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TWO NEW STOMATOPOD CRUSTACEANS FROM AUSTRALIA

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Late in 1968 John C. Yaldwyn, then Curator of Crustacea at the Australian Museum, forwarded three small stomatopods from the collections of that Museum to me for study. One of the specimens proved to be a juvenile of a previously known Australian species, *Anchisquilla mcneilli* (Stephenson); it differs enough from published accounts of larger specimens to justify inclusion here of some descriptive notes. Both of the other specimens represent undescribed species belonging to two genera already recorded from Australian waters, *Heterosquilla* (Family Lysiosquillidae) and *Manningia* (Family Gonodactylidae); both of the new species are described herein.

I am indebted to Dr Yaldwyn for bringing these specimens to my attention and making them available for study. The drawings were made by my wife Lilly.

Descriptive terms used herein have been explained in detail in an earlier paper (Manning, 1966). All of the specimens have been deposited in the Australian Museum.

Family **GONODACTYLIDAE** Giesbrecht, 1910

Genus **Manningia** Serène, 1962

The current composition of this genus attests to our limited knowledge of the species of stomatopods. When *Manningia* was recognized by Raoul Serène in 1962 it contained but one species, *M. pilaensis* (de Man, 1888). In 1966 I described the second species, *M. notialis*, from the coasts of northeastern Australia, and in 1967 I described a new species from Viet-Nam, *M. serenei*. In the same paper I pointed out that another specimen recorded in the literature from the Gulf of Aden probably represented a distinct species. L. B. Holthuis described that species in 1967 as *M. amabilis*; all of his material was from the Red Sea. Holthuis also reported an extension of the range of *M. pilaensis* to Bombay, India, from where it subsequently was recorded by Chhapgar and Sane (1968); that species had not been recorded previously from localities west of the Mergui Archipelago, Burma, the type-locality. The range of *M. amabilis* was extended to western West Pakistan by Tirmizi and Manning (1968).

In addition to the new species described herein, *M. australiensis*, there is another undescribed species which occurs in the Gulf of Guinea; a description of the West African species, the first representative of the genus to be found outside of the Indo-West Pacific region, is in preparation in a review of the West African stomatopod fauna.

The six known species of *Manningia* may be distinguished by means of the following key:

Key to Species of Manningia

1. Basal prolongation of uropod lacking rounded lobe between apical spines 2

   Rounded lobe present between apical spines of basal prolongation of uropod 4

2. Rostral plate with apical spine; merus of raptorial claw with inferodistal spine on outer face .....

   M. pilaensis (de Man, 1888); China, Mergui Archipelago, Bombay.

   Rostral plate without apical spine; outer face of merus of claw unarmed 3

3. Rostral plate broadly rounded anteriorly and anterolaterally; fifth abdominal somite with posterolateral spine .....

   M. amabilis Holthuis, 1967; Red Sea, Gulf of Aden, West Pakistan.

   Rostral plate bluntly angled anteriorly and anterolaterally; fourth and fifth abdominal somites each with posterolateral spine .....

   M. notialis Manning, 1966; northeastern Australia.

4. Fifth abdominal somite with 2 spines on posterior margin, above posterolateral angle .....

   Manningia n. sp.; Gulf of Guinea.

   Fifth abdominal somite not armed above posterolateral angle 5

5. Outer face of merus of raptorial claw with inferodistal spine; rostral plate angled anterolaterally; intermediate carinae of telson anteriorly separate from laterals .....

   M. serenei Manning, 1967; Viet-Nam.

   Outer face of merus of raptorial claw unarmed; rostral plate broadly rounded anterolaterally; intermediate carinae of telson fused anteriorly with laterals .....

   M. australiensis new species.

Manningia australiensis new species

Fig. 1

Holotype.—1♀, 32 mm; off Gillett Cay, Swains Reefs, Queensland; dredged; 35–40 fms; Swain Reef Expedition, Australian Museum party; October, 1962; reg. no. P. 16288.

Description:

Cornea bilobed, outer margin of eye longer than inner (fig. 1*a*); eyes not extending to end of first segment of antennular peduncle; ocular scales low, fused medially.

