

ART. VII.—*Some little known Victorian Decapod Crustacea with Descriptions of New Species, No. II.*

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(With Plates VIII., IX., X.)

[Read 10th July, 1902.]

The paper which we have now the honour to submit is the second of a series of papers which we hope to continue dealing with our Victorian decapods.<sup>1</sup> Four of the species dealt with are new to science, whilst the remaining one is of considerable interest, and is new to the Victorian record. It is a fresh-water form found by us occurring in Lake Colac, and so near to kindred forms that at present we are not prepared to separate it from specimens with a similar habitat, which we have received from New Zealand and Norfolk Island through the kindness of Dr. Chilton, of Christchurch, and a further series from Mr. Wm. Lang, of Norfolk Island.

Of the new species three are shrimps living on a sandy bottom in Port Phillip and Western Port, the Australian analogues of the well-known English "Crangon," the common edible shrimp of Europe. The remaining new species is a form of crab dredged by the late J. Bracebridge Wilson, and which we found amongst the Royal Society's collection in the Biological Laboratory of the University.

Tribe—*Catametopa*.

Family—*Hymenosomidae*.

*Hymenosoma lacustris*. Chilton. (Pl. VIII.)

*Elamena* (?) *lacustris*. Chilton. Trans. N.Z. Inst., vol. xiv., p. 172, pl. 8, 1882.

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<sup>1</sup> In our previous paper (Proc. Roy. Soc. Victoria, vol. xiv.) on p. 62, line 7, for *first* joint read *fourth* joint. Also on p. 64 the figures were reduced in the process of reproduction, and consequently the magnifications given are not correct.

*Hymenosoma lacustris.* Chilton. Trans. N.Z. Inst., vol. xv., p. 69, 1883.

We have found this crab to be plentiful in the fresh waters of Lake Colac, Victoria, and a single specimen collected by Mr. T. S. Hall some years ago in the Moorabool River is undoubtedly a young female of this species. The species was described by Dr. Chilton in 1882 from specimens taken in Lake Pupuke—a fresh-water lake near Auckland, N.Z. The author has kindly furnished us with examples from the type locality and also with a small series from Norfolk Island. As to these we observe that those from the different localities differ slightly in the following characteristics:—

*From New Zealand.*—In addition to the points set out in the original description the following may be noted:

The carapace has two obsolescent teeth on the anterior lateral margins.

The chelipedes of the male have the hand with the lower posterior margin faintly tuberculate, the wrist with only a very small tubercle on its lower margin, and the arm with a small tubercle on its distal outer margin.

The specimens we have received from New Zealand are smaller than those from Lake Colac, and about the same size as those from Norfolk Island.

*From Lake Colac, Victoria.*—The carapace has one obsolescent tooth on the anterior lateral margins.

The chelipedes of the male have the hand with the lower posterior margin armed with 5-7 small rounded teeth and a rounded tubercle in the median line near its articulation with the wrist, the wrist with a prominent bifid tubercle on its lower margin (in some cases cut into two distinct teeth) and the arm without a tubercle on the distal outer margin. The specimens are as a rule more hairy than those from New Zealand.

The pleon of the male has a prominent tubercle on the outer margin of the first somite, and less prominent ones on the second and third.

The outer maxillipedes are more cordate than in the New Zealand form.

*From Norfolk Island.*—The carapace is more nearly circular, and is without marginal teeth. It is also generally more hairy than either of the above.

The chelipeds of the male have the hand with the teeth more prominent, and with the median tubercle well defined; the wrist with the tubercle prominent and bifid, the arm with the outer tubercle well defined. The hairs are stouter, shorter and straight.

On the pleon of the male the tubercles are absent on the first and second somites, the succeeding ones have a depression in the median line which is filled with hair.

The outer maxillipedes are similar to those from New Zealand.

In the examination of a number of specimens these features are not found to be constant, and a large series of adult males from each locality must be observed before we are prepared to divide them into distinct species. In the Norfolk Island examples the various points in which the species differs from others of the same genus are more clearly defined, and the hairs clothing the carapace are stronger, straighter and slightly more numerous than in those from the other localities—this may be due to its tropical habitat.

