base when closed.

Of the ambulatory legs the merus joints are cylindrical, the propodus sharply carinate above, dactylus carinate on either side.

The unique holotype has a very large Rhizocephalid parasite enclosed within the abdomen.

Relationships.—The species differs from all others with straight posterior margin in having an acute backward-pointing tooth at the ends of that margin. Compare remarks by Miers²⁰ on the species related to *P. rectangularis*.

Family CALAPPIDÆ.

CALAPPA LOPHOS (*Herbst*).

Calappa lophos, Alcock, Journ. Asiat. Soc. Bengal, lxx., 1896, p. 144.

Seven miles north-north-east of Bowen, Queensland, 16 fathoms; E.3095; one female.

Eight miles east of Sandon Bluffs, New South Wales, 35-40 fathoms; E.2031; one male.

²⁰ Miers—Zool. "Alert," Crust., 1884, pp. 546-547.

Male, extreme length of carapace 74.3, extreme width 115 mm.; female, extreme length of carapace 39, extreme width 53.7 mm. The specimens show a range in length from not quite two-thirds the extreme width in the old to nearly three-fourths the extreme width in the half grown.

The marginal teeth in the old male resemble those figured by de Haan²¹.

In the small female, the lateral teeth of the wings of the carapace are shallow and obtuse angled; the posterior margin of the last of these teeth is shorter than the corresponding margin of the adjoining tooth of the posterior border of the carapace. The reverse is true in the old male. These characters are varietal and not sexual.

MATUTA PLANIPES (*Fabricius*).

Matuta planipes, Fabricius, Ent. Syst., Suppl., 1798, p. 369; Rathbun, Proc. U.S. Nat. Mus., xxvi., 1902, p. 30.

Matuta lunaris, Alcock, Journ. Asiat. Soc. Bengal, lxx., 1896, p. 161, not *Cancer lunaris*, Herbst, 1783.

Off Point Inskip, Great Sandy Strait, Queensland, 10 fathoms; E.3152; one large male.

Family DORIPPIDÆ.

DORIPPE DORSIPES (*Linnaeus*).

Dorippe dorsipes, Alcock, Journ. Asiat. Soc. Bengal, lxx., 1896, p. 277, and synonymy.

Platypus Bay, Queensland, 5-9 fathoms; E.3114; one female.

Twenty-five miles south-east of Double Island Point, Queensland, 33 fathoms; E.4466; one male.

Extreme length of male carapace 29, width 27.2 mm. Extreme length of female carapace 31, width 32 mm.

²¹ de Haan—Fauna Japon., Crust., pl. xx., fig. 1.

CYMONOMOPS SIMILIS, *Grant*.

(Plate xxxv., figs. 3-5.)

Cymonomops similis, Grant, Proc. Linn. Soc. New South Wales, xxx., 1905, p. 315, pl. x., fig. 1.

Off Babel Islands, Bass Strait, 50-80 fathoms; E.4818; one male, two ovigerous females.

Twenty miles east of Babel Islands, Bass Strait, 65-70 fathoms; E.5161; one male, one ovigerous female.

Largest male (E.4818), total length of carapace 6.2, width 5.8 mm. Largest female (E.4818), total length of carapace 6.6, width 7 mm.

The chelipeds of the male are similar to those of the female, but more unequal (E.4818), both chelipeds of the measured female being the size of the left or larger cheliped of the measured male. In this male the first left ambulatory leg is reduced in length considerably below that on the right side, especially noticeable in the merus. The male abdomen is very small, extremity semicircular and apparently fused with the fifth segment. Eggs large, about .6 mm. in diameter.

Subtribe DROMIACEA.

Family LATREILLIIDÆ.

LATREILLIA AUSTRALIENSIS, *Henderson*.

Latreillia australiensis, Henderson, Challenger Rept., Zool., xxvii., 1888, p. 24, pl. ii., figs. 4-4b. Whitelegge, Mem. Austral. Mus., iv., 1900, p. 165.

East of Bass Strait; E.4799; two males. E.6143; one male, and two ovigerous females.

Off Babel Islands, Bass Strait, 60 fathoms; E.6150; four males, one ovigerous female.

Twenty miles east of Babel Islands, Bass Strait, 65-70 fathoms; E.5166; one male.

South-eastern Australia; E.4401; one female.

These specimens show a variation in the length of the supraorbital spines from two-thirds as long to just as long as the ocular peduncles. They are inclined obliquely upward with a slight curve (convex dorsally), except the tip, which is straight and a little upturned.

Antennæ not so long as antennules, although they over-reach the peduncle of the latter.

Chelæ of male as long as those of female, but stouter, palm widening considerably to distal end; the fingers when closed leave an oval gape at base.

Propodus of last pair of legs half as long as carpus; dactylus, when flexed, opposed by a single spine and some spinules on the propodus.

The male has a spine on the second segment only of the abdomen.

LATREILLOPSIS PETTERDI, *Grant*.

(Plate xxxvi.)

Latreillopsis petterdi, Grant, Proc. Linn. Soc. New South Wales, xxx., 1905, p. 317, pl. x., figs. 2, 2a, 2b. McCulloch, Rec. Austr. Mus., vi.-5, 1907, p. 353, pl. lxx.

South of Gabo Island, Victoria, 120-275 fathoms; E.4396; one large male with well-developed chelæ.

Off Gabo Island, Victoria, 80-100 fathoms; E.4776; one male, medium size. E.4777; one male. E.4778; one young male.

South of Gabo Island, Victoria, 200 fathoms; E.6210; one male with well-developed chelæ.

East of Babel Islands, Bass Strait, 65-70 fathoms; E.5139; one female. E.5140; one immature female.

Off Babel Islands, Bass Strait, 50-300 fathoms; E.4786; one female. E.4787; one male, medium size. E.4788; one male, medium size. E.4789; one ovigerous female, encrusted with serpulids. E.4790; one male, medium size. E.4791; one female, immature.

East-north-east of Maria Island, Tasmania, 127-180 fathoms; E.5171; one young female. E.5172; one young female. E.5173; one young male. E.5174; one young, the smallest specimen taken.

Thirty-five miles south-east of Bruni Island, Tasmania, 150-230 fathoms; E.5128; one male, largest specimen taken. E.5129; one male. E.5130; one male. E.5131; one male with well-developed chela. E.5132; one male with rostrum abnormal, reduced to a minute spine. E.5133; one male. E.5134; one male. E.5135; one male. E.5136; one male, medium size. E.5137; one male, medium size. E.5138; one ovigerous female. E.5156; one young female.

South-east of Eucla, long. $130^{\circ} 50'$ E., Great Australian Bight, 250-300 fathoms; E.3685; one male, medium size.

South of Eucla, long. $129^{\circ} 6\frac{1}{2}'$ E., Great Australian Bight, 200-300 fathoms; E.3658; two large ovigerous females.

South-west of Eucla, long. $126^{\circ} 45\frac{1}{4}'$ E., Great Australian Bight, 190-320 fathoms; E.3691; one young male.

Seventeen and one-half miles south-east of Rame Head, Victoria, 76 fathoms; E.2234; one ovigerous female, encrusted with serpulids, sponge and polyps.

Seventeen miles south-east of Rame Head, Victoria, 76 fathoms; P.2941; one ovigerous female, with encrusting serpulids.

Largest male (E.5128): Length of carapace to tip of rostrum 82, greatest width of carapace 65, width between anterior subhepatic spines 46.3, length of eye and stalk 18.5, greatest diameter of eye 7.3, greatest length of propodus of cheliped 69.2, superior length of same 42.6, height of same 24.3, thickness of same 22.1, length of dactylus of same 32.3, approximate length of first ambulatory leg 270, approximate length of second ambulatory leg 295, approximate length of third ambulatory leg 320; approximate length of last leg 190 mm.

Largest female (E.3658): Length of carapace to tip of rostrum 56.8, greatest width of carapace 42, greatest length of propodus of cheliped 35.6, superior length of same 22.2, height of same 3.8, thickness of same 3.2, length of dactylus of same 13.6 mm.

This species was described by its author from a single small specimen only 9 mm. long. In the "Endeavour" collection there is a fine series of thirty-four specimens ranging from 18.6 to 82.4 mm. in length of carapace. Some modifications of the original description therefore need to be made to fit the adult.

The *linea anomurica* is well marked in its posterior half, except near the posterior margin; the anterior half is less distinct.

The supraocular horns possess, besides an inner sub-terminal tubercle or spinule and two large outer spines, an outer spinule further from the tip than the inner one, and may have also a dorsal spinule further back and a fourth spinule on the outer margin of the anterior of the spines. The horns are relatively longer in the young than in the old.

In the following table all the measures are of males and are taken to the bottom of the sinus between horn and rostrum:—

Reg. No.	Sex.		Carapace Length.	Rostrum Length.	Horn Length.
E.5173	Male	....	20.2	5.6	12.6
E.3691	Male	....	23.6	6.4	15.6
E.4776	Male	....	31.6	7.3	15.8
E.5135	Male	....	43	10	23
E.5131	Male	....	51.3	12	23
E.5128	Male	....	69.6	14	28

The surface of the carapace is covered with a short pubescence which is formed of single, acorn-shaped vesicles and embraces the granules and tubercles with which the carapace is roughened as well as the intervening spaces.

The chelipeds are stout in the adult male, slender in the female and young male; arms rough with tubercles and granules arranged mostly in longitudinal rows, and with a row of five spines above. Wrist furnished with larger tubercles and with granules. The palms of the female are slender and weak and remain so with age; they are almost cylindrical, very slightly flattened and of nearly uniform width, except at the articulations. The male, on the contrary, shows a slender palm, only until the carapace (including rostrum) measures about 3 cm. in length, in one case 4 cm. (E.3685). It then changes by widening gradually to the distal end (E.4788), but soon grows more swollen, at first rather uniformly so throughout its length (E.4776), at the same time being a little compressed. It then becomes more and more swollen in the middle until in the largest specimen (8 cm.) the palm is remarkably inflated, its height in the middle 24.3 mm., its thickness in the middle 22.1 mm.

In both sexes the palms are covered with unequal granules, the largest of which are arranged in irregular rows. Fingers longer in male than in female, colour black, not reaching quite to either end. In the old male the fingers gape narrowly in the basal half; in the gape the dactyl has a truncate tooth, and nearer the palm the immovable finger has a low, rounded lobe.

On the three following legs, besides the upper and lower rows of spines, there are other spines and sharp spinules or tubercles. The carpus and propodus are finely roughened with small, slender, horny spines, moving in sockets. The dactylus is armed with six rows of horny spines, two rows above reaching to the dark-coloured tip, a short row at the proximal end on the lower margin and on the inner and outer faces.

The merus of the last pair of legs has three rows of spines and some scattered spinules, the only superior spine is at the distal end. The carpus and propodus are roughened as in the preceding legs, and the propodus has besides two rows of spines between which fits the row of spines on the dactylus.