Antennular peduncles elongate, more than four-fifths as long as carapace.

Antennal scale slender, slightly curved, almost half as long as carapace, margins completely lined with setae; antennal protopod with 1 ventral papilla.

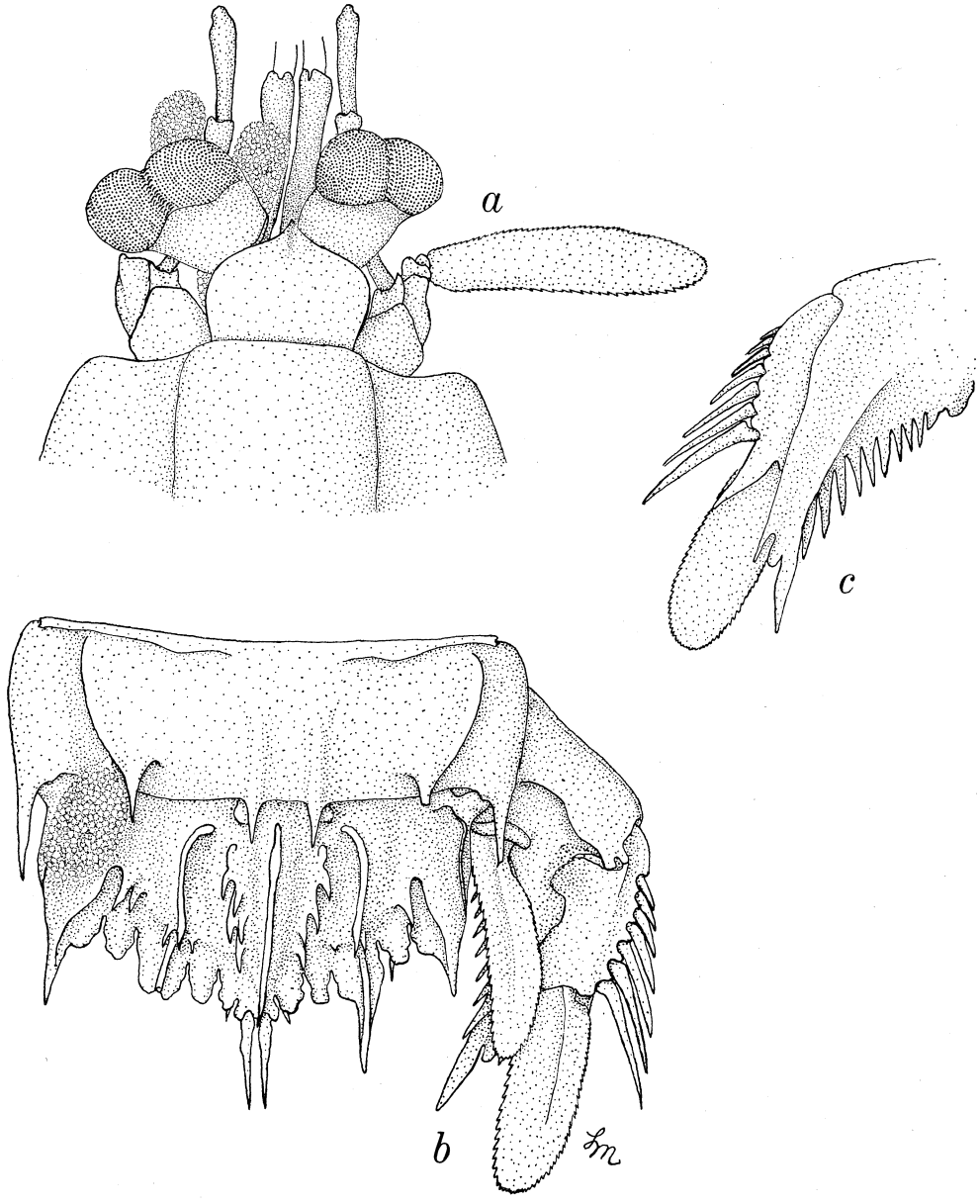

Figure 1.—*Manningia australiensis* new species, female holotype. *a*, anterior portion of body; *b*, last abdominal somite, telson, and uropod; *c*, uropod, ventral view. (Setae omitted).

