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THE AUSTRALIAN FRESHWATER PRAWNS OF THE FAMILY PALAEMONIDAE

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(Figures 1–11.)

The freshwater species of this family are found in the permanent waters of creeks and rivers and to a less extent of dams and waterholes. In the small standing water one is more likely to find prawns of the family Atyidae. The species appear to have a peculiar distribution in Australia. The dominant genus *Macrobrachium* occurs throughout northern Australia and inland Australia south into South Australia where there is at least one coastal species. It is apparently absent from south-west Western Australia but a species of *Palaemonetes* is recorded from there. Species are not known over most of Victoria, and on the east coast of Australia records are confined to Queensland. Intensive collecting around Sydney has failed to yield any freshwater species.

Family PALAEMONIDAE.

Caridea in which the first two pairs of legs are chelate, but dissimilar. The wrist of the second pair of legs is not divided and the rostrum is not hinged, but rigid.

Subfamily PALAEMONINAE.

A pleurobranch is present at the base of the third maxilliped; posterior margin of the telson with two pairs of spines and two or more plumose setae.

Only two genera of this subfamily are represented in the Australian freshwater fauna. The genus *Palaemonetes* is recorded with a single species from the south-west region of Western Australia. The genus *Macrobrachium* is widespread over the eastern half of the continent but is unknown in the coastal zone south from the Queensland border and over most of Victoria.

Genus *Macrobrachium* Bate, 1868.

Genotype, *Macrobrachium americanum* Bate, 1868.

Antennal and hepatic spines present; supraorbital and branchiostegal spines absent; mandible distinctly cleft, normally with a large three-segmented palp; dactylus of last three pairs of legs simple.

The species normally occur in freshwater but some may also be found in brackish and even salt water. Some Australian species seem to be entirely marine or really estuarine, for example, *novae-hollandiae* and *danae*, as an extensive search has failed to disclose any specimens in fresh water.

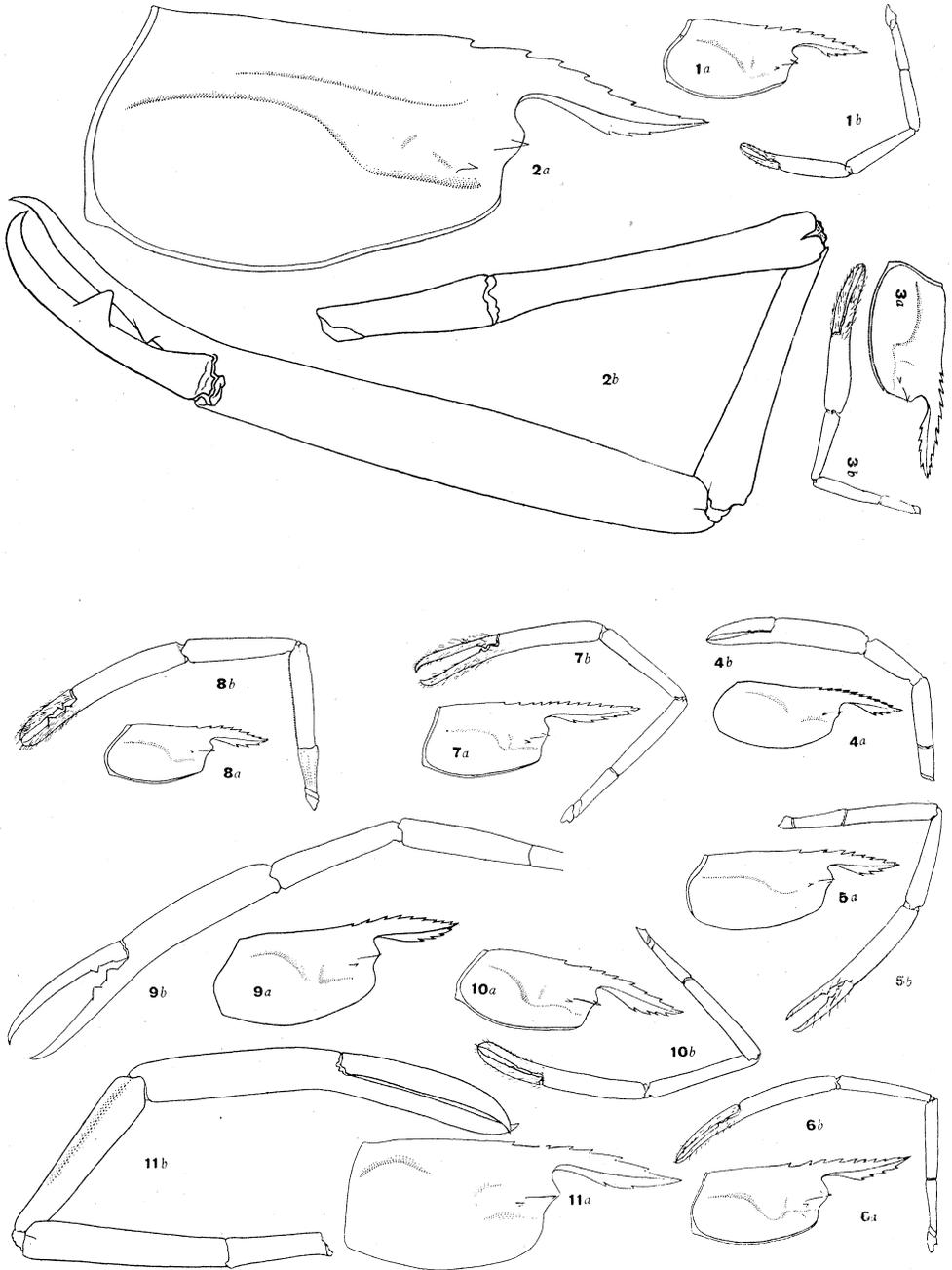
This genus has generally been considered as *Palaemon* while most species of *Leander* are now placed in *Palaemon*. *Leander* and *Palaemon* are typically marine though some species of *Palaemon* do occur in fresh water.