The abdomen of the male is about two-thirds as wide as that of the female. The first, second, third, fourth and sixth segments each bear a median spine or tubercle; the third, fourth and sixth segments bear also a spine on each side. In the female the terminal segment is invaginated in the penultimate, a small lobe on each side of the latter being produced, but not attached, alongside the proximal end of the terminal segment.

HOMOLA ORIENTALIS, *Henderson*.

(Plate xxxvii.)

Homola orientalis, Henderson, Challenger Rept., Zool., xxvii., 1888, p. 19, pl. ii., figs. 1, 1a. Whitelegge, Mem. Austral. Mus., iv., 1900, p. 163. Doflein, Abhand. k. bayer. Akad. Wiss., ii. Cl., xxi., iii. Abth., 1902, p. 651, pl. iv., figs. 5 and 6.

Homola barbata orientalis, Doflein, Brachyura Valdivia, vi., 1904, p. 14, pl. v., figs. 4 and 5.

Off Gabo Island, Victoria, 80 fathoms; E.4774; one young female.

Off Gabo Island, Victoria, 80-100 fathoms; E.4775; one male.

South from Cape Everard, Victoria, 80-120 fathoms; E.3135; one male. P.3538; one female.

Twenty-five miles south of Cape Everard, Victoria, 82 fathoms; E.6122; one male. E.6123; one male.

South of Mt. Cann, Victoria, 50-80 fathoms; E.4804; one ovigerous female.

South and south-west of Mt. Cann, Victoria, 70-100 fathoms; E.6101-6108; six males, two females.

Twenty miles east of Babel Islands, Bass Strait, 65-70 fathoms; E.5164; one ovigerous female.

East of Babel Islands, Bass Strait, 65-75 fathoms; E.5142; one male. E.5143; one male. E.5144; one male. E.5145; one male.

Off Babel Islands, Bass Strait, 50-300 fathoms; E.4792; one male.

Twenty miles off Babel Islands, Bass Strait, 50-70 fathoms; E.6137; one male. E.6138; one ovigerous female.

To the differences given by Doflein between typical *H. barbata* and *orientalis* may be added the shorter, broader ambulatory legs of the latter, especially noticeable in the width of the merus. No intergrading forms were noted.

Family DROMIIDÆ.

In attempting to fit the species of Dromiidæ into the genera of Borradaile's revision²² of the family, emphasis has been placed on the presence or absence of an epipodite on the cheliped, and the approximation or separation of the ends of the sternal sulci of the female. Of the four genera represented in the collection, *Dromidiopsis* and *Petalomera* have an epipodite, *Dromidia* and *Cryptodromia* have none; in *Dromidiopsis* and *Dromidia* the sternal sulci end together; in *Petalomera* and *Cryptodromia* they end apart. Some of the other characters which have been given to these genera are not dependable, such as the knobbed or ridged legs and the thorn on the dactyl of the last leg.

²² Borradaile—Ann. Mag. Nat. Hist. (7), xi., 1903, pp. 297-303.

DROMIDIOPSIS EDWARDSI, Rathbun.

Dromia caput mortuum, Milne Edwards, Hist. Nat. Crust., ii., 1837, p. 178. Not *Cancer caput mortuum*, Linnæus, 1766.

Dromidia caput-mortuum, de Man, Arch. f. Naturg., liii., i., 1887 (1888), p. 393, pl. xvii., figs. 5, 5a.

Dromidiopsis caput-mortuum, Borradaile, Ann. Mag. Nat. Hist., (7), xi., 1903, p. 299.

Dromidiopsis caput-mortuum, Ihle, Siboga-Exped., Monog. xxxixb., 1913, p. 28, and synonymy except reference to Linnæus.

Dromidiopsis edwardsi, Rathbun, Proc. Biol. Soc. Washington, xxxii., 1919, p. 197.

Seven miles north-north-east of Bowen, Queensland, 16 fathoms; E.3136; one male.

Twenty-five miles south-east of Double Island Point, Queensland, 33 fathoms; E.4473; one female.

Length of carapace of male on middle line 78.2, greatest width 82.2 mm. Length of female 24.6, width 26 mm.

The male specimen corresponds very well with de Man's description (*loc. cit.*) of a somewhat smaller male. The first antero-lateral tooth, however, is different on the two sides; on the right side it is united with the so-called second tooth in a broad, truncate lobe; on the left side it is conical, subacute, and the second tooth is obsolete.

The young female resembles the male in most respects; it has, however, a subacute tooth, instead of a lobe, on the supraorbital margin; the epistome is more prominent and the tooth at either end is acute instead of tuberculiform. The sternal sulci are as described by Ihle, *op. cit.*, pp. 28-29.

The species does not quite agree with Borradaile's definition of the genus (*op. cit.*, p. 298); the carapace is broader than long, the efferent branchial ridges though distinct are broken, the fifth leg though longer than the fourth is not nearly so long as the third, overlapping only slightly its propodal segment.

DROMIDIOPSIS EXCAVATA (*Stimpson*).

(Plate xxxviii.)

Dromidia excavata, Stimpson, Proc. Acad. Nat. Sci., Philadelphia, x., 1858, p. 239 [77]; Smithson. Misc. Coll., xlix., 1907, p. 172.

Dromia excavata, Haswell, Cat. Austral. Crust., 1882, p. 140.

Dromia ciliata, Henderson, Challenger Rept., Zool., xxvii., 1888, p. 3, pl. i., figs. 1-1c. Ihle, Siboga-Exped., Monog. xxxixb., 1913, p. 89.

Between Port Stephens and Newcastle, New South Wales, 22-60 fathoms; P.2133; one male.

Shoalhaven Bight, New South Wales, 15-45 fathoms; P.2132; one male under a compound ascidian.

Twofold Bay, New South Wales, 30 fathoms; E.6085; one male.

South of Mt. Cann, Victoria, 50-80 fathoms; E.4803; one male.

South and south-west of Mt. Cann, Victoria, 70-100 fathoms; E.6111; one female under a compound ascidian.

Bass Strait; E.1338; one ovigerous female. E.1339; one ovigerous female. E.5199; one male. E.6133; one female under a large, heavy sponge (? *Suberites*).

Twenty miles off Babel Islands, Bass Strait, 50-70 fathoms; E.6136; one male under a compound ascidian.

Off Marsden Point, Kangaroo Island, South Australia, 17 fathoms; E.802; one male, one female (male under a simple ascidian). E.4475; one male. P.2312; one female under a compound ascidian.

Fifteen miles south of St. Francis Isles, South Australia, 30 fathoms; E.4468; one female.

Bay of Fires, Tasmania, 53 fathoms; E.6162; one ovigerous female under a compound ascidian.

Largest male (P.2133): Length of carapace 31, width 33.5 mm. Largest female (E.6133): Length of carapace 29.5, width 31.6 mm. Diameter of eggs about 2 mm.

In dorsal view the transverse fringe of longish hairs across the carapace just above the hepatic regions almost conceals the front. In front view we see in a subvertical plane a little more than a quarter section of a disc, the circumference of which is the fringe of hair above mentioned, and the straight sides, also fringed, run along the outer margins of the subhepatic region to a point between the ischiums of the outer maxillipeds; this section, therefore, encloses the frontal and subhepatic regions, the orbits, the antennæ and the merus and a small part of the ischium of the maxillipeds.

At the distal end of the propodus of the last pair of legs there is a small spine at the outer base of the dactylus; on the outer surface of the propodus of the penultimate pair there are two small spines at the base of the dactylus. One of these spines on the penultimate leg may be suppressed, while sometimes there may be a second, small, supplementary spine on the last leg.

The sternal sulci of the female are convergent, and terminate on a protuberance opposite the bases of the ambulatory legs of the first pair.

DROMIDIA AUSTRALIS, *sp. nov.*

(Plate xxxix.-xl., fig. 1.)

Type-locality.—Sixty to eighty miles west from Eucla, Great Australian Bight, 80-120 fathoms; E.3165; one ovigerous female, holotype. E.3164; one immature female.

Additional localities.—South of Mt. Cann, Victoria, 55-70 fathoms; E.6077; one male.

Bass Strait; E.6132; one male covered by a large porous sponge.

Measurements.—Length of carapace of female holotype, on median line, 27.3, width 29 mm., diameter of egg 2 mm. Length of immature female (E.3164) 15.5, width 15.8 mm.

Length of carapace of male (E.6132) on median line 29.3, width 33.7 mm. The other male is larger, but the carapace is broken; it is about 35.3 mm. long.

Description of the female.—Body and legs covered with a very short pubescence; a longer fringe of hair borders the carapace, chelipeds, legs and abdomen. Cervical suture

well marked, also the short curved groove either side of the cardiac region and the median groove on the frontal region. Three frontal teeth of similar shape, acute, median tooth much depressed and little visible in dorsal view. Three orbital, sub-spiniform teeth, one inner, suborbital, two supraorbital, the outer of which is separated by a fissure from a small suborbital lobe. Antero-lateral margin leading to the orbit and not to the buccal cavity, armed with four spiniform teeth, of which the first two are largest and subequal, and the last one smallest. A slightly projecting tooth behind the notch at the cervical suture.

The basal segment of the antenna bears a flat, inward-pointing spine at its antero-internal angle. At either end of the epistome there is a small, sharp spine, while the neighbouring angle of the buccal cavity is spiniform. On the same margin where the outer angle of the maxilliped fits, there is a tubercle. When the maxillipeds are in place a subtriangular opening remains, leading to the efferent branchial channel.

Merus of chelipeds unarmed; carpus with three distal prominences; a spine on proximal half of upper margin of right palm, two pointed tubercles on left palm, a tubercle at articulation with dactylus. Fingers gaping when closed. Carpus of first and second walking legs with a small tubercle at the distal end just below upper margin. These legs are shorter than the cheliped; last leg much longer than the preceding but shorter than the second ambulatory. On the propodus of the first prehensile leg there are two long spines opposing the dactylus (which flexes between them) and two small spines on the posterior surface near the base of the dactylus. On the propodus of the last leg are likewise two small spines, but only one large spine forming a chela with the dactyl; furthermore, on the outer edge of the dactyl itself there is a spine, which is contrary to Borradaile's definition of the genus. This spine is present on the left leg but has been broken off the right leg. In the immature specimen they are well developed on both sides.

The sternal sulci meet opposite the first pair of walking legs. In the immature female their extremities are further apart and do not reach beyond the line of the walking legs of the second pair.

Description of the male.—The males have such a different aspect from the females that on first examination they were thought to be a different species. The males are larger but are not more convex with the increase in size; the additional width forms a flattened, and in the widest part, even a slightly upcurved rim, which adds to the appearance of moderate convexity. The median tooth of the front is more deflexed than in the female, and in the smaller of the males is invisible in dorsal view. The spacing of the antero-lateral teeth is not just the same as in the type female, but neither does it correspond in the two males.