Rostral plate (fig. 1*a*) cordiform, broader than long, evenly rounded laterally; short apical spine present; shallow, longitudinal, median groove present on anterior fourth.

Carapace smooth, narrowed anteriorly, anterolateral angles rounded; reflected marginal carinae present posterolaterally.

Raptorial claw stout; dactylus with 4 teeth, outer margin with prominent basal notch; propodus broad, superior margin fully pectinate; carpus with 2 teeth on upper margin; merus lacking inferodistal spine on outer margin.

Mandibular palp and 5 epipods present.

Lateral process of fifth thoracic somite inconspicuous, concealed under posterolateral angles of carapace; lateral processes of sixth and seventh thoracic somites rounded laterally; endopods of walking legs two-segmented, distal segment ovate on first 2 legs, slenderer on last; median ventral keel of eighth thoracic somite very low, inconspicuous.

Abdomen smooth, flattened, distinct carinae present on last 3 somites only; fourth and fifth somites each with lateral carina above lateral, longitudinal groove, carinae on fifth somite longer, better defined; first 5 abdominal somites unarmed; sixth somite (fig. 1*b*) with 3 pairs of posterior spines, intermediates set anterior to posterior margin; submedian spines with low, inconspicuous longitudinal carinae, outer margin of intermediate teeth strongly carinate; dorsal surface of sixth somite smooth between submedian and intermediate carinae; sixth somite with ventrolateral spinule anterior to articulation of each uropod.

Telson (fig. 1*b*) almost twice as broad as long, with 3 pairs of marginal teeth, submedians movable, with bases appressed; intermediate and lateral teeth slender, sharp, each with short dorsal carina; submedian denticle absent; 2 broad intermediate denticles present, outer with ventral spinule, inner spined distally; 2 broad lateral denticles, with ventral spinule, present; each ventral spine with rounded lobe present dorsally between apex and point of origin on ventral surface of telson, lobe visible only in lateral view; median carina slightly inflated anteriorly, terminating posteriorly in slender spine; accessory median carinae interrupted, subdivided into 4 or 5 erect spinules in irregular, curved row; submedian carinae entire, terminating in distal spine, apex flanked posteriorly by outer spinule and inner denticle; intermediate carinae reduced, present as long spine connected anteriorly to lateral carina by curved ridge; apical spine flanked by spinule on 1 side; lateral and marginal carinae both entire.

Uropod (figs 1 *b*, *c*) with 7 slender movable spines on outer margin of proximal segment of exopod, distalmost extending beyond midlength of distal segment; endopod slender, curved; basal prolongation of uropod with 9–10 fixed spines on inner margin and broad, rounded lobe between distal spines.

Colour.—Pattern almost completely faded in type; carapace with pair of dark spots anteriorly on gastric grooves, transverse bar of dark pigment on posterior third, and dark area along posterolateral angles; thoracic and anterior abdominal somites with few scattered dark chromatophores medially; sixth abdominal somite with traces of dark pigment along carinae; telson with traces of dark spots between dorsal carinae and along lateral margin.

Measurements.—Female holotype, only known specimen, total length 32 mm. Other measurements, in mm: carapace length 6.8; cornea width 1.9; rostral plate length 1.5, width 2.0; fifth abdominal somite width 7.0; telson length 2.8, width 5.3.

Etymology.—The name alludes to the occurrence of the species in Australian waters.

Discussion:

M. australiensis can be distinguished from the other known species in the genus by the shape of the rostral plate, which is cordiform in outline with rounded lateral margins and a short apical spine. It shares the rounded lobe between the apical spines of the basal prolongation of the uropod with *M. serenei* and the undescribed species known from the Gulf of Guinea, and it differs from the other known species, *M. amabilis*, *M. notialis*, and *M. pilaensis*, in this feature. The new species from the Gulf of Guinea can be distinguished from *M. australiensis* by the posterior spines present on the fifth abdominal somite.

