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On Insect Variety, by A. H. Swinton.

Proceedings of Boston Society of Natural History, Part 2 and 3, Vol. XX.

Plants of North-west Australia, by Baron F. von Mueller, K.C.M.G., &c.

Journal of Conchological Society.

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PAPERS READ.

ON SOME NEW AUSTRALIAN BRACHYURA.

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

*Paramithrax spatulifer*, n. sp.

Carapace armed with a mesial longitudinal row of four spines ; the first two conical, acute, the first longer than the second, both situated on the posterior portion of the gastric region ; the third situated on the cardiac region, broad, antero-posteriorly compressed, and bifid ; the last, on the posterior border, broad, spatulate, heart-shaped ; two long sub-acute spines on each branchial region, the anterior directed outwards, upwards and slightly forwards, the posterior directed outwards, upwards and backwards. A compressed bifid spine on the lateral border of the branchial region. Rostrum formed of two rather slender, widely divergent cornua, each of which is bifurcate at the tip—the inner branch being much the smaller, and sometimes bifid—and has some irregular teeth along each border. Upper orbital margin produced upwards into a bifurcate process ; three post-orbital spines, the last the broadest and obliquely truncate. Basal joint of the antennæ with a tubercle at the proximal end of the outer border, a spine at its distal end, and another at the antero-internal angle. Sub-hepatic and pterygostomial regions with one or two spiniform tubercles. External maxillipedes with scattered granules and with a longitudinal raised granular line on the ischium. Chelipedes in the male having the merus armed above with four compressed, cristiform teeth of which the last is

broader than the rest and bifid, and four below; the carpus with two sinuous or entire crests, separated by a deep groove; the propodos smooth, slightly dilated, its digital prolongation and the mobile dactylos each with a rounded tooth at their base, and meeting only near their apices, where they are armed with a row of about half a dozen small teeth. Chelipedes of the female differing from those of the male in having the propodos smaller, the digits less arched and without a tooth at the base. First pair of ambulatory legs longer than the rest, as long as the carapace and rostrum; last pair a little more than three-fourths of the length of the first; all four pairs covered with hooked hairs and with a spine at the end of their merus-joint. Carapace ornamented with bunches of hooked hairs. Total length  $\frac{1}{3}$ ths inch; breadth from tip to tip of anterior branchial spines nearly an inch.

*Hab.* Port Stephens, dredged in about five fathoms.

This species belongs to the section of the genus including *Chlorinus acanthonotus* of Adams and White, *C. longispina* of De Haan, *C. aculeatus* of Milne-Edwards and *Paramithrax halimoides*, Miers, from all of which it is distinguished by the shape and arrangement of the spines on the carapace.

*Tiarinia elegans*, *n. s.*

Carapace elongate-triangular. Surface pitted, especially on the branchial and cardiac regions; gastric regions with several tubercles, the largest situated in the middle line near the posterior boundary of the region, laterally compressed, subacute; cardiac region with a prominent conical elevation; branchial regions each with two conical prominences, with a small tubercle in front of them placed in an oblique line. Rostrum forming about one-third of the entire length, formed of two slender cornua which are contiguous to near the apex, where each curves outwards and ends in an acute point. Upper orbital margin not prominent. Merus of chelipedes punctate, with a few tubercles above and

below; propodos punctate, compressed, with a tooth above the articulation with the carpus. Finger widely gaping, meeting only at their tips. Ambulatory legs long and slender, with a few scattered tubercles on the merus-joints. Length  $\frac{9}{16}$ ths inch; greatest breadth  $\frac{5}{16}$ ths inch.

*Hab.* Broughton Islands, near Port Stephens, twenty-five fathoms.

*Xanthodes atromanus, n. s.*

Allied to *X. notatus*, Dana; distinguished from it mainly by having a prominent triangular tooth at the inner angle of the lower orbital border; the chelipedes not very unequal, the carpus of both slightly tuberculate externally, and with two pointed tubercles on its inner aspect, the propoda with a deep longitudinal groove on the outer surface near the upper border, the larger hand with two and the smaller with three longitudinal rows of tubercles below this; the fingers black,—the black extending backwards for some distance on the palm. Length  $\frac{7}{16}$ ths inch; breadth  $\frac{1}{6}$ ths.