The details of the antennal and buccal areas and of the chelipeds and legs are the same in the two sexes, excepting that the upper border of the palm has always two, in one case three, tubercles. In the larger male the propodus of the right last leg shows three spinules in place of the customary two. In the smaller male the right penultimate leg and the left last leg are abnormally reduced and the latter is devoid of a spine on the dactylus.

The sixth segment of the abdomen has a shallow sinus in the lateral margins.

Relationship.—Allied to *D. cranioides*, de Man,²³ which is more rotund, with furrows very ill defined, lateral teeth of front smaller, no tooth or spine at outer angle of orbit, antero-lateral margin bent down so that it is directed towards the suborbital tooth, and there is no spine on dactyl of last leg.

DROMIDIA INSIGNIS, *sp. nov.*

(Plate xl., figs. 2-3.)

Type-locality.—South and south-west of Mt. Cann, Victoria, 70-100 fathoms; E.6112; one female, holotype.

Measurements.—Female, length of carapace on median line 16.6, width 17.5 mm.

Description.—Surface, except on portions of the fingers, covered with a coarse, spatuliform pubescence, which is short and close, except on the abdomen and maxillipeds and the margins and ridges of the carapace and legs. Carapace very

²³ de Man—Journ. Linn. Soc. London, Zool., xxii., 1888, p. 208, pl. xiv., figs. 6-8.

high, its border having an antero-lateral angle on either side. Between these angles there is an irregular row of small pits or depressions in the pubescence which are to be seen only when viewed from before. A deep median depression on the frontal region; a short, deep furrow each side of the cardiac region, ending anteriorly in a pit, where it meets the well-marked cervical suture; another furrow passes behind the cardiac region and forward to the cervical notch; intestinal region depressed, from it a furrow runs laterally just in front of the posterior margin.

Median tooth of front narrow, acute, and so deflexed that only the tip is visible from above; lateral teeth widely separated, their outer margins continued by a rounded sinus to a tooth at the inner angle of the orbit; this frontal border is conspicuously fringed with long setæ. A fissure marks the outer angle of the orbit; while a triangular, pointed tooth occupies the greater part of the lower border. The anterior part of the antero-lateral margin is concave, the remainder is convex; the two parts meet at a blunt, obtuse angle. There is a slight tooth behind the cervical suture, otherwise the lateral margin is entire.

The edge of the epistome is nearly horizontal; the outer tooth is broadly triangular.

Chelipeds rather small, shorter than the first two pairs of walking legs. The carpus and manus are ornamented with about four longitudinal rows of elongated setæ which simulate ridges. The pubescence on the fingers forms a triangle on their outer faces, the margins bare and white. The propodal finger has four large prehensile teeth, two of which are terminal and fit tight against the tip of the dactylus. The dactylus is flat outside except its upper margin, which forms a raised rim.

The first two ambulatory legs are rather narrow; their carpal and propodal segments are ornamented similarly to those of the cheliped. The fourth leg is slender, much longer than the third but not so long as the second. The propodus of the third, very short, leg has at its distal end, besides the spine which forms a chela with the dactylus, three small, slender spines or spinules on the outer surface. The propodus of the last leg has a spine at each of its distal angles, that at the lower angle very little shorter than the other, which forms a subchelate arrangement with the dactylus.

The sternal sulci end not far apart on a line with the intervals between the cheliped and the next leg.

Relationships.—This species has much in common with *Dromidia spongiosa*, Stimpson²⁴, which, according to the author's figure, has no antero-lateral angle, but a regularly rounded margin; otherwise the features of the anterior and lateral margins appear to be similar. In *spongiosa* the legs of the last pair are broader, and both prehensile legs are devoid of the supplementary spines characteristic of *insignis*.

CRYPTODROMIA OCTODENTATA (*Haswell*).

(Plate xli.)

Dromia octodentata, Haswell, Proc. Linn. Soc. New South Wales, vi., 1881 (1882), p. 755; Cat. Austral. Crust., 1882, p. 140. Fulton and Grant, Proc. Roy. Soc. Victoria, n.s., xix., 1906, p. 20. Baker, Trans. Roy. Soc. S. Australia, xxxi., 1907, p. 179, pl. xxiii., fig. 4.

Off Marsden Point, Kangaroo Island, South Australia, 17 fathoms; E.800; one female. E.801; one male. E.4474; one female. P.2309; one male. P.2311; one female.

Fifteen miles south of St. Francis Isles, South Australia, 30 fathoms; E.4469; one female.

Off Sanders Bank, Kangaroo Island, South Australia, 28 fathoms; E.6271; one male.

South Australia; E.4471; one female.

This species differs from Borradaile's description of *Cryptodromia* in that the walking legs are not knobbed or ridged and there is a thorn on the outer side of the dactylus of the last leg.

The following description is taken almost entirely from manuscript prepared by Mr. A. R. McCulloch:—

"A series of eight specimens, 20-64 mm. wide, shows the same variation as noted by Baker in the armature of the antero-lateral borders of the carapace and the upper margin of the hand.

²⁴ Stimpson—Smithson. Misc. Coll., xlix., 1907, p. 171, pl. xx., fig. 1.

"The carapace is broader than long, and strongly convex. It is covered with coarse, erect hairs, which have a brush of minute lateral setæ near their tip. The cervical groove is usually distinct, sometimes rather indefinite. A median longitudinal groove between the orbits, and a broad, shallow one on each side of the cardiac region. Front cut into three teeth, of which the middle one is on a much lower plane than the others; in the smallest specimens it is directed downward, and in the other projects somewhat forward. The outer teeth form the inner orbital angle.

"The orbits have a conical tooth in the centre of their upper border, which is sharper on the young. The outer angle is prominent, sometimes forming a tooth, and below it there is a V-shaped notch which may be broad, or very narrow. Inner angle of the suborbital lobe dentiform. The antero-lateral borders are armed with four or five teeth which are variable, the small specimens having four and the larger ones four or five; in some examples the fourth tooth is replaced by a blunt lobule, while others have a small denticle at the base of the fifth tooth. Postero-lateral borders slightly convergent, and they have either a blunt tooth, or a lobule immediately behind the cervical groove.

"The subhepatic region is swollen into an obtuse pyramidal projection. The antero-external angle of the buccal cavern is spiniform, and there is a conical tubercle a little farther back. A broad spiniform tubercle projects obliquely inward and backward on the basal antennal joint, and both the inner and outer angles of the second joint are produced. The ischium of the external maxillipeds is longer than broad, and is divided anteriorly; its surface is slightly hollowed. The merus is pentagonal, and is much longer than broad, the outer surface is usually somewhat sinuous. The palp is attached below the anterior internal angle. The exopod is about three and one-half times as long as broad, and its greatest width near the base is about half that of the merus."

The inner and outer edges of the ischium and merus of the chelipeds bear rows of rounded tubercles. The inner angle of the wrist is armed with a large obtuse spine, and the antero-internal edge bears, in the larger specimens, rounded tubercles. The crests of the hands bear from one to seven similar tubercles. The last two pairs of legs

chelate. The penultimate legs always have two large spines facing the dactyli, and sometimes several other smaller spines. The last pair usually have only one large spine, that facing the dactylus; on the outer side of the dactylus a little way from the base there is a small spine, the tip of which may be broken off.

The abdomen of both sexes consists of seven free segments, and has a broad raised ridge along the middle line. The last segment in the male is triangular, and the penultimate one is deeply excavated on either side. Those of the female decrease regularly in breadth from the third to the seventh. The sternal sulci of the female end wide apart just behind and close to the articulation of the chelipeds. The eggs are very large and numerous, being 2 mm. in breadth.

PETALOMERA LATERALIS (*Gray*).

Dromia lateralis, Gray, Zool. Misc., 1831, p. 40.

Cryptodromia lateralis, Stimpson, Proc. Acad. Nat. Sci. Philadelphia x., 1858, p. 226 [64]; Smithson. Misc. Coll., xlix., 1907, p. 174, pl. xx., fig. 3. Thomson, Trans. New Zealand Inst., xxi., 1898, p. 170, pl. xx., figs. 1 and 2. Alcock, Cat. Ind. Dec. Crust., Brachyura, 1901, p. 77, and synonymy.

Petalomera lateralis, Borradaile, Ann. Mag. Nat. Hist., (7), xi., 1903, p. 301.

Sixty to eighty miles west from Eucla, Great Australian Bight, 80-120 fathoms; E.3163; one ovigerous female.

South and south-west of Mt. Cann, Victoria, 70-100 fathoms; E.6110; one male.

Twenty miles off Babel Islands, Bass Strait, 50-70 fathoms; E.6140; one female.

Length of carapace of female (E.6140) 17.2, width of same 19.7 mm.

The sternal segments of the female end far apart, opposite the first pair of ambulatory legs.

PETALOMERA LAMELLATA (*Ortmann*).

(Plate xlii., figs. 2-3.)

Cryptodromia lamellata, Ortmann, in Semon, Zool. Forschungsr. Austral. u. d. Malay. Arch., Jena. Denkschr., viii., 1894, p. 34, pl. ii., fig. 8.

East-north-east of Maria Island, Tasmania, 57-75 fathoms; E.5151; one male.

Length of carapace of male 10.3, width of same 13 mm.

The carapace is coarsely granulate near the anterior and antero-lateral margins. An epipod is present on the cheliped, and in other respects the species conforms to the definition of *Petalomera*.

PETALOMERA DEPRESSA (*Baker*).

Cryptodromia depressa, Baker, Trans. Roy. Soc. South Australia, xxxi., 1907, p. 180, pl. xxv., figs. 1-1b.

Fifteen miles south of St. Francis Isles, South Australia, 30 fathoms; E.4470; one male.

Length of carapace of male 25.6, width of same 27.3 mm.

The species has an epipod on the cheliped and is akin to *lateralis*, which Borradaile puts in *Petalomera*. *P. depressa* has certain characters contrary to his definition of the genus, viz., the walking legs are knobbed, not sharply ridged, and the sternal grooves of the female are, according to Baker, *op. cit.*, p. 181, situated between the coxæ of the chelipeds instead of between those of the ambulatory legs of the first pair.

PETALOMERA WILSONI (*Fulton and Grant*).

(Plate xlii., fig. 1.)

Cryptodromia wilsoni, Fulton and Grant, Proc. Roy. Soc. Victoria, n.s., xv., 1902, p. 61, pl. ix.

Dromia pseudogibbosa, Parisi, Atti. Soc. Ital. Sci. Nat., liv., 1915, p. 5, pl. ii., figs. 1 and 2.

Between Port Stephens and Newcastle, New South Wales, 22-60 fathoms; E.279; one male, one ovigerous female.

Shoalhaven Bight, New South Wales, 15-45 fathoms; P.2140; one female.