It is worthy of note that Lake Pupuke in New Zealand, although near the sea is cut off from it by sheets of recent basalt, while Lake Colac is also surrounded by tertiary basaltic flows, but is situate some 35 miles from the nearest sea, which is separated from it by a high range of hills.

We have refigured the species from Victorian examples.

Tribe—*Dromiidea*.

Family—*Dromiidae*.

***Cryptodromia wilsoni*, sp. nov. (Pl. IX.)**

All parts, except the tips of the fingers and dactyli, thickly covered with a dense spongy tomentum, which on the dorsal surface of the carapace is markedly ridged and pitted, the ridges defining the regions.

Carapace much broader than long and deeply convex—on removal of the tomentum the surface is smooth, with the regions not so clearly defined.

Front cut into three teeth—the centre one, which is on a lower plane than the two upper ones, is small and acute, the two upper ones are larger and obtuse.

A flat obtuse tooth occurs near the middle of the upper border of the orbit—but there is no outer orbital spine. The suborbital lobe is well defined and dentiform.

The antero-lateral borders of the carapace are cut into four prominent acute teeth. The first, which is the smallest, is situated on the hepatic region, on the same level as the suborbital angle. The others are on the true lateral margin, the distance between the second and third being only about two-thirds of that between the third and fourth. The fourth is slightly nearer the median line of the carapace than the third. There is a small tooth or tubercle between the first of the above mentioned teeth and the endostome.

The hand is somewhat long and longitudinally ridged on its outer surface, but it is not nodular. There are two strong tubercles on the wrist.

The first two pairs of ambulatory legs bear strong nodulations on their carpus and propodos, the last two pairs are short and flattened, and only obscurely nodular, and alternating in length on either side. The dactyli are short and curved.

#### DIMENSIONS OF TYPE.

	♂	♀
Breadth of carapace - -	30 mm.	21 mm.
Length of carapace - -	22 „	16 „
Length of chelipede - -	42 „	22 „
Length of 1st ambulatory limb	33 „	21 „

*Locality.*—Dredged off Port Phillip Heads (J. Bracebridge Wilson).

Type presented by the Royal Society to the National Museum. Co-types in the Biological Museum.

Tribe—*Caridea*.

Family—*Crangonidae*. Bates.

Genus *Pontophilus*. Leach.

This genus closely approximates to the well-known Genus *Crangon*, plentiful in European waters, and of which the edible

shrimp of the English markets "Crangon crangon," Linn., forms so well known a type.

It may be readily distinguished from that genus by the possession of seven gills on each side (as against five in Crangon), and by the exceedingly short chelate second periopoda; the third periopoda also, although of greater length, are filiform as compared with the two remaining pairs, which are more robust.

So far the only species from Australasian waters which have been described are *P. australis*,<sup>1</sup> Thomson, from New Zealand; and *P. intermedius*,<sup>2</sup> Bates, from St. Vincent's Gulf; and *P. challengerii*,<sup>3</sup> Ortmann.

The three forms now described bring the Australian representatives of the genus up to six.

### *Pontophilus obliquus*, sp. nov. (Pl. X., Fig. 1).

*The cephalothorax*, which is about one-third the total length of the body is subquadrate when viewed from above, and is furnished with a broad, flattened, and somewhat concave rostrum, obscurely trifid at its extremity. The posterior angle is well defined, and the antero-lateral margins are prominently extended as spines, but there are no further spines on the borders anterior to this.

Two long pointed spines occur on the median line; these are pointed forward, and give to the cephalothorax the aspect of having a median carina. On each side of the foremost of these there are two long pointed spines turned obliquely inwards, from which the species takes its name.

The regions of the carapace are well defined and are delineated by distinct rugae.

*The abdomen* is short and broad, narrowing somewhat abruptly from the third to the fifth segment. It is geniculate at about right angles at the third segment, the segments from the first to the fourth are smooth, whilst the fifth and sixth are strongly carinate. The first segment slightly overlaps the cephalothorax

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<sup>1</sup> Thomson: Trans. and Proc. New Zealand Institute XI., 1878, pl. 10, fig. A1.

<sup>2</sup> Bates: Proc. Zool. Soc. London, 1863, p. 503, pl. 41, fig. 6.