*Hab.* ?

This species is distinguished from *X. pachydactylus*, A. M.-Edwards, by the presence of the rows of tubercles on the outer surface of the hands, and other points.

*Panopæus acutidens, n. s.*

Carapace moderately convex, with a series of granules and granular hairy tubercles in front and at the sides; a long curved granular hairy ridge extending inwards and slightly forwards from near the base of the fourth lateral tooth; smooth behind and in the centre. Front four-lobed, the median lobes broad, rounded, separated by a rounded excavation; lateral lobes narrower and rather more prominent. Orbital margin granular, external hiatus wide. Antero-lateral margin with five wide compressed teeth, the first low and rounded, the second larger,

but truncate, the third a little longer than the second and sub-acute, the fourth and fifth sub-conical, acute. Chelipedes unequal, the right larger than the left, its carpus with two conical spines on the inner border, propodos dilated, with two or three small tubercles on its inner surface, carpus and propodos ornamented with small granules mostly disposed in transverse rows and beset with short bristles; fingers stout, with rounded teeth, hooked at the tips; left chelipede with the propodos narrower than that of the right, the fingers very long and slender, hooked at the tips and armed with triangular teeth. Abdomen of the male bordered with a close fringe of long hairs. Length of carapace  $1\frac{1}{6}$ th inch, breadth  $1\frac{3}{4}$ ths inch.

*Hab.* Port Darwin.

A near ally of *Panopeus dentatus*, Adams and White, but distinguished by the form of the antero-lateral teeth, etc.

*Pilumnus monilifera*, *n. s.*

Surface convex, smooth, regions faintly defined; front divided by a deep notch into two prominent rounded lobes with granulated margins. A conical tooth between the front and the internal orbital hiatus. Borders of the orbit with a series of prominent granules. Antero-lateral borders with four teeth, of which the first is inconspicuous, each tooth capped by a cluster of granules. A cluster of three or four granules situated close together on either side of the middle line between and rather behind the orbits; an oblique row of prominent granules on either side near the lateral borders continuous behind with the granules of the  $\frac{1}{2}$ rd lateral tooth; a short row of three or four granules behind this near the fourth lateral tooth. Anterior legs very large, the left a little larger than the right. Carpus, propodos and base of dactylos covered with prominent granules. Carapace and limbs covered with a short, close pubescence. Length of carapace  $\frac{5}{8}$ ths inch; breadth  $1\frac{3}{8}$ ths inch.

*Hab.* Tasmania.

*Pilumnus inermis*, *n. s.*

Carapace slightly convex, postero-lateral borders converging ; surface smooth behind and in the centre, finely granular on the front and near the antero-lateral margins. Front convex, entire, with a slight mesial groove above. Orbital margins not toothed. Antero-lateral margins with three very obscure notches. Chelipedes with the propodos much larger in the male than in the female, very broad in the former, finely and closely granulous above, nearly smooth externally, but with a few obscure granules and a low longitudinal ridge near the lower margin ; the female finely granular above, on the proximal portion of the outer surface and below, and with a longitudinal row of granules on the outer surface close to the lower border, becoming a well-marked entire ridge on the digital portion. Anterior granular portion and anterior border of carapace, granular portion of chelipedes and borders of ambulatory legs clothed with long hairs. Length of carapace  $\frac{1}{6}$ ths inch, breadth  $\frac{3}{8}$ ths inch.

*Hab.* Port Jackson.

*Pilumnus glaberrimus*, *n. s.*

Carapace nearly square, convex, postero-lateral borders nearly parallel ; surface smooth, glabrous, with a few scattered punctations, no trace of inter-regional lines. Front nearly straight, almost entire, but with a very minute mesial notch. Antero-lateral margins rather prominent, with four very obscure low lobes. Orbital borders without teeth. Merus-joint of chelipedes smooth, triquetrous, with two acute teeth at its distal end above ; carpus smooth internally and externally, finely granulous above, its internal and distal angle slightly produced ; propodos much larger in the male than in the female, finely and closely granular above, its outer surface in the female with two regular longitudinal rows of granules, and below, close to the inferior margin, an acute ridge which is continued to near the extremity

of the digital portion; in the male smooth, or with a few irregular granules. Borders of the carapace, abdomen and legs lined with fringes of long hairs.