Macrobrachium novae-hollandiae (de Man), 1908.

Palaemon (*Eupalaemon*) *novae-hollandiae* de Man, 1908, Ann. Mag. Nat. Hist., (8), 1, 370.

Palaemon ornatus Haswell, 1882, Catalogue Austr. Crustacea, 196.

Macrobrachium novae-hollandiae Holthuis, 1950, Siboga Exped. 39, Decapoda 10, 155.



Figures 1-11.

1. *Macrobrachium tolmerum*, sp. nov. 2. *M. lar* (Fabricius). 3. *M. adscitum adscitum*, sp. nov.
 4. *M. glypticum*, sp. nov. 5. *M. atactum atactum*, sp. nov. 6. *M. atactum ischnomorphum*, sp. nov. 7. *M. atactum
 sobrinum*, sp. nov. 8. *M. australiense eupharum*, sp. nov. 9. *M. australiense cristatum*, sp. nov. 10. *M. australiense
 australiense*, Holthuis. 11. *M. australiense crassum*, sp. nov.

(a) Cephalothorax. (b) Second peripod of male. Setae of fingers omitted from Figures 4, 9 and 11. Natural size.

This species, though common in the estuaries from Sydney to Brisbane, has never been collected in fresh water; in fact, no prawns of the subfamily Palaemoninae are known from the fresh waters of the Sydney district. There is some variation in the proportions of the chelae which, however, are always extremely long and on this character alone easily distinguishable from *danae* which has a similar distribution.

Macrobrachium danae (Heller), 1865.

Palaemon Danae Heller, 1865, Reise Novara Zool. 2, 120.

Palaemon danae de Man, 1908, Ann. Mag. Nat. Hist. 8, 1, 363.

Macrobrachium australe Holthuis, 1950 (in part), Siboga Exped. 39, Decapoda 10, 124.

Holthuis considers *danae* (Heller) a synonym of the freshwater species *australe* (Guérin Méneville). The species *danae* is restricted almost entirely to salt water though it may enter small freshwater springs and swamps at the shore-line. Ovigerous females are normally collected in salt water. Adult males have the second periopods equal and have a shorter carpus than in *australe*. The teeth on the cutting edges of the fingers also differ. There are a number of small teeth proximally but the distal tooth is the largest in *danae*.

Key to the Australian Freshwater Species of *Macrobrachium*.