M. australiensis shares the unarmed inferodistal angle of the merus of the claw with *M. notialis*, *M. amabilis*, and the West African species; the merus is armed in both *M. pilaensis* and *M. serenei*. Although the unique holotype is slightly damaged, all of the diagnostic features are readily discernible.

The body of the holotype is covered with numerous ovate, stalked bodies which appear to be egg capsules containing a fine, granular yolk; the capsules are about 1.6–2.0 mm high and 0.6–1.0 mm in diameter. Two of the capsules are shown in fig. 1*a*, under the left eye, and one is shown in fig. 1*b*, attached to the surface of the sixth abdominal somite. The origin of these attached bodies is unknown.

Distribution.—Known only from the type-locality off Gillett Cay, Swains Reefs, Queensland, Australia.

Family **LYSIOSQUILLIDAE** Giesbrecht, 1910

Heterosquilla (**Heterosquilloides**) **insueta** new species

Fig. 2

Holotype.—1♂, 23 mm; Great Australian Bight, Western Australia; 33° 43′ S, 125° 04′ E; 77 m; CSIRO Fisheries, col.; 7th July, 1962; reg. no. P. 16286.

Description:

Eye small, cornea bilobed, set almost transversely on stalk; eyes extending anteriorly to midlength of antennular peduncle; ocular scales small, rounded, fused medially.

Antennular peduncle slightly more than half as long as carapace; antennular processes visible lateral to rostral plate as sharp, anteriorly-curved spines.

Antennal scale small, less than half as long as carapace; no papillae visible on antennal protopod.

Rostral plate (fig. 2*a*) with short, broad basal portion, rounded laterally, and long apical spine, extending beyond eyes; apical spine carinate dorsally, lacking subapical ventral spine.