<sup>3</sup> Ortmann: Decapod. Schizopod. Plankton Exped., 1893, and Proc. Acad. Nat. Sci. Philad., p. 185, 1895.

at the margins, whilst in the centre there is a long oval space, in which the integument is not calcified. A similar, but smaller, space occurs between it and the following segment.

The *second segment* is narrow in the centre and expanded at each side into two rounded lobes, which overlap the preceding and succeeding segments.

The *third segment* the longest and is sinuate posteriorly.

The *fourth* is short and smooth.

The *fifth* is narrow, and bears a strong median ridge.

The *sixth* is somewhat long and exceedingly narrow, and is hollowed on each side, thus throwing the centre up into a strong ridge, which bifurcates at its posterior end.

The *telson* is of the same length as the sixth segment, is strongly ridged, and is fringed at the end with stiff hairs.

The *uropods* are narrow and slightly longer than the telson, and are fringed with strong hairs.

The *first antennae* are robust and furnished with two flagella, which reach only slightly beyond the squames of the second pair. The basal joints are short, reaching little beyond the margin of the carapace.

The *second antennae* are long, and furnished with short, broad basal squames.

The *chelipedes* are robust, and reach to the level of the distal end of the antennal squamae; they are furnished with a long, curved dactylos, between the base of which and the short mobile finger there is a short fringe of hair. The mobile finger is situate about midway between the base of the dactylos and the next joint.

The *second pereopod* reach only to the carpus of the first pair, and are clothed with hair.

The *third pair* are of normal length and filiform.

The *fourth and fifth pairs* are more robust, and with the third pair terminate in a simple styliform dactylos.

#### DIMENSIONS OF TYPE. ♂.

Length (entire)	-	-	-	23 mm.
Length of carapace	-	-	-	8 "
Length of abdomen	-	-	-	12 "
Length of telson	-	-	-	5 "
Length of 1st pereopod	-	-	-	9 "

*Habitat.*—Dredged off Shoreham, Western Port, in about five fathoms on a sandy bottom.

*Observations.*—This species is readily distinguished from the next two hereunder described principally by its broader form, by the disposition of the dorsal spines on the cephalothorax and by the form of the abdomen.

It does not appear to have close affinity to any member of the genus as set out by Ortmann in his revision of the Family Crangonidae.<sup>1</sup>

The type has been deposited with the National Museum.

**Pontophilus victoriensis**, sp. nov. (Pl. X., Fig. 2.)

The *cephalothorax* is nearly one-quarter the total length measured from the base of the rostrum to the tip of the telson. The anterior margin is furnished with an obtuse concave rostrum scarcely as long as the eye stalks. A prominent tooth occurs at the outer angle of the orbit, and another forms the apex of the antero-lateral angle, behind which there are two other teeth on each lateral margin.

There is a marked depression at the base of the rostrum and behind the eyes. In the median line immediately behind the base of the rostrum there are three strong teeth projecting forward, which make the carapace appear strongly carinate when viewed from above. Behind each of the external orbital teeth there are five more spines in a longitudinal line reaching about three-fourths the length of the carapace, and half way between the third of these spines and the lateral margin there is another single prominent spine on either side.

The *abdomen* is about three times the length of the cephalothorax and tapers gradually and regularly to the telson.

The *first segment* is the shortest and slightly overlaps the cephalothorax on its lateral margin. It is bordered in the centre both anteriorly and posteriorly by a small uncalcified area, and is without any carina on its surface.

The *second segment* is about twice the length of the first, and carries a prominent median carina for two-thirds of its posterior length, which is continuous through the next two segments.

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<sup>1</sup> Ortmann: Proc. Acad. Nat. Sci. Philadelphia, 1895, pp. 173-197.

The *third segment* is three times the length of the first, and slightly sinuous at its posterior margin, where the abdomen becomes steeply geniculate.

The *fourth segment* about equals the second in length.

On the *fifth segment* which is short the median carina bifurcates and terminates in its posterior margin.

The *sixth segment* equals the third in length, and its posterior lateral angles at its articulation with the telson are dentiform.