1. Merus distinctly shorter than carpus 2
- Merus almost or quite equal to carpus 5
- Merus slightly greater than carpus 3
2. Large species; telson with apex long, acuminate, lateral spines not reaching the apex of the telson ... *rosenbergi* (de Man)
- Small species; telson with apex short, acuminate, the inner of the lateral spines extending well beyond the apex of the telson *tolmerum*, sp. nov.
3. Telson with apex rounded, lateral spines short; large species. (Second periopods strongly tuberculate, palm not swollen) *lar* (Fabricius)
- Telson with apex short, acuminate, inner of lateral spines extending beyond apex of telson; small species 4
4. Second periopods smooth; rostrum above only slightly convex, fingers appearing smooth; fingers as long as palm—
Palm greatly swollen *adscitum adscitum*, sp. nov.
Palm not swollen *adscitum* subsp.
- Second periopods tuberculate, all segments inflated; rostrum short, convex above, fingers appearing smooth, fingers shorter than palm, carpus only three times as long as wide and much shorter than palm ... *glypticum*, sp. nov.
5. Fingers of second periopods appearing bare or with only short hairs; second periopods long and thin, not obviously tuberculate 6
- Fingers of second periopods clothed with long, dense hairs; second periopods rather stout, obviously, though finely tuberculate 7
6. Rostrum with the upper margin slightly convex, apex not upturned; carpus as long as palm; fingers not quite as long as palm; carpus five to six times as long as wide *atactum atactum*, sp. nov.
- Rostrum long, with the upper margin almost straight, apex slightly upturned; carpus generally longer than palm; fingers longer than palm; palm slightly swollen; carpus seven times as long as wide *atactum ischnomorphum*, nov.
- Rostrum long, upper margin slightly convex, apex slightly upturned; carpus almost as long as palm; fingers almost as long as palm; carpus about six times as long as wide *atactum sobrinum*, nov.
7. Rostrum above strongly convex; carpus shorter than palm; carpus four to four and one-half times as long as wide ... *australiense eupharum*, nov.
- Rostrum above convex, apex not upturned; carpus shorter than palm; carpus four to four and one-half times as long as wide; periopods very stout, palm slightly swollen *australiense cristatum*, nov.
- Rostrum above only slightly convex, apex slightly upturned; carpus as long as palm; carpus five to six times as long as wide *australiense australiense* Holthuis
- Rostrum above convex at base, concave at apex, apex distinctly upturned; carpus about equal to palm; carpus five times as long as wide; fingers almost as long as palm *australiense crassum*, nov.

Macrobrachium rosenbergi (de Man), 1879.

(Figures 6 and 12.)

Palaemon carcinus auctt. (non Linnaeus, 1758).*Palaemon Rosenbergii* de Man, 1879, Notes Leyden Mus. 1, 167.*Palaemon (Eupalaemon) carcinus rosenbergi* Roux, 1933, Rev. Suisse Zool. 40, 344.*Macrobrachium rosenbergii* Holthuis, 1950, Siboga Exped. 39, Decapoda 10, 111.

Roux records the species from the Katherine River, north Australia.

Description of Adult Male (Australian Material).—Telson with apex long, acuminate, the lateral spines not reaching the apex of the telson; rostrum rather long and thin, with a sharply pointed apex, extending as far as or slightly beyond the antennal scale, more or less straight but with apex slightly upturned, lateral carina showing a more decided dorsal curvature; rostrum dorsally bearing eleven to thirteen teeth, the first three lying behind the orbit, the lower margin with eight spines, dorsal margin convex over the basal half, concave over the apical part, lower margin more or less straight for most of its length; second periopods very long and stout, coarsely but rather sparingly tuberculate, the tubercles lying in more or less regular lines; carpus considerably longer than the merus but not nearly half as long again; carpus about equal to the palm; fingers shorter than the palm, in some cases only about one-half as long as the palm; teeth of the proximal half of the cutting edges of the fingers quite small; dactylus densely clothed in short setae.

Australian Distribution.—Queensland: Coen; Norman River.

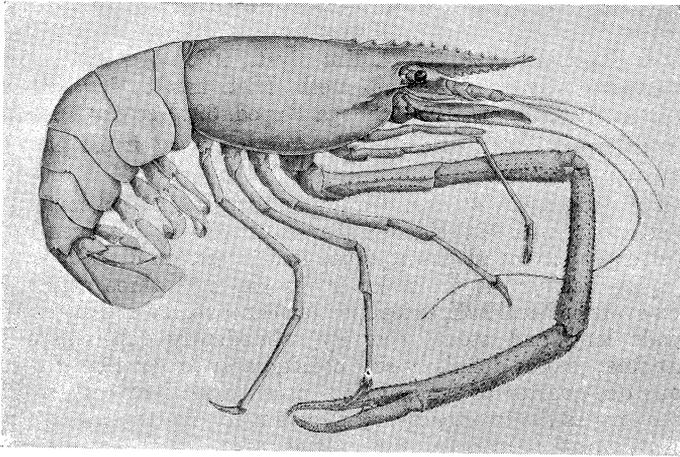


Figure 12.