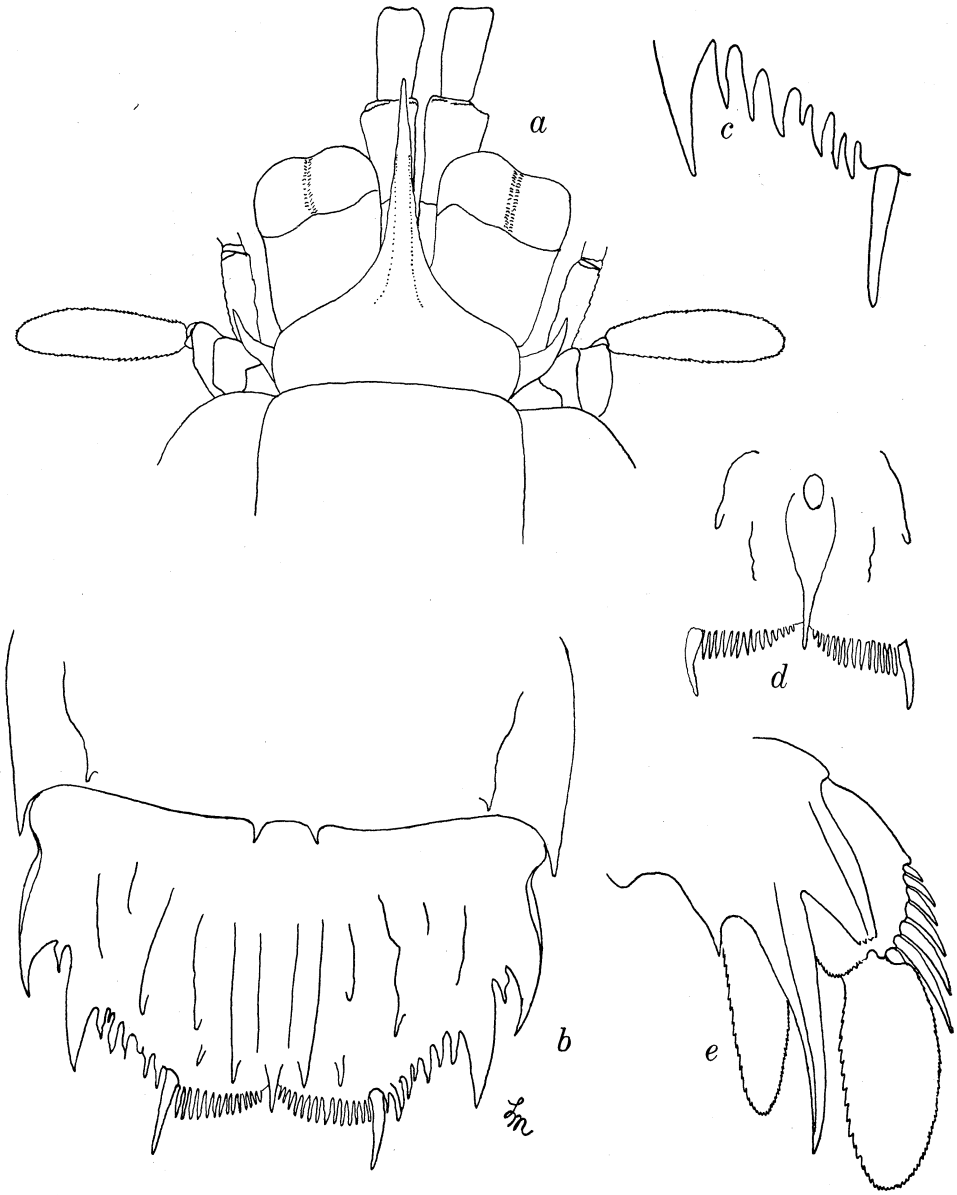

Figure 2.—*Heterosquilla* (*Heterosquilloides*) *insueta* new species, male holotype. *a*, anterior portion of body; *b*, last abdominal somite and telson; *c*, intermediate denticles of right side, ventral view, enlarged; *d*, meridian portion of ventral surface of telson; *e*, uropod, ventral view. (Setae omitted.)

Carapace smooth, short, narrowed anteriorly, without carinae or spines.

Dactylus of raptorial claw with 6 teeth, outer margin flattened, with prominent basal notch; propodus slender, upper margin fully pectinate; dorsal ridge of carpus terminating in slender spine; ischium and merus of claw unarmed.

Mandibular palp and five epipods present.

Fifth thoracic somite lacking prominent lateral process; lateral processes of sixth and seventh somites flattened laterally, rounded anterolaterally, more angled posterolaterally, process of seventh somite larger than that of sixth; basal segments of walking legs each with posterior ventrally-directed spinule; endopods of walking legs two-segmented, distal segment subcircular on first leg, more ovate on second, very slender on third; eighth somite lacking noticeable median ventral keel or prominence.

Abdomen smooth, depressed, first 5 somites unarmed; sixth somite (fig. 2*b*) with 3 pairs of dorsal spines, small submedians and longer laterals on posterior margin, intermediates each at end of short, curved carina, apical spine anterior to posterior margin; sixth somite with broad, triangular lobe in front of articulation of each uropod.

Telson (fig. 2*b*) badly damaged on type, apparently with raised median area, terminating in posterior median spine; dorsal surface with 6 longitudinal carinae between midline and marginal carina, length variable, fifth shortest, second, third and fourth terminating in apical spines; surface of telson also ornamented with denticle set posteriorly to third carina, and, possibly, an anterolateral tubercle between intermediate and lateral spines of sixth abdominal somite; 3 pairs of marginal teeth present, submedians movable; 14–15 slender submedian denticles present, arranged in convex row on each side of midline, inner denticles smaller than outer; 7–8 intermediate denticles (fig. 2*c*) present; anal pore on ventral surface (fig. 2*d*) flanked posteriorly by prominent median spine and laterally by 2 pairs of short carinae, outermost each terminating in short spine.

Basal segment of uropod with dorsal carina extending toward dorsal spine; 7 movable spines present on outer margin of uropodal exopod, distalmost extending beyond midlength of distal segment; inner, distal angle of proximal segment of exopod with 9 stiff setae; distal segment of exopod longer than proximal; endopod short, triangular, proximal portion of outer margin with slight fold; inner spine of basal prolongation of uropod much longer than outer (fig. 2*e*), both with ventral keel; slender spine present proximally at articulation of endopod.