*Hab.* Port Jackson.

*Pilumnus integer*, *n. s.*

Carapace deep, very convex antero-posteriorly, regions very indistinctly indicated, postero-lateral borders parallel. Surface finely granular. Front rather prominent, narrow (the breadth of the interorbital space being contained three and a half times in the breadth of the carapace), divided into two rounded lobes by a mesial notch. Antero-lateral borders entire. Chelipedes in the male very large,—the right propodus larger than the left—the latter granular over all the outer surface with the exception of a triangular space near the base of the mobile finger, the former only granular near the base, a granular ridge near the lower border of the propoda of both chelipedes, becoming entire on the digital portion to the apex of which it extends. Margins of carapace and limbs ornamented with fringes of hairs. Colour brick-red. Length of carapace  $\frac{5}{16}$ ths inch; breadth nearly  $\frac{3}{8}$ ths inch.

*Hab.* Port Jackson.

Neither this species nor the preceding can be regarded as typical *Pilumni*, but their connections with *Pilumnus* are so close that I have thought it expedient to set them down provisionally as aberrant members of that genus.

*Melia* (?) *brevipes*, *n. s.*

Carapace smooth, broader than long, convex, especially in its anterior half. Front not deflexed, margin entire, slightly arched. Lateral borders slightly arched anteriorly, with an acute tooth directed forwards near the antero-lateral angle. Third joint of the external maxillipedes notched at its antero-

internal angle for articulation with the fourth joint. Anterior legs stout; carpus with an acute tooth internally; propodos smooth, with a deep groove close to its lower border, at the distal extremity; upper finger also canaliculated externally. Ambulatory legs rather short, smooth, and with a few hairs above and below. Length  $\frac{7}{16}$ ths inch; breadth  $\frac{1}{2}$  inch.

Griffith's Point, Western Port, about five fathoms.

*Pararuppellia*, *n. g.* (Fam. Eriphiidæ).

Carapace as in *Ruppellia*. Basal joint of the antennæ extremely short, not nearly reaching the front; second joint stout, touching the front; flagellum entirely excluded from the orbit by the union of the lower orbital border with the front.

*Pararuppellia saxicola*, *n. s.*

Carapace convex, very minutely granular; front prominent, sex-dentate, the two median teeth more prominent and much broader than the lateral, truncate. Orbital margin finely granular, upper border with two fissures—an obtuse lobe at its inner end; outer angle with two blunt teeth; lower border with a rounded lobe near its inner angle. Antero-lateral margin thin, granular, divided by two wide notches into three low broad lobes, of which the first is the narrowest and the second the broadest; behind this a prominent acute tooth directed forwards and outwards, its anterior border continued on the carapace as a granular ridge for a short distance. Chelipedes extremely large and swollen in the male, carpus minutely granular and punctate, with a few larger granules on its distal border, a strong tooth-like process at its inner and distal angle; propodos unequal, the larger (in the male) longer than the carapace, the breadth about half the length, minutely granular and punctate above, punctate alone below; a row of punctations forming a longitudinal groove on the lower and distal portion of the outer surface of the propodos, continued on the digital portion; dactylos granular

above close to its insertion, with a short groove on either side, a rounded lobe at the base of the cutting edge, and four or five low teeth; fingers of smaller chelipede each with a row of sub-equal rounded teeth. Ambulatory legs hairy on the borders. Length of carapace 2  $\frac{1}{2}$  inches; breadth 3 inches.

*Hab.* Port Essington; collected by Mr. Alex. Morton. This species is much used by the natives for food.