Thirty-three miles south-east from Green Cape, New South Wales, 470 fathoms; E.3149; one female.

Five to ten miles south-east of Rame Head, Victoria, 66-68 fathoms; E.2239; one male.

Off Cape Everard, Victoria, 80 fathoms; E.6071; one male.

South of Mt. Cann, Victoria, 55-70 fathoms; E.6078; two males.

South and south-west of Mt. Cann, Victoria, 70-100 fathoms; E.6109; one female.

From sixty miles south of Diana's Peak to about forty miles south of Mt. Cann, Victoria, 70-80 fathoms; E.6087; one male.

East of Flinders Island, Bass Strait; E.5671; two immature females.

Twenty-four miles south-south-east of Eagle Nest, Bass Strait, 45 fathoms; E.6072; one male.

Bay of Fires, Tasmania, 53 fathoms; E.6161; one young, 4.5 mm. long by 5.6 wide, under a thin, conical fragment of sponge.

Oyster Bay, Tasmania, 26 fathoms; E.5183; three males, one female.

Forty miles west of Kingston, South Australia, 30 fathoms; E.4477; one male, two females. E.4478; one female. E.4479; one male. E.4480; one male, five females.

South Australia, E.4476; three males, one female.

The following description was prepared by Mr. A. R. McCulloch:—

“All parts except the tips of the fingers and dactyli are thickly covered with tomentum.

“The carapace is much broader than long, and is convex. The tomentum forms pits and strong ridges, which define the regions very clearly, but when it is cleaned away they become less conspicuous. There is a row of small circular pits starting from between the second and third teeth of the anterolateral borders and stretching obliquely forwards, meeting between the orbits. These pits cannot be seen at all when the tomentum is taken off, but there is a distinct but flat ridge which they follow. The front is cut into three teeth, the centre one being very small, acute, and on a much lower plane than the two outer ones, which are large, obtuse and form the inner supra-orbital angle. There is a deep, or well-marked, median groove between these teeth.

"The orbits are large. There is a large tooth in the middle of the upper orbital border, which is joined by a very slight curve to the large obtuse tooth at the inner supraorbital angle; these two together form a considerable projection over the orbit. The suborbital border is denticiform, and is easily seen in a dorsal view, it being situated outside the large projection of the upper border. The outer angle seems to form a continuous line, but if the tomentum be scraped away it shows that the borders are separated by a groove. The antero-lateral borders are cut into four teeth, the first being the smallest and on a much lower plane than the other three, it being on a slightly lower level than the outer orbital angle. The second and third are large, the distance between them being distinctly less than that between the first and second or third and fourth. The latter is small, and is situated behind the cervical groove. There is a small tubercle, which may either be acute or very flat, on the ridge behind the cervical groove, and almost at the base of the fourth tooth. Postero-lateral borders are slightly convergent and are convex.

"There is a small acute tubercle on the subhepatic region situated midway between the first tooth of the antero-lateral border and the endostome, and another smaller one at the base of the suborbital lobe.

"The crest of the merus of the cheliped bears a few small granules under the tomentum. The carpus is nodular, and at the inner angle there is a sharp tubercle covered by a tuft of long silky hairs. The tomentum on the outer surface of the hand forms longitudinal ridges. Both the inner and outer surfaces of the movable and immovable fingers are strongly grooved, and along these grooves the tomentum grows. The inner surface of the hand and fingers, and the lower edge of the merus, bear the long silky hairs already mentioned. There is a space between the fingers at their base. In some specimens they meet only at the tips, while in others they meet the last half of their length. There are seven or eight teeth along their outer borders, which interlock perfectly when the fingers are closed.

"The first and second ambulatory legs bear strong spinular nodules on their carpi and propodi. Both the third and fourth pairs are flattened, and have no nodules; the fourth pair being dorsally situated."

The sternal sulci of the female end far apart in a line between the coxae of the first and second ambulatory legs.

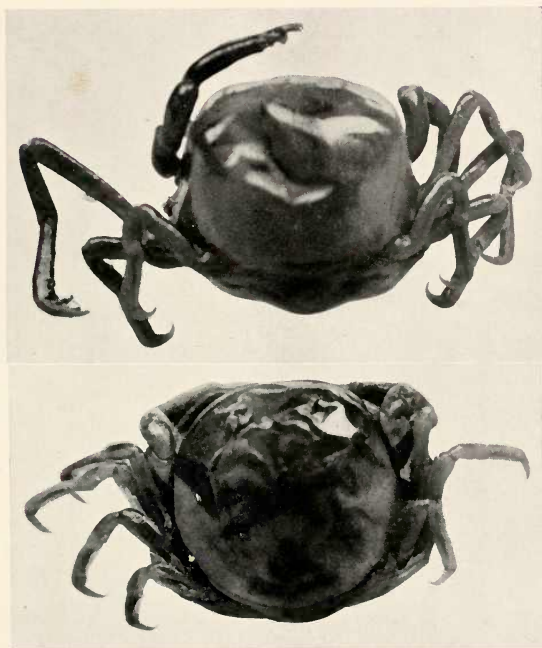
EXPLANATION OF PLATE XVI.

Pinnotheres subglobosa, Baker. Female (E.4519). Carapace
7.8 mm. wide.

Fig. 1.—Dorsal view.

Pinnotheres novæzelandiæ, Filhol. Female (E.5676).
Carapace 8.5 mm. wide.

Fig. 2.—Dorsal view.



EXPLANATION OF PLATE XVII.

Pilumnoplax heterochir (Studer). Male (E.6211). Carapace 11 mm. wide.

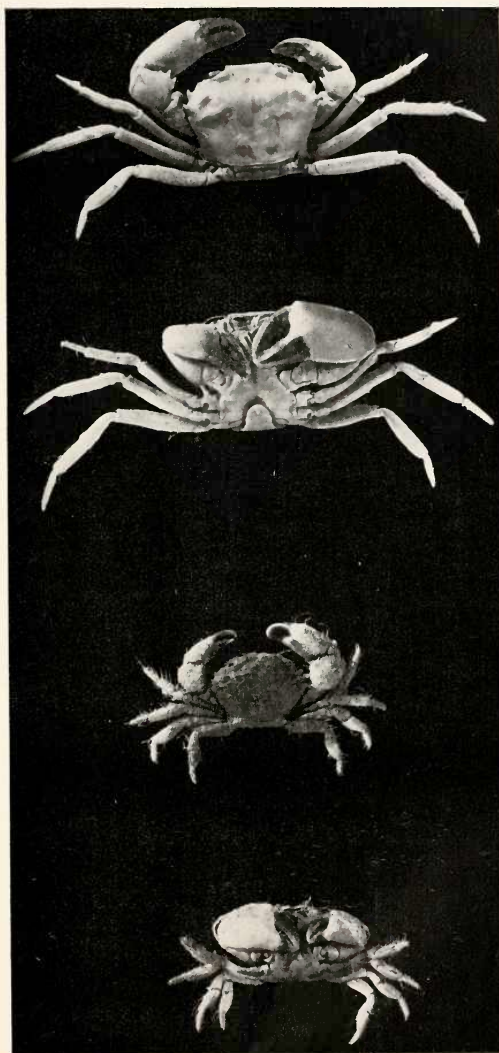
Fig. 1.—Dorsal view.

Fig. 2.—Ventral view.

Pilumnus fissifrons, Stimpson. Male (E.3184). Carapace 8 mm. wide.

Fig. 3.—Dorsal view.

Fig. 4.—Ventral view.



EXPLANATION OF PLATE XVIII.

Carcinoplax meridionalis, sp. nov. Male holotype. Carapace 30.2 mm. wide.

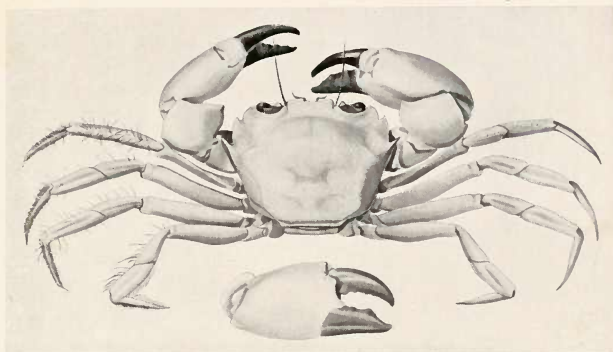
Fig. 1.—Dorsal view.

Fig. 2.—Right chela.

Fig. 3.—Ventral view.

Carcinoplax meridionalis, sp. nov. Female (E.6117). Carapace 30.4 mm. wide.

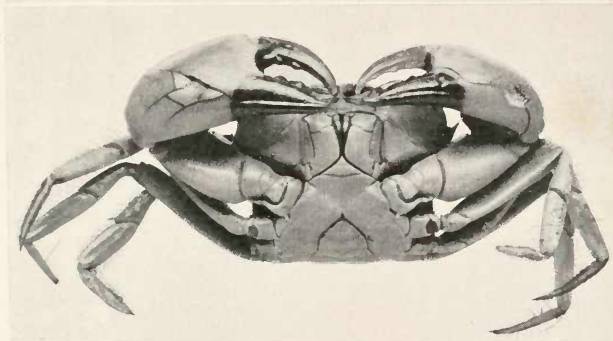
Fig. 4.—Ventral view.



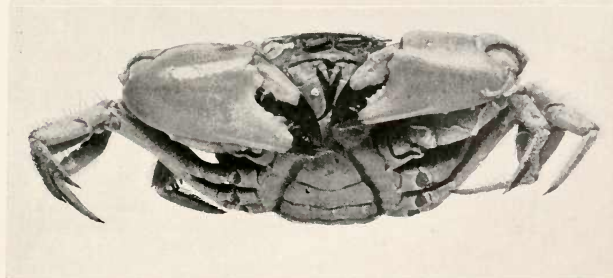
1



2



3



4

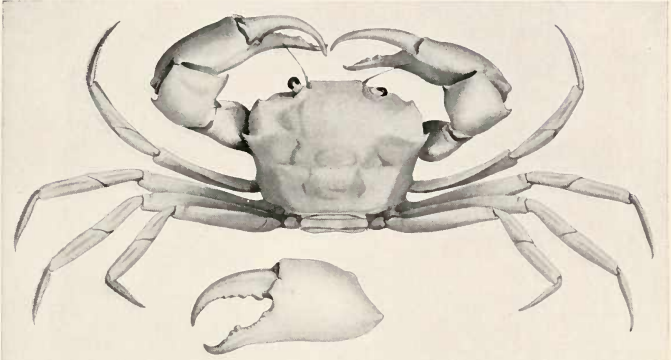
EXPLANATION OF PLATE XIX.

Carcinoplax victoriensis, sp. nov. Male holotype. Carapace 34 mm. wide.

Fig. 1.—Dorsal view.