Macrobrachium rosenbergi (de Man), J. R. Kinghorn, del.

This subspecies of large prawns can be distinguished from *Macrobrachium lar* described below from the Roper River by the structure of the telson, the tuberculation of the second periopods and the shape of the rostrum. I have reproduced a figure of this species prepared from specimen No. 4371 by J. R. Kinghorn. The rostrum generally has a slightly more upturned apex than represented.

Macrobrachium tolmerum, sp. nov.

(Figure 1.)

Description of Adult Male.—Telson with the apex short, acuminate, the inner of the lateral spines extending well beyond the apex of the telson; rostrum long, rather stout but with a sharply pointed apex, more or less straight but with a gentle upturning of the apex, deep in lateral view, particularly at the middle, the lateral carina showing a decided upward curvature; rostrum dorsally bearing eight to eleven teeth, usually ten, the first one to three teeth lying behind the orbit; three to four spines on the lower margin, dorsal margin definitely convex over at least the basal half, generally only slightly so, lower margin quite strongly convex; second periopods rather short and stout, rather finely, abundantly tuberculate; merus distinctly shorter than the carpus but at least three-quarters of it; carpus about as long as palm, fingers much shorter than palm, generally only half as long as palm; teeth of the proximal half of the cutting edges of the fingers quite small; carpus very narrowed at base, expanded at apex; fingers clothed with only short hairs; eggs very small and numerous, their length only 0.6 mm.

Length of adult male, 80 mm., length of adult female, 65 mm.

Types.—Holotype male (No. P.11988), allotype female (No. P.11989) and paratypes in the Australian Museum Collection.

Type Locality.—Black River, Macrossan, Queensland (October, 1943, E. F. Riek).

Distribution.—The species is known only from the type locality.

This species can be distinguished readily from the other small freshwater species on the size of the eggs and on the structure of the second periopods. On the size of the eggs one would be of the opinion that this was an estuarine species of the genus, but the specimens described above are from a purely freshwater habitat at least five miles above the tidal zone.

Macrobrachium lar (Fabricius), 1798.

(Figure 2.)

Palaemon lar Fabricius, 1798, Suppl. Ent. Syst., 402.

Palaemon ornatus Oliver, 1811, Enc. meth. Hist. nat. 8, 660.

Macrobrachium lar Holthuis, 1950, Siboga Exped. 39, Decapoda 10, 176.

This is a widely distributed species. The Australian specimens have a longer, more curved rostrum than is typical.

Description of Adult Male.—Telson with apex rounded, lateral spines short; rostrum rather short and stout, with a decided S-shaped curvature, the apex upturned, lateral carina not as strongly curved as the rostrum itself, rostrum dorsally with eight spines, the first two lying behind the orbit, lower margin with three spines, dorsal margin strongly convex over the basal half, apical portion concave, lower margin strongly convex; second periopods long and stout, coarsely, abundantly tuberculate but with the tubercles rather fine; merus definitely and considerably longer than the carpus, in some specimens about one-quarter as long again; palm much longer than either carpus or merus, almost as long as the two together; fingers much shorter than the palm, generally less than half its length; teeth of the cutting edges of the propodus and dactylus extremely large, propodus with tooth towards its base but dactylus with a still larger tooth about its middle, in addition, rudiments of two much smaller teeth more basad in some specimens; fingers devoid of obvious setae but external surface of dactylus densely clothed in short, stout spines.

The only definite Australian locality is the Roper River, north Australia. The type of *ornatus* was most probably collected somewhere on the north-west coast of Australia. The species can be distinguished from *rosenbergi*, which occurs on the eastern side of the Gulf and in Cape York, on the structure of the second periopods and on the shape of the rostrum.

Macrobrachium adscitum adscitum, sp. nov.

(Figure 3.)

Description of Adult Male.—Telson with apex short, acuminate, the inner of the lateral spines extending beyond the apex of the telson; rostrum short, deep in lateral view, with the apex directed forwards and in a few specimens slightly upturned at apex, upper surface slightly convex, lateral carina with only a very slight dip in the middle, lower margin convex, rostral teeth prominent, dorsally with from eight to eleven, but typically eight or nine, lower margin almost invariably with three teeth, rarely four; second periopods long and thin, except for the greatly swollen palm, appearing smooth but very finely tuberculate; merus slightly greater than carpus; fingers with only short, though sometimes dense hairs; carpus almost equal to palm; fingers as long as or slightly longer than palm.