*Neptunus tomentosus, n. s.*

Carapace slightly convex, finely granular and short-tomentose, shape approaching that of *Amphitrite*; breadth about twice and a half the length. Front quadridentate, the teeth rounded, the median rather more prominent and rather narrower than the outer, separated by a deep fissure. Upper orbital margin with two fissures. Antero-lateral borders with eight acute, forward-curved teeth—the last nearly twice as long as the others. Anterior border of merus-joint of chelipedes with three acute teeth; posterior border unarmed; carpus strongly ridged, with a very long acute spine internally and two short acute spines externally; propodos strongly ridged, with one spine at the base and two above the articulation of the dactylos; fingers of both chelipedes with small, sub-equal teeth.

*Hab.* Port Jackson.

This species is closely allied to *Lupa pubescens*, Dana, (U. S. Explor. Exped. Crust. i., p. 274, pl. xvi., fig. 9.) but differs from it in having the frontal teeth rounded, the median pair being a little more prominent than the others, in having the last tooth of the lateral margins relatively shorter and in wanting the stout basal tooth on the dactylos.

*Eucrate affinis, n. s.*

Carapace smooth, convex; a faint mesial frontal furrow bifurcated behind so as to bound the anterior portion of the

protogastric region; two slight ridge-like elevations near the antero-lateral border, and another running obliquely parallel to the postero-lateral border. Front straight, faintly notched in the middle. Inner orbital angle acute. Antero-lateral borders with four teeth, each of which is carinated. Anterior legs (in the male) dilated; arm with a strong tooth above near its distal end, separated distally by a transverse groove from a second lower transverse elevation; wrist with a small tooth at the distal and internal angle, very hairy externally; hand smooth, with a longitudinal ridge close to the inferior border, and two rounded elevations between the bases of the fingers. Ambulatory legs long and slender, the three terminal joints hairy above and below. Length  $\frac{3}{8}$ ths inch; breadth  $\frac{1}{2}$  inch.

*Hab.* Off Holborn Island, near Port Denison, 20 fathoms.

This species is a near ally of *E. crenatus*, De Haan, (of which there is a specimen from Japan in the Australian Museum) but is distinguished from it by the presence of the short ridges on the lateral portions of the carapace, by the shape of the lateral teeth, and the acuteness of the internal orbital angle.

#### *Eucrate sexdentatus*, n. s.

Carapace convex, faintly granular at the sides, without ridges or grooves. Front as in the preceding species. Internal orbital angle not conspicuous. Antero-lateral margin three-toothed, teeth not carinated, the last spinous, separated by a slight interval from the second. Anterior legs nearly as in the preceding species, but the second elevation on the upper border of the arm inconspicuous, and the tooth on the wrist more prominent and acute; ambulatory legs with fewer and shorter hairs. Carapace with about twenty red spots. Length  $\frac{3}{8}$ ths inch; breadth  $\frac{7}{16}$ ths.

*Hab.* Off Holborn Island, Port Denison, 20 fath.

*Macrophthalmus latifrons*, *n. s.*

Carapace about once and a half as broad as long; surface very finely granulate. Front broad, about one-fourth of the total breadth. Orbits nearly transverse. Lateral borders arched, with three teeth separated by deep fissures, the first two broad, the third small. Anterior limbs in the male very large, finely granular like the carapace; hand unarmed, with a granular raised line on the outer surface near the lower border. Immobile finger much bent downwards, regularly denticulated on its inner edge; inner edge of mobile finger with a denticulated elevation near the base. Inner surface of the arm, edge of carapace, and basal joints of legs, with scattered slender hairs; a thicker coating on the fourth and fifth joints of the ambulatory legs. Length of carapace  $\frac{3}{4}$ ths inch; greatest breadth  $1\frac{1}{3}$ th inch.

*Hab.* Port Philip.

*Utica setosipes*, *n. s.*

Surface of the carapace and ambulatory limbs covered with a very fine close pubescence. Front not very prominent, straight. Transverse ridge on the protogastric region well marked, divided by a narrow mesial furrow. Lateral borders very little arched anteriorly. Chelipedes (in the female) small; propodos smooth, with a low narrow ridge close to its lower border extending to the tip of the digital prolongation; digits slightly spoon-excavate at the tips. Last two joints of the ambulatory legs fringed below with long hairs. Length of carapace  $\frac{7}{16}$ ths inch; breadth  $\frac{1}{2}$  inch. Colour dark brown.