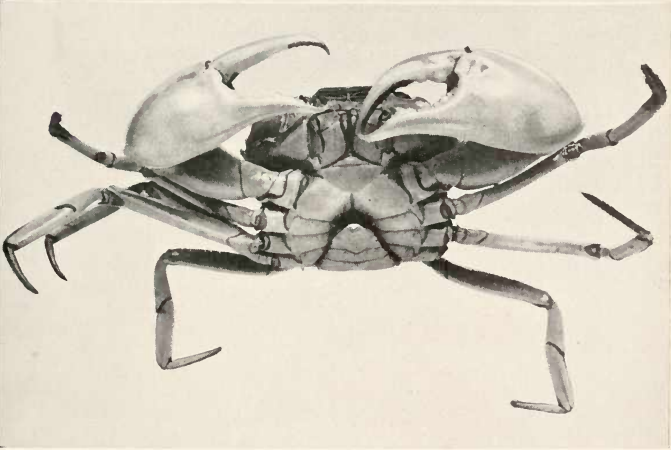
Fig. 2.—Left chela.

Fig. 3.—Ventral view.



1

2



3

PHYLLIS F. CLARKE (1-2), del.
C. R. SHOEMAKER (3), photo.

EXPLANATION OF PLATE XX.

Xantho bowenensis, sp. nov. Male holotype. Carapace
46.3 mm. wide.

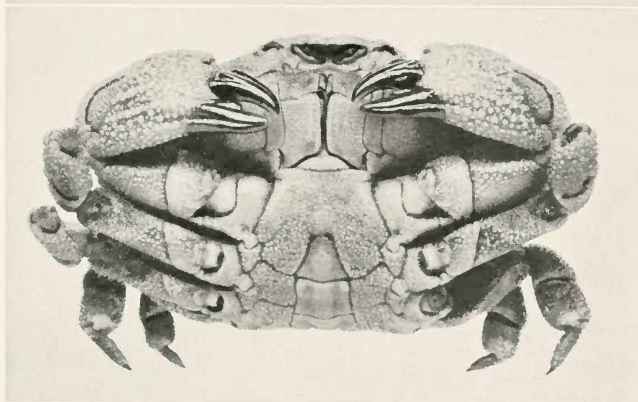
Fig. 1.—Dorsal view.

Fig. 2.—Ventral view.

Fig. 3.—Frontal view.



1



2



3

EXPLANATION OF PLATE XXI.

Actæa inskipensis, sp. nov. Male holotype. Carapace
7.7 mm. wide.

Fig. 1.—Dorsal view.

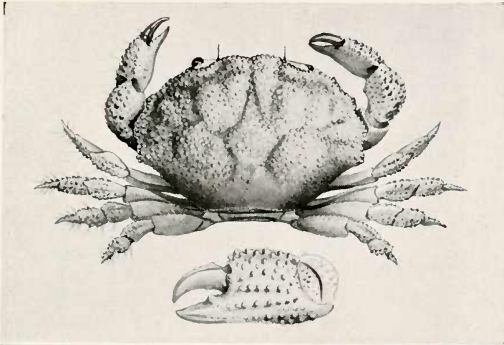
Fig. 2.—Left chela.

Fig. 3.—Ventral view.

Actæa peronii (Milne Edwards). Male (E.6086). Cara-
pace 21 mm. wide.

Fig. 4.—Dorsal view.

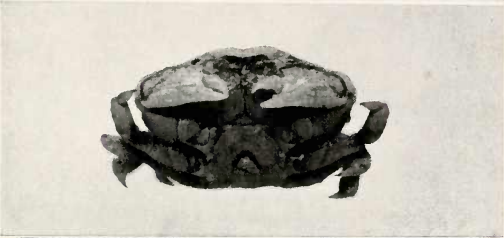
Fig. 5.—Ventral view.



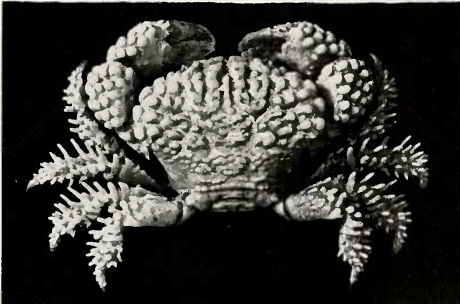
1



2



3



4



5

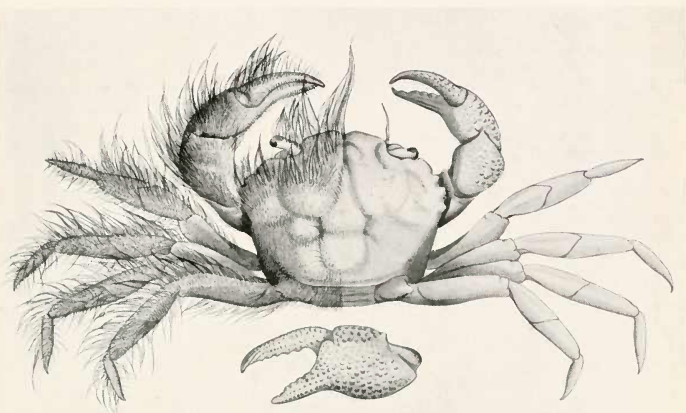
EXPLANATION OF PLATE XXII.

Pilumnus digitalis, sp. nov. Male holotype. Carapace
12 mm. wide.

Fig. 1.—Dorsal view, right half denuded.

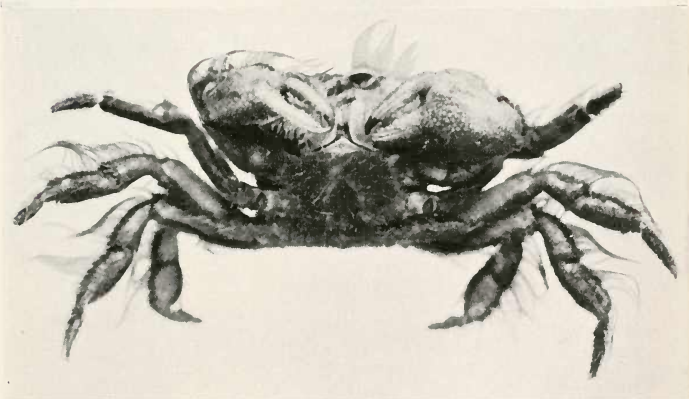
Fig. 2.—Left chela, denuded.

Fig. 3.—Ventral view.



1

2



3

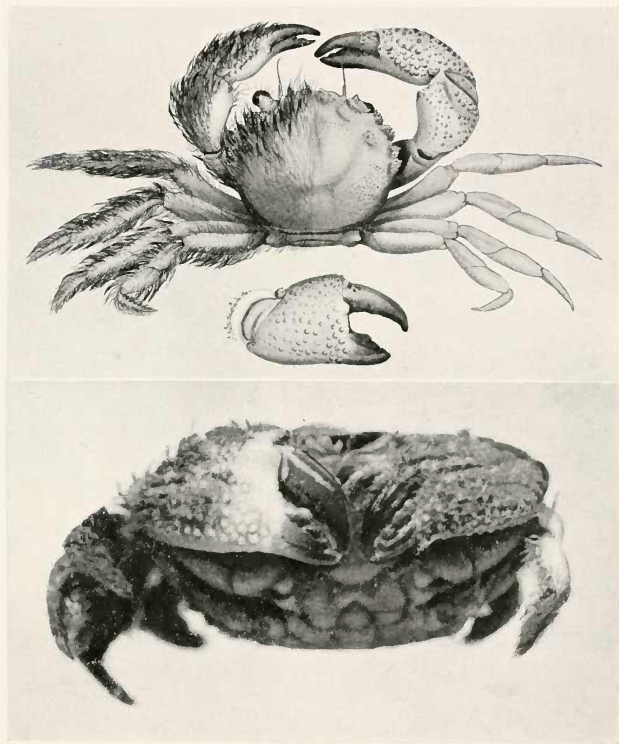
EXPLANATION OF PLATE XXIII.

Pilumnus contrarius, sp. nov. Male holotype. Carapace
13.5 mm. wide.

Fig. 1.—Dorsal view, right half denuded.

Fig. 2.—Right chela, denuded.

Fig. 3.—Ventral view.



EXPLANATION OF PLATE XXIV.

Pilumnus semilanatus, Miers. Male (P.3519). Carapace
29 mm. wide.

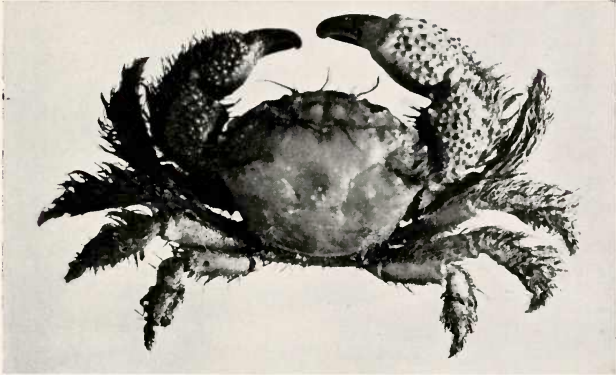
Fig. 1.—Dorsal view.

Fig. 2.—Ventral view.

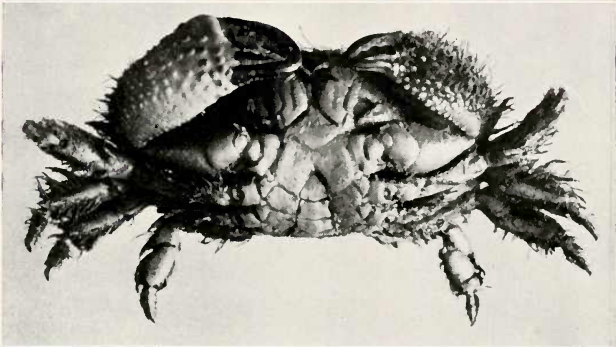
Pilumnus rufopunctatus, Stimpson. Male (E.4444). Cara-
pace 13 mm. wide.

Fig. 3.—Dorsal view.

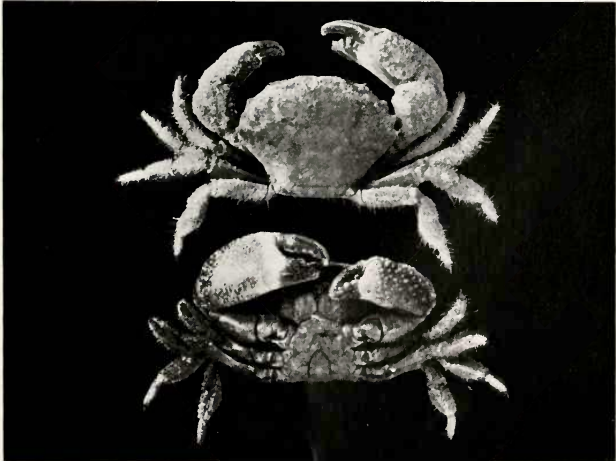
Fig. 4.—Ventral view.