Length of adult male, 75 mm., length of adult female, 45 mm.

Types.—Holotype male, allotype female and paratypes (No. P.3095) in the Australian Museum Collection.

Type Locality.—Accommodation Creek, near Ballandean, Queensland.

Distribution.—Queensland: Accommodation Creek; Oakey.

This species is characterized by the very swollen palm to the otherwise very long and thin second periopods. In some respects it approaches *atactum ischnomorphum* but differs noticeably in the relative length of the carpus.

Macrobrachium adscitum, subsp.

There is a very distinct subspecies from Angus River, Strathalbyn, south of Adelaide, South Australia, which differs mainly in the unswollen palm of the second periopods. It has the distinctive very long merus of *adscitum adscitum*. As the material examined was not sufficiently well preserved the subspecies has not been described.

Macrobrachium glypticum, sp. nov.

(Figure 4.)

Description of Adult Male.—Telson with the apex very short, only slightly acuminate, the inner of the lateral spines extending well beyond the apex of the telson; rostrum rather short, pointed, extending straight out, apex not upturned, both upper and lower margins convex, upper only slightly so, not very deep in lateral view, with the lateral carina straight; dorsally the rostrum bears eleven or twelve, occasionally more, small, close, teeth, the first three or four lying behind the orbit, lower margin with three, more rarely four or two teeth; second periopods massive, obviously, though finely, tuberculate, tubercles larger on carpus and merus; fingers appearing bare, with only very short hairs; all segments of second periopods stout, merus distinctly longer than carpus, carpus much shorter than palm, which is a little longer than merus, fingers somewhat shorter than palm, carpus only three times as long as wide at apex, base only half width at apex; teeth on cutting edges of fingers very small.

Length of adult male, 48 mm., length of adult female, 42 mm.

Types.—Holotype male (No. P.11992), allotype female (No. P.11993) and three paratypes in the Australian Museum Collection.

Type Locality.—Coen, north Queensland (21 Nov., 1945, Wassell).

The female bears eggs of rather large size. One of the second periopods of the holotype male is quite small and bears numerous long setae, over all segments but particularly on the fingers. This species is very distinct, and, although it has a long merus as in *adscitum*, does not appear to be closely allied to that species. Its affinities would seem to be with some Asiatic species as are the other northern species of our fauna.

Macrobrachium atactum atactum, sp. nov.

(Figure 5.)

Description of Adult Male.—Telson with apex short, acuminate, the inner of the lateral spines extending well beyond the apex of the telson; rostrum long, slightly convex above and without the apex slightly upturned, moderately deep in lateral view, with the lateral carina showing only a slight upward curvature, with the greater part of the rostrum lying above it; dorsally the rostrum bears seven to ten teeth, the first two or three lying behind the orbit, lower margin with three to five teeth, strongly convex; second periopods long and thin, appearing smooth, though very finely tuberculate; fingers appearing smooth, with only short hairs; merus almost equal to the carpus; carpus as long as palm; fingers not quite as long as palm; palm five to six times as long as wide at apex; teeth on the basal half of the cutting edges of the fingers moderately developed.

Length of adult male, 80 mm., length of adult female, 55 mm.

Types.—Holotype male (No. P.12007), allotype female (No. P.12008) and paratypes in the Australian Museum Collection.

Type Locality.—Conondale, Mary River, Queensland.

Distribution.—Conondale (25 Apr., 1943, E. F. Riek); Running Creek, Queensland-New South Wales Border (14 Apr., 1941, E. F. Riek); Sandy Creek, Moorooka, Brisbane (23 May, 1941, E. F. Riek); Mt. Coot-tha, Brisbane (18 May, 1941, E. F. Riek).

Macrobrachium atactum ischnomorphum, nov.

(Figure 6.)