The *telson* is as long as the two anterior segments, and slightly longer than the uropods and terminates in a small tooth, which is supported on either side by two long fine spines, and is somewhat longitudinally ridged and distally fringed with stiff hairs.

The *uropods* are narrow and fringed with hairs.

The *first antennae* are biflagellate and longer than the squamae of the second pair.

The *second antennae* are long and fine, and furnished with the characteristic broad basal squames.

The *chelipedes* have the propodos somewhat long and slender, the immobile finger is situate at about one-third the distance between the base of the dactylos and the next joint. The carpos is somewhat globular in outline, and is furnished with a prominent tooth on its inner margin.

The *second pereopod* are short and chelate, reaching only to the carpos of the first pair, and are not clothed with hairs.

The remaining three pairs have the normal characters of the genus.

#### DIMENSIONS OF TYPE.

Length (entire)	-	-	-	24 mm.
Length of carapace	-	-	-	6 "
Length of abdomen	-	-	-	13 "
Length of telson	-	-	-	5 "
Length of 1st pereopod	-	-	-	8 "

*Habitat.*—Altona Bay and Beaumaris, Port Phillip. Dredged in about five fathoms on a sandy bottom.

*Observations.*—This species has some affinity with *P. australis*, Thomson. By the kindness of the author we have been furnished

with specimens of his species, from which ours may be distinguished by the presence of three dorsal median spines, and by its more slender form.

The type has been deposited with the National Museum.

**Pontophilus flindersi**, sp. nov. (Pl. X., Fig. 3.)

This species somewhat resembles *P. victoriensis* (described above) in its general form and proportions.

The *cephalothorax* is bounded anteriorly by a rounded concave rostrum of equal length to the eye stalks. The post-orbital angles are well defined, and the lateral marginal angles form distinct teeth, behind which the margins are cut into three large forwardly directed spines.

The upper surface forms a raised platform terminated anteriorly by a curved ridge, which is continuous with the anterior half of the orbital margins and the margin of the rostrum. This ridge extends backward on the dorsal surface parallel with the lateral margins, behind the eyes it is cut into four small fine teeth. In the median line, at its anterior fourth, there is a strong forwardly directed tooth or spine, slightly behind which on each side between the ridge above mentioned and the lateral margin there is another prominent spine.

The *abdomen* is smooth and without distinctive features, except that the last two segments are laterally compressed, giving them a somewhat carinate appearance.

The *telson* is dorsally ridged and terminates in a brush of stiff hairs. It only slightly exceeds in length the *uropods*, which are also fringed.

The *first antennae* have the basal joints considerably lengthened, reaching to half the length of the squamae of the second pair, beyond the end of which the two flagella scarcely pass.

The *second antennae* are furnished with very long and fine flagella.

The *pereiopods* in all their characters closely resemble those of *P. victoriensis*.

DIMENSIONS OF TYPE.

Length (entire)	-	-	-	22 mm.
Length of carapace	-	-	-	6.5 „
Length of abdomen	-	-	-	11 „
Length of telson	-	-	-	3.5 „
Length of 1st pereopod	-	-	-	8 „

*Habitat.*—Dredged on a sandy bottom in about four fathoms off Shoreham, Western Port.

*Observations.*—This species appears to have its closest affinities with *P. intermedius*, Bates. We have not seen specimens of this species, but judging from the figure given<sup>1</sup> there can be no question as to validity of our species.

The type has been deposited with the National Museum.

DESCRIPTION OF PLATES.

PLATE VIII.

*Hymenosoma lacustris*, Chilton.

- a* ♂. Dorsal view of male.
- b* ♂. Pleon of male.
- c* ♀. Pleon of female.
- d* ♀. Dorsal view of posterior portion of carapace of female.
- e*. Front.
- f*. Second maxillipede.
- g*. Mandible.
- h*. First maxillipede.
- i*. Chela.
- k*. Last two joints of ambulatory legs.

PLATE IX.

*Dromia wilsoni*.

PLATE X.

- Fig. 1.—*Pontophilus obliquus*.
- „ 2. „ *victoriensis*.
- „ 3. „ *findersi*.

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<sup>1</sup> Proc. Zool. Soc. London, 1863, p. 503, pl. 41, fig. 6.