1



2



3

4

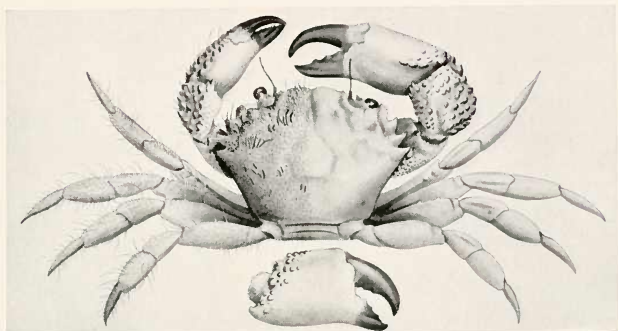
EXPLANATION OF PLATE XXV.

Pilumnus tantulus, sp. nov. Male holotype. Carapace
10.2 mm. wide, including teeth.

Fig. 1.—Dorsal view, right half denuded.

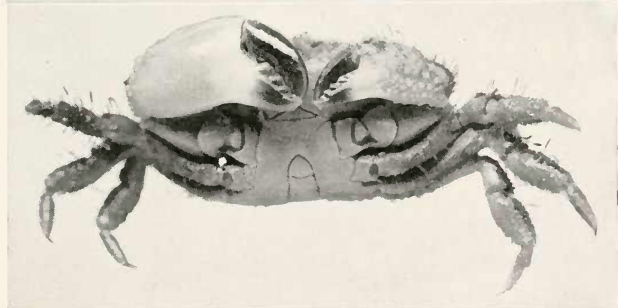
Fig. 2.—Right chela.

Fig. 3.—Ventral view.



1

2



3

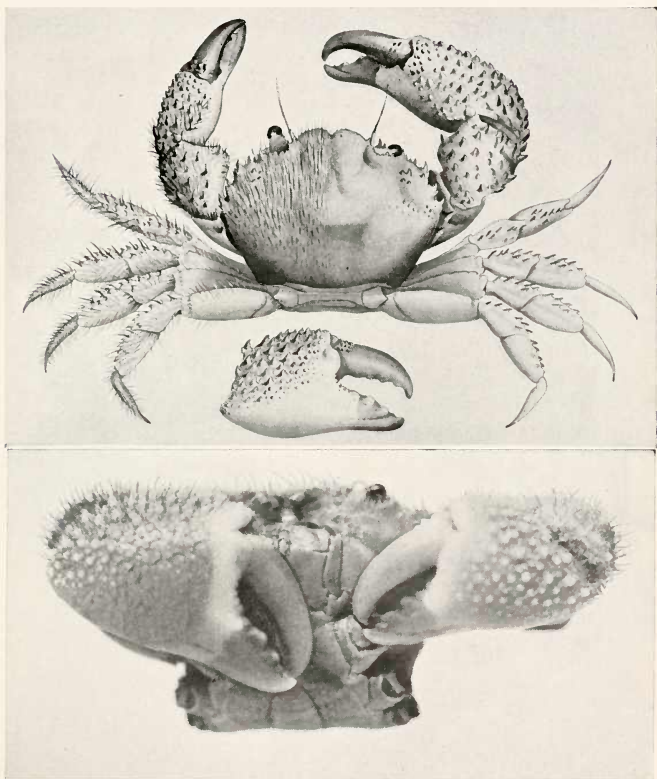
EXPLANATION OF PLATE XXVI.

Pilumnus etheridgei, sp. nov. Male holotype. Carapace 16.5 mm. wide, including spines.

Fig. 1.—Dorsal view, right half denuded. The legs, being detached from the holotype, have been drawn from another specimen of about the same size, in which they are still attached to the body.

Fig. 2.—Right chela.

Fig. 3.—Ventral view.



EXPLANATION OF PLATE XXVII.

Pilumnus tomentosus, Latreille. Male (E.4454). Carapace 31.3 mm. wide.

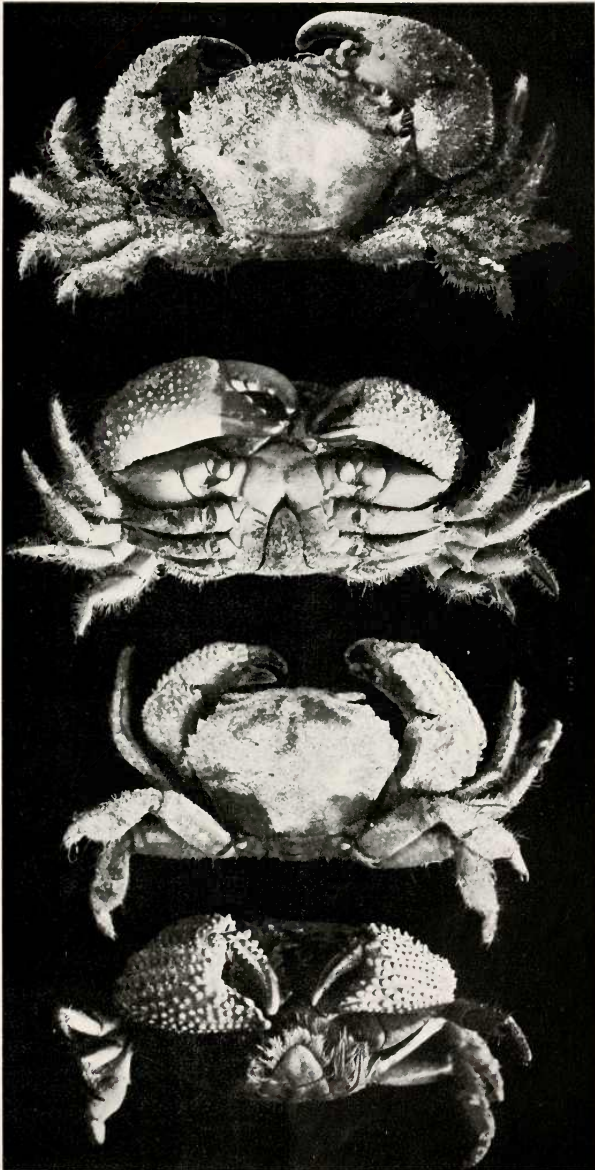
Fig. 1.—Dorsal view.

Fig. 2.—Ventral view.

Actumnus pugilator, A. Milne Edwards. Female (E.3192). Carapace 18.6 mm. wide.

Fig. 3.—Dorsal view.

Fig. 4.—Ventral view.



EXPLANATION OF PLATE XXVIII.

Pilumnus hirsutus, Stimpson. Female (E.4436). Carapace
14.1 mm. wide.

Fig. 1.—Dorsal view.

Fig. 2.—Ventral view.

Pilumnus hirsutus, Stimpson. Male (E.4436). Carapace
10.1 mm. wide.

Fig. 3.—Dorsal view.

Fig. 4.—Ventral view.



1



2



3



4

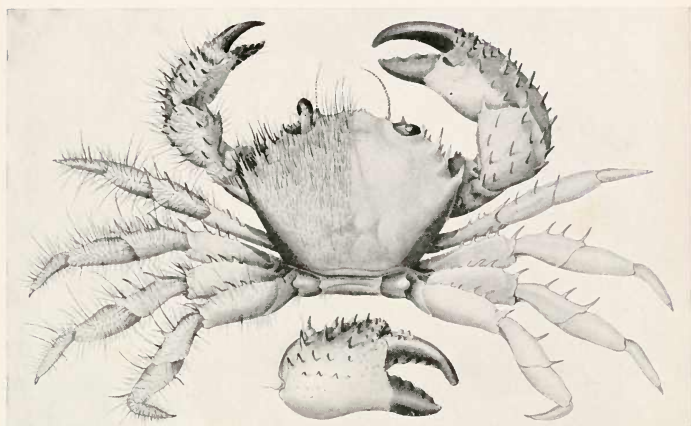
EXPLANATION OF PLATE XXIX.

Pilumnus acer, sp. nov. Male holotype. Carapace 20.4 mm. wide, spines excluded.

Fig. 1.—Dorsal view, right half denuded.

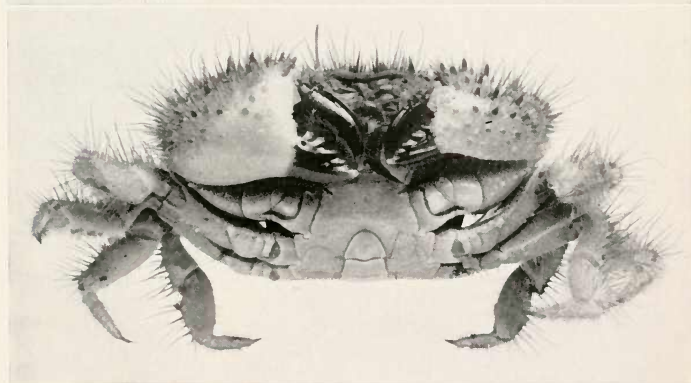
Fig. 2.—Right chela, denuded.

Fig. 3.—Ventral view.



1

2



3

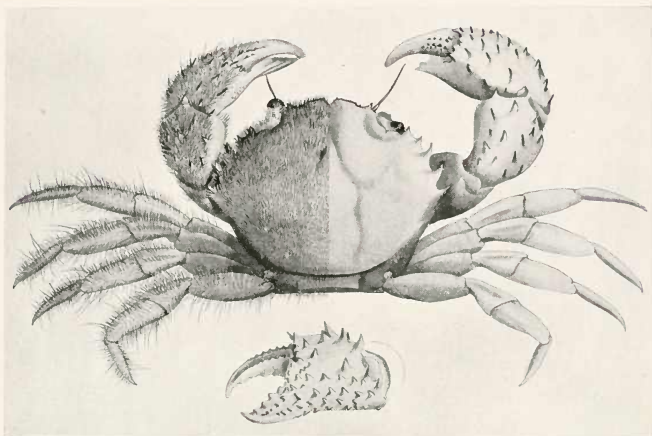
EXPLANATION OF PLATE XXX.

Actumnus kingstoni, sp. nov. Female holotype. Carapace
19.2 mm. wide.

Fig. 1.—Dorsal view, right half denuded.

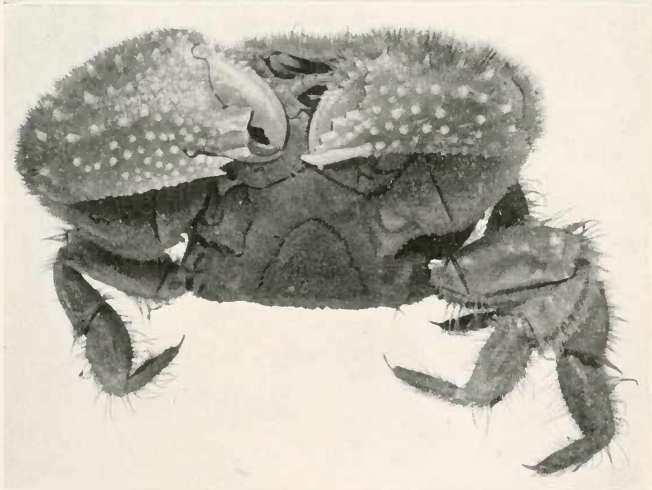
Fig. 2.—Left chela, denuded.