Description of Adult Male.—Telson as in *atactum atactum*; rostrum long and thin, extending almost straight out, upper margin almost straight, with a very slight upturning of the apex, not particularly deep in lateral view, with the lateral carina showing a definite upward curvature, with a little more than half the rostrum lying above it; dorsally the rostrum bears eight to ten teeth, the first two or three lying behind the orbit, lower margin with three to five teeth, moderately convex; second periopods long and very thin, appearing smooth though very finely tuberculate, fingers clothed in only very short hairs; merus almost equal to carpus; carpus generally longer than the palm but sometimes only equal to it; fingers longer than the palm; palm slightly swollen over its whole length; carpus seven times as long as wide; teeth on the cutting edges of the fingers usually quite small.

Length of adult male, 85 mm., length of adult female, 45 mm.

Types.—Holotype male (No. P.11995), allotype female (No. P.11996) and paratypes in the Australian Museum Collection.

Type Locality.—Elimbah Creek, Elimbah, Queensland (23 April, 1943, E. F. Riek).

Distribution.—Queensland: Elimbah; Waraba Creek, Caboolture (4 June, 1943, E. F. Riek).

This subspecies differs from the typical in the longer, thinner periopods with longer fingers and longer, less convexed rostrum which approaches that of *atactum sobrinum*.

Macrobrachium atactum sobrinum, nov.

(Figure 7.)

Description of Adult Male.—Telson as in *atactum atactum*; rostrum very long and thin, with the upper margin very slightly convexed over the basal half, apex very slightly upturned, rostrum moderately deep in lateral view, with the lateral carina showing a decided dorsal curvature so that the greater part of the rostrum lies above it; dorsally

the rostrum bears nine to twelve teeth, usually ten, the first two or three lying behind the orbit, lower margin with three to five spines, generally five, strongly, evenly convex; second pereopods long and thin, appearing smooth though very finely tuberculate; fingers clothed generally with dense but short hairs; merus almost equal to the carpus; carpus almost as long as the palm; fingers not quite as long as palm; carpus about six times as long as wide at apex; carpus rather more narrowed at base than in typical subspecies; teeth at bases of fingers small.

Length of adult male, 85 mm., length of adult female, 50 mm.

Types.—Holotype male (No. P.11998) allotype female (No. P.11999) and paratypes in the Australian Museum Collection.

Type Locality.—Muttaborra, Queensland (27 May, 1945, E. F. Riek).

Distribution.—Queensland: Muttaborra; Longreach (25 May, 1945, E. F. Riek); Diamantina River (November, 1931, J. R. Kinghorn). Northern Territory: Lawn Hill Creek; Avon Downs, near Camooweal (May, 1935, Troughton and Fletcher).

This subspecies differs from the typical in the larger rostrum and somewhat more hirsute fingers.

***Macrobrachium australiense australiense* Holthuis, 1950.**

(Figure 10.)

Palaemon australis Ortmann, 1891 (non Guérin Méneville, 1838) Zool. Jb. (Syst.) v, 709.

Macrobrachium australiense Holthuis, 1950 (nom. nov.), Siboga Exped. 39, Decapoda 10, 174.

Ortmann described this species from a series of specimens from three different localities in Queensland (Gayndah, Rockhampton and Peak Downs). The typical subspecies is redescribed from material collected at Enoggera Creek, Brisbane.

Description of Adult Male.—Telson with the apex short, acuminate, the inner of the lateral spines extending well beyond the apex of the telson; rostrum moderately long, upper surface gently convex with only a slight upturning at apex, rather deep in lateral view, with the lateral carina almost straight but with a slight upward curvature at the apex, with a little more than half the rostrum lying above the carina; dorsally the rostrum bears eight to ten teeth, the first two or three lying behind the orbit, lower margin with three to five spines, moderately convex; second pereopods rather stout, obviously though finely tuberculate; fingers clothed with long dense hairs; merus almost equal to carpus; carpus as long as palm; fingers much shorter than the palm, carpus five to six times as long as wide at apex; teeth of cutting edges of fingers only moderately developed.

Length of adult male, 65 mm., length of adult female, 55 mm.

Distribution.—Gayndah; Rockhampton: Peak Downs; Enoggera Creek, Brisbane (9 October, 1943, and 7 December, 1941, E. F. Riek).

This species differs from *atactum* noticeably in the structure of the pereopods.

***Macrobrachium australiense eupharum*, nov.**

(Figure 8.)

Description of Adult Male.—Telson with the apex short, acuminate, the inner of the lateral spines extending well beyond the apex of the telson; rostrum short, strongly convex above, apex almost without any upturning, deep in lateral view, with the lateral carina straight; dorsally the rostrum bears eight to ten teeth, the first one or two lying behind the orbit, lower margin with three or four spines, both the dorsal and ventral

margins strongly convex; second periopods large, stout, obviously though finely tuberculate; fingers clothed with long, dense hairs; merus almost equal to carpus; carpus shorter than palm; fingers considerably shorter than palm; carpus four to four and one-half times as long as wide at apex; teeth of cutting edges of fingers moderately enlarged.