*Hab.* Port Denison. Found on the sea-shore by Mr. Alex. Morton; the species hitherto described are inhabitants of fresh water.

*Utica crassimana*, *n. s.*

Upper surface of carapace smooth, naked. Margin of front slightly concave. Lateral borders a little more arched than in

the preceding species. Anterior legs very large in the male; hand swollen, smooth; fingers very widely gaping, the gap being covered over by a thick bundle of hairs arising from the bases of the fingers and the extremity of the palm; a narrow ridge on the outer surface of the lower finger not continued on the palm; inner borders of fingers finely toothed, apices slightly spoon-excavate. Ambulatory legs finely tomentose, terminal and penultimate joints fringed below with long hairs. Colour light pink with purple markings. Length  $\frac{1}{2}$  inch; breadth  $\frac{5}{8}$ ths inch.

Holborn Island, near Port Denison, on the sea-shore.

A near ally of *U. barbimana*, A. M.-Edw., but differing from it in the relatively broader carapace, the larger hands, the more arched fingers, hairy terminal joints of the ambulatory legs, and other points.

*Chasmagnathus convexus*, *n. s.*

Carapace strongly convex both in the transverse and the antero-posterior direction; surface very minutely granular, lateral border arched anteriorly, with one tolerably deep incision. Front strongly deflexed, its anterior border with a slight angular mesial incision and a lateral shallow concavity so as to appear very obscurely four-lobed. Anterior legs (in the female) very finely granulate; fingers regularly toothed, a slight space between them at the base. Length  $\frac{3}{4}$ ths inch; breadth 1 inch.

*Hab.* Shoalhaven (Australian Museum.)

*Hymenosoma rostratum*, *n. s.*

Carapace sub-orbiculate, rather longer than broad. Rostrum produced, acute, slightly recurved; an obscure tooth at its base in front of the eye; a prominent acute tooth behind the eye, and another about the middle of the lateral margin. Three prominent tubercles on the pterygostomial regions. Chelipedes in the male very large, arm trigonal, a sharp tooth at the distal end of its upper border; carpus with three short, much elevated,

tooth-like carinæ; propodos broad, compressed, prominently keeled above, obscurely keeled below; fingers each with a basal tooth; immobile finger with a second but lower elevation about the middle. Length  $\frac{5}{16}$ ths inch; breadth  $\frac{1}{4}$  inch.

*Hab.* Griffiths' Point, Port Western, Victoria.

SYNONYMY OF AND REMARKS UPON TWO AUSTRALIAN SPECIES OF  
MELANIA.

BY J. BRAZIER, C.M.Z.S., &c.

1. MELANIA TATEI, Brazier.

*Melania tetrica*, Conrad (non Gould) Proc. Acad. Nat. Sciences, Phil., p. 11, 1850. American Journal Conch. ii., p. 80, pl. 1, fig. 9, 1866. *Melania Balonnensis*, Brot (non Conrad) in Martini and Chemnitz, Conch. Cab. p. 287, pl. 28, fig. 14 and 14 *b.*, 1874.

*Hab.* Richmond and Clarence Rivers, New South Wales, Wide Bay, Port Curtis and the upper Brisbane River, Queensland (*Brazier*). Rivers of South-east Australia (*Conrad*).

This species is only found in the rivers and small creeks of New South Wales and Queensland. Mr. Conrad is evidently wrong when he quotes the rivers of South-east Australia or his specific names of *M. tetrica* and *Balonnensis* have got transferred.

Dr. A. Brott in his "Materiaux pour servir a l'etude de la famille des Melaniens. Additions et Corrections au Catalogue Systematique des Especies qui composent la Famille des Melaniens 64 pages 3 coloured plates Geneva, 1868," considers *M. tetrica* and *Balonnensis* of Conrad to be only local varieties of one species; but they are quite distinct. The *Melania tetrica*, Gould, 1847, is a synonym of *Melania bellicosa*, Hinds, 1844.

A new name being required for our Australian species I take great pleasure of naming it after Professor Ralph Tate of South Australia.