Fig. 3.—Ventral view.



1

2



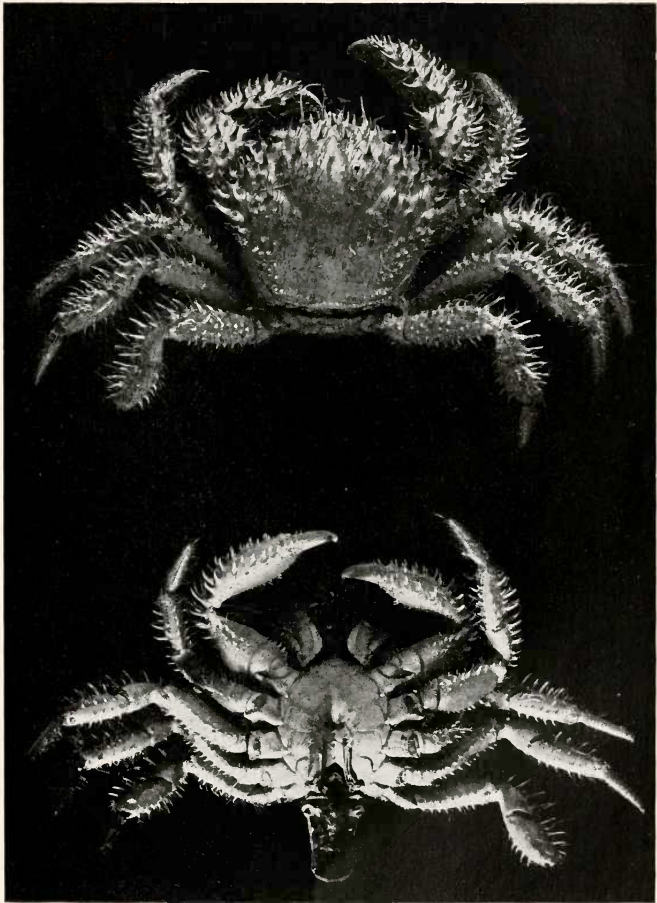
3

EXPLANATION OF PLATE XXXI.

Acanthodes armatus, de Haan. Male (E.3674). Carapace
38.1 mm. wide.

Fig. 1.—Dorsal view.

Fig. 2.—Ventral view, to show sternal openings.



1

2

EXPLANATION OF PLATE XXXII.

Acanthodes armatus, de Haan. Male juv. (E.3179). Carapace 18.8 mm. wide.

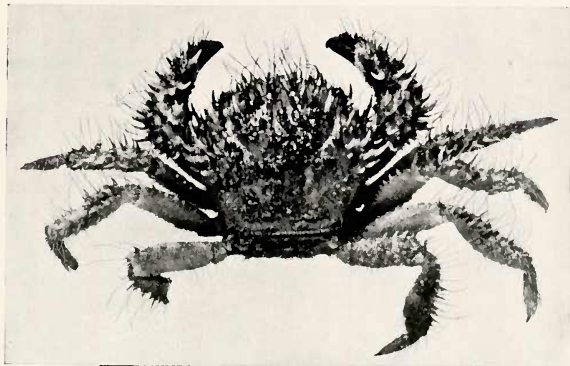
Fig. 1.—Dorsal view.

Merocryptus lambriformis, A. Milne Edwards. Female (E.5193). Carapace 19.3 mm. wide.

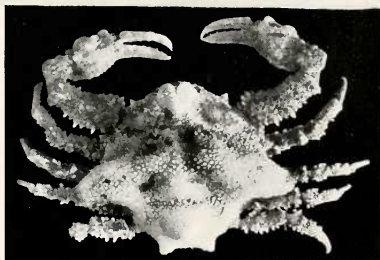
Fig. 2.—Dorsal view.

Merocryptus lambriformis, A. Milne Edwards. Male (E.5193). Carapace 14.3 mm. wide.

Fig. 3.—Dorsal view.



1



2



3

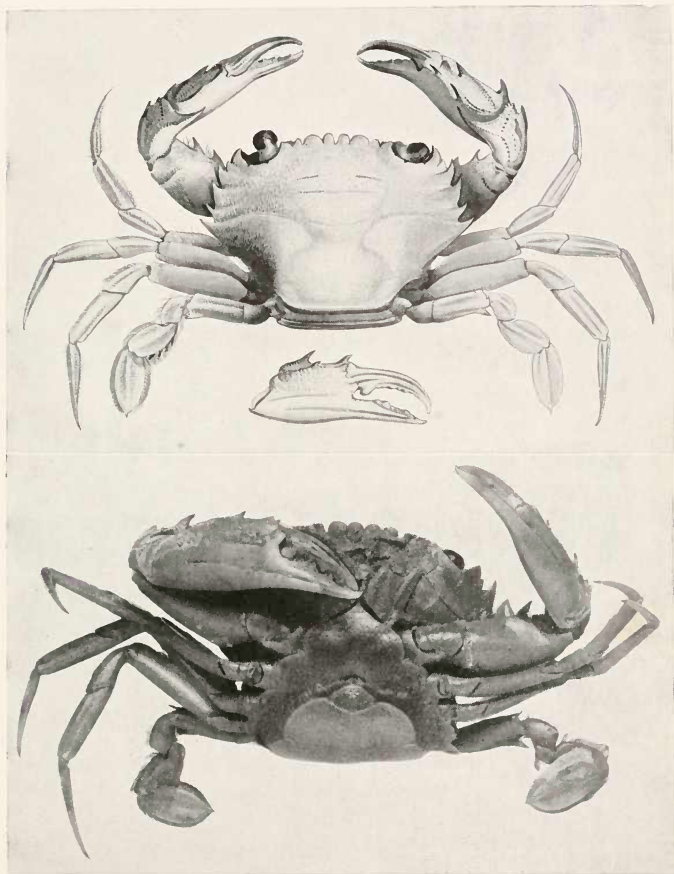
EXPLANATION OF PLATE XXXIII.

Charybdis (Charybdis) incisa, sp. nov. Female holotype.
Carapace 26 mm. wide.

Fig. 1.—Dorsal view, right half denuded.

Fig. 2.—Right chela.

Fig. 3.—Ventral view.



1

2

3

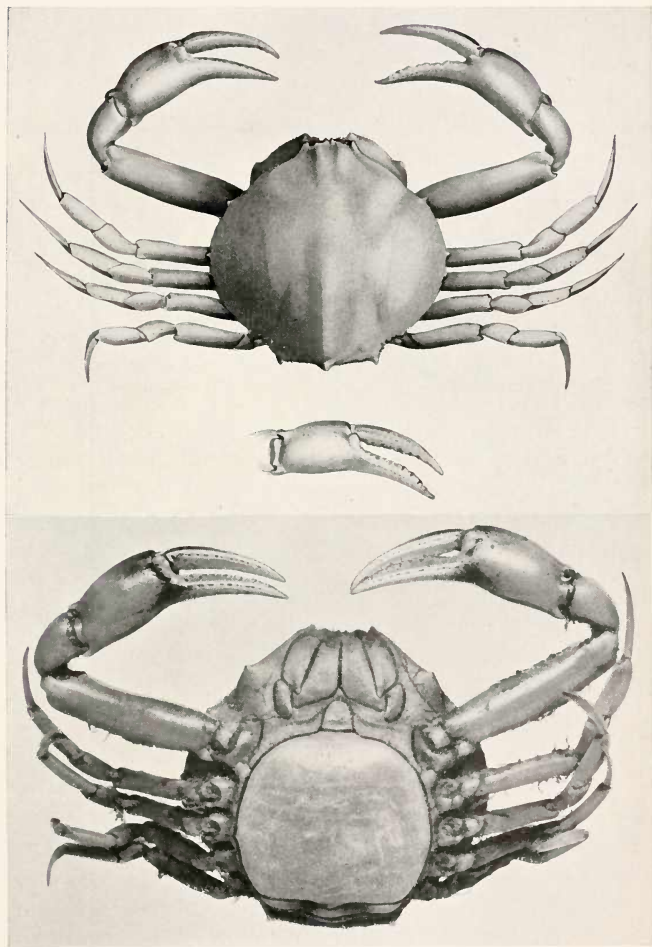
EXPLANATION OF PLATE XXXIV.

Philyra murrayensis, sp. nov. Female holotype. Carapace
25.7 mm. wide.

Fig. 1.—Dorsal view.

Fig. 2.—Right chela.

Fig. 3.—Ventral view.



1

2

3

EXPLANATION OF PLATE XXXV.

Ebalia tuberculosa (A. Milne Edwards). Male (E.5160).
Carapace 8.8 mm. wide.

Fig. 1.—Dorsal view.

Ebalia tuberculosa (A. Milne Edwards). Male (E.6484).
Carapace 9 mm. wide.

Fig. 2.—Dorsal view.

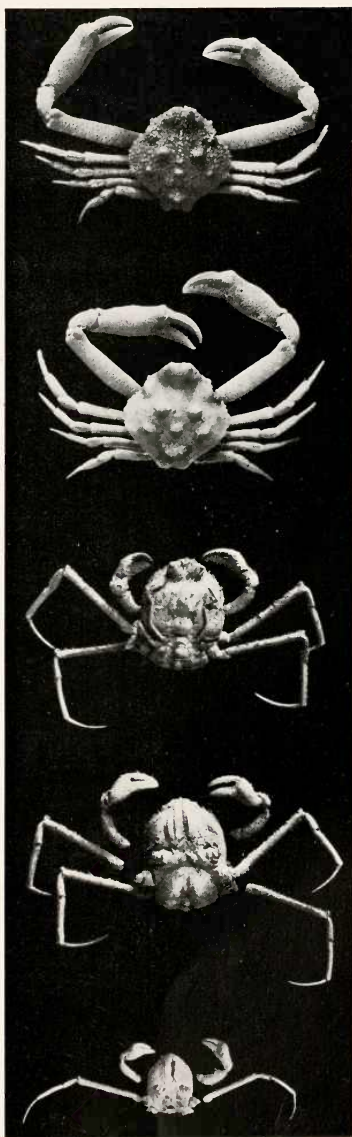
Cymonomops similis, Grant. Female (E.4818). Carapace
7 mm. wide.

Fig. 3.—Dorsal view.

Fig. 4.—Ventral view.

Cymonomops similis, Grant. Male (E.4818). Carapace
5.8 mm. wide.

Fig. 5.—Ventral view.