Colour.—The colour pattern has completely faded in the holotype.

Measurements.—Unique male holotype, total length 23 mm. Other measurements, in mm: carapace length 4.7; cornea width ca. 1.2; rostral plate length 2.4, width 1.8; telson length 2.0, width 3.9.

Etymology.—The name is from the Latin, insuetus, meaning unusual, alluding to the large number of intermediate denticles on the margin of the telson.

Discussion:

Heterosquilla insueta basically resembles *H. brazieri* (Miers) and *H. latifrons* (de Haan) in such features as shape of eye, shape of rostral plate, presence of six

teeth on the claw, and the postanal spine. It can be distinguished readily from both *H. brazieri* and *H. latifrons* by the absence of a subapical ventral spine on the rostral plate and the occurrence of the three pairs of spines on the sixth abdominal somite. The presence of these spines on the sixth abdominal somite, the large number of intermediate denticles on the telson, and the postanal spine will immediately distinguish *H. insueta* from all other species in the genus.

Although the holotype of *H. insueta* is in relatively poor condition, with the eyes, abdomen, and telson all damaged, the features which distinguish it from other species are clearly discernible. It is possible that a specimen with an intact telson would exhibit dorsal ornamentation different from that recorded here.

None of the species of the subgenus *Heterosquilloides* known until now have had more than four intermediate denticles on the telson, so *H. insueta* is unique in the subgenus in this respect. The original subgeneric diagnosis given by me (1966, p. 124) should be amended to "4 or more intermediate denticles on telson." Species in the nominate subgenus have but two intermediate denticles on the telson.

The type is obviously a juvenile, for the male copulatory tubes are poorly developed, but it seems unlikely that its major diagnostic features will change with age. The postanal spine, dorsal spines on the sixth abdominal somite, and teeth on the dactylus of the claw are not features that normally change after the postlarval stage. Features of this specimen which could change with age are the length of the rostral spine, the configuration of carinae on the telson, and the position of the marginal denticles of the telson.

Most species of *Heterosquilla* have one or more papillae on the antennal protopod; I can find no papilla on the holotype of *H. insueta*. Nothing is known about the development of this papilla, and it may develop at a later stage.

This is the third species of *Heterosquilla* to be recorded from Australasian waters. *H. tricarinata* and *H. brazieri* were both redescribed by me in 1966.

Distribution.—Known only from the type-locality, 33° 43′ S, 125° 04′ E, in the Great Australian Bight, Western Australia.

Family **SQUILLIDAE** Latreille, 1803

Anchisquilla mcneilli (Stephenson, 1953)

Squilla mcneilli Stephenson, 1953, p. 213, fig. 4.—Manning, 1966, p. 99 [other references]; 1968, p. 127 [listed; transferred to *Anchisquilla*].

Material.—1♀, 25 mm; off Cronulla, near Sydney, New South Wales, Australia; dredged; 100 m; R. J. MacIntyre, CSIRO; October, 1964; reg. no. P. 16279.

Remarks.—This small juvenile female, which is about 20 mm smaller than any specimens reported to date, differs from adults in several features. The apex of the rostral plate is more acute, and, when the plate is deflexed, the sharp median carina appears as a small apical spine. The cornea is noticeably more inflated. The carapace completely lacks the median carina, and the carinae of the thoracic and abdominal somites are not nearly so well developed as in adults. The spination of the abdominal carinae is reduced, for none of the carinae anterior to the fourth somite are armed posteriorly; in adults the intermediate carinae of the second to sixth

somite are all provided with spines, and the lateral and marginal carinae of all of the somites are armed. Finally, the juvenile differs from adults in having a much more prominent lobe between the spines of the basal prolongation of the uropod.

Neither Stephenson (1953) nor Manning (1966) mentioned the very prominent falcate ventral spine on the midline of the eighth thoracic somite.

In other respects, including the colour pattern, this specimen agrees well with accounts in the literature.

The species is known from numerous localities off New South Wales and from Western Australia, in depths between 46 and 164 meters.

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