Length of adult male, 60 mm., length of adult female, 45 mm.

Types.—Holotype male (No. P.12001), allotype female (No. P.12002) and paratypes in the Australian Museum Collection.

Type Locality.—Burdekin River, Macrossan, Queensland (October, 1943, E. F. Riek).

Distribution.—Burdekin River (October, 1943, and January, 1942); Rosewood (February, 1944, E. F. Riek).

Ovigerous females were collected in October. This subspecies can be recognized readily by its very convex rostrum and the hirsute fingers of the finely tuberculate second periopods.

***Macrobrachium australiense cristatum*, nov.**

(Figure 9.)

Specimens of this subspecies have been described and figured as a variety of *australis* by McNeill (1929).

Description of Adult Male.—Telson as in *eupharum*; rostrum short, convex above, apex not upturned, differs from *eupharum* in being slightly longer and thinner; second periopods large, very stout, propodus slightly swollen, obviously though finely tuberculate; fingers clothed with long dense hairs; merus almost equal to carpus; carpus shorter than palm; carpus four to four and one-half times as long as wide at apex, teeth of fingers generally quite large, limited to the basal half.

Length of adult male, 60 mm., length of adult female, 40 mm.

Types.—Holotype male (No. P.12004), allotype female (No. P.12005) and paratypes in the Australian Museum Collection.

Type Locality.—Pallal, Horton River, near Bingara, New South Wales.

Distribution.—N.S.W.: Pallal, Horton River and Johnstone River; Bourke; Narrabri, Namoi River; Junction Namoi and Barwon Rivers; Deniliquin; freshwater stream near Broken Hill; Wirrabilla Lagoon, Collarenebri; Riverina District; Cotter River, Australian Capital Territory; Murrumbidgee River, Australian Capital Territory.

This subspecies is very close to *eupharum* but differs slightly in the less convex rostrum though more obviously in the somewhat swollen palm of the very stout periopods and also less tuberculate periopods.

***Macrobrachium australiense crassum*, nov.**

(Figure 11.)

Description of Adult Male.—Telson as in typical subspecies; rostrum long and rather thin, convex at base above but concave at apex, apex distinctly upturned, lateral carina with a slight upward curvature, with considerably more than half the rostrum lying above it; teeth of rostrum large, well spaced, eight or nine above, with two or three lying behind the orbit, three or four below, lower margin gently convex; second periopods large and stout, obviously tuberculate, more so than in the typical subspecies; fingers clothed with long, very dense hairs; merus almost equal to the carpus; carpus about equal to the palm; fingers almost equal to the palm; carpus five times as long as wide at the apex.

Length of adult male, 90 mm., length of adult female, 65 mm.

Types.—Holotype male (No. P.12010), allotype female (No. P.12011) and paratypes in the Australian Museum Collection.

Type Locality.—Cairns, Queensland (30 January, 1946, Wassell).

Distribution.—Cairns; Kuranda (16 August, 1942, I. S. R. Munro).

The specimens from Cairns were ovigerous. This is a very distinct subspecies which would probably best be considered a distinct species. The rostrum is so different and the pereopods are more coarsely tuberculate and the fingers large and very densely hirsute.

Genus *Palaemonetes* Heller, 1869.

Subgenus *Palaemonetes* Heller, 1869.

Genotype, *Palaemon varians* Leach, 1814.

Mandible without a palp; branchiostegal spine present; supraorbital spine absent; propodus of fifth pereopods with transverse rows of setae in the distal part of the posterior margin; outer margin of the uropodal exopod ending in a tooth and a movable spine.

Palaemonetes australis Dakin, 1915.

Palaemonetes australis Dakin, 1915, Proc. Zool. Soc. London, 572.

Palaemonetes australis Holthuis, 1950, Siboga Exped. 39 Decapoda 10, 10.

This is the only recorded Australian species.

Types.—Location of types not indicated.

Type Locality.—Northam (River Avon), Western Australia (W. J. Dakin).

Distribution.—Western Australia. Northam; Gin Gin Brook, 50 miles north of Perth; Bibra Lake; Serpentine River.

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