EXPLANATION OF PLATE XXXVI.

Latreilopsis petterdi, Grant. Male (E.5128). Carapace
65 mm. wide. Ventral view.



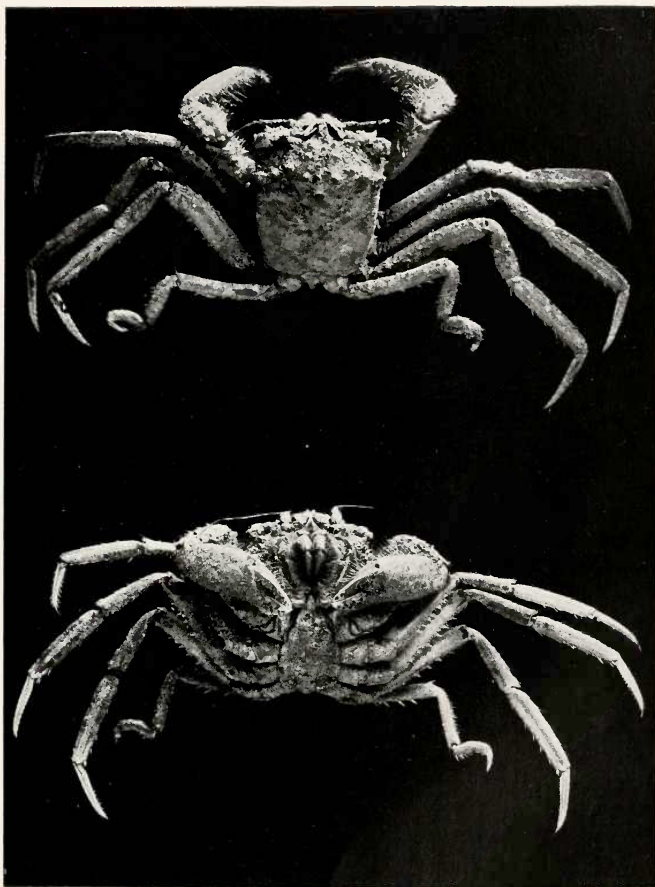
EXPLANATION OF PLATE XXXVII.

Homola orientalis, Henderson. Male (E.6137). Carapace
22.5 mm. wide.

Fig. 1.—Dorsal view.

Homola orientalis, Henderson. Male (E.5144). Carapace
27 mm. wide.

Fig. 2.—Ventral view.



1

2

EXPLANATION OF PLATE XXXVIII.

Dromidiopsis excavata (Stimpson). Male (E.5199). Carapace 32.5 mm. wide.

Fig. 1.—Dorsal view.

Fig. 2.—Ventral view.

Dromidiopsis excavata (Stimpson). Male (P.2132). Carapace 30.5 mm. wide; under a compound ascidian.

Fig. 3.—Frontal view.



1



2



3

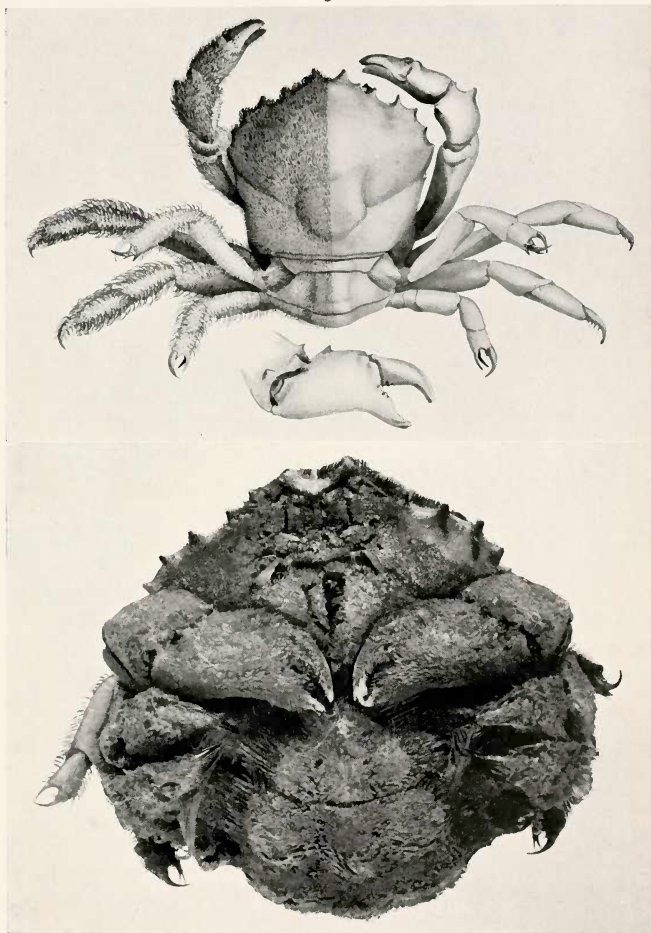
EXPLANATION OF PLATE XXXIX.

Dromidia australis, sp. nov. Female holotype. Carapace
29 mm. wide.

Fig. 1.—Dorsal view, right half denuded.

Fig. 2.—Right chela, denuded.

Fig. 3.—Ventral view.



1

2

3

EXPLANATION OF PLATE XL.

Dromidia australis, sp. nov. Male (E.6132). Carapace
33.7 mm. wide.

Fig. 1.—Dorsal view.

Dromidia insignis, sp. nov. Female holotype. Carapace
17.5 mm. wide.

Fig. 2.—Dorsal view.

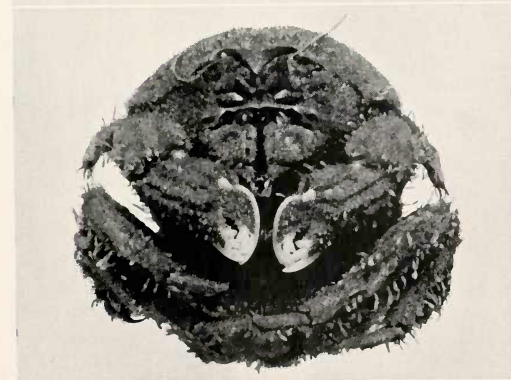
Fig. 3.—Ventral view.



1



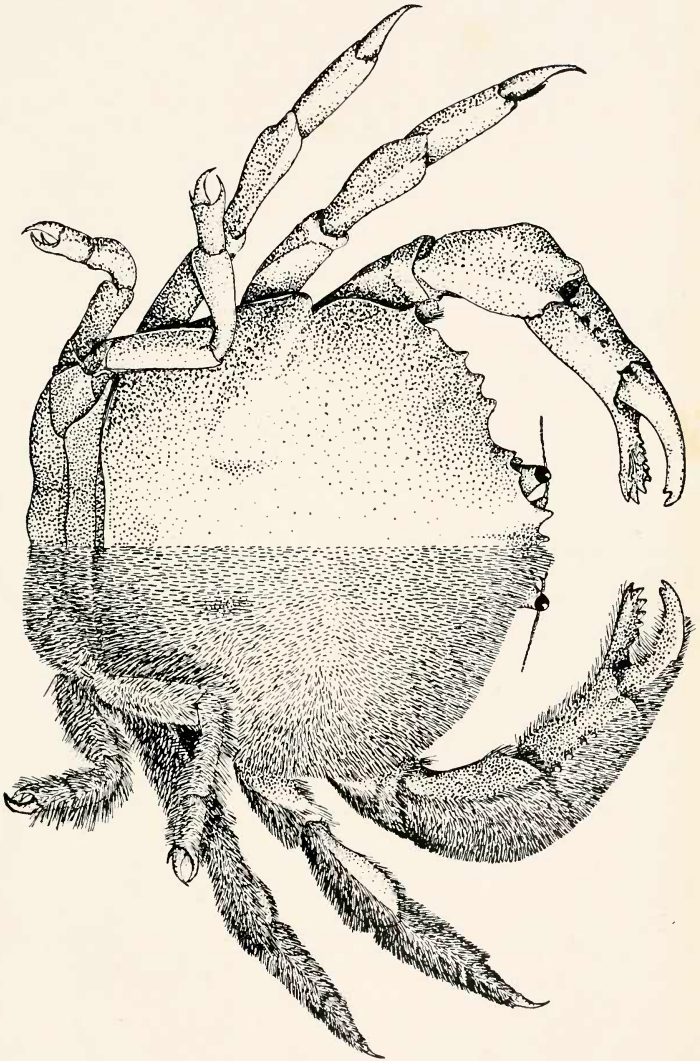
2



3

EXPLANATION OF PLATE XLI.

Cryptodromia octodentata (Haswell). Female (P.2311).
Carapace 46 mm. wide. Dorsal view, left half
denuded.



EXPLANATION OF PLATE XLII.

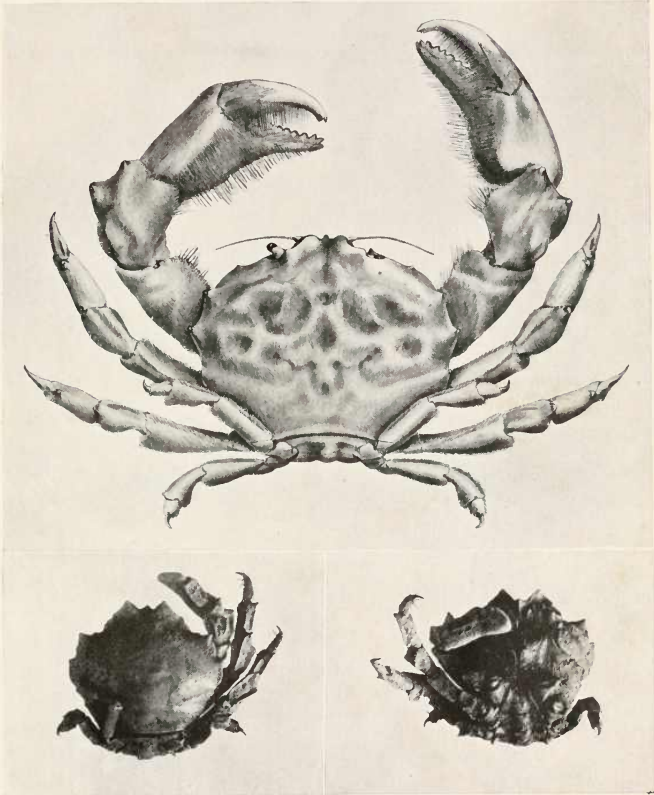
Petalomera wilsoni (Fulton & Grant). Male (E.2239).
Carapace 32.3 mm. wide.

Fig. 1.—Dorsal view.

Petalomera lamellata (Ortmann). Male (E.5151). Cara-
pace 13 mm. wide.

Fig. 2.—Dorsal view.

Fig. 3.—Ventral view.



1

2

3

J. R. KINGHORN (1), del.
G. C. CLUTTON (2-3), photos.

