

1965

FROM RECORDS OF THE SOUTH AUSTRALIAN MUSEUM, VOL. 15, No. 1  
6TH OCTOBER, 1965

---

---

A REDESCRIPTION OF THE AUSTRALIAN SPIDER CRAB  
"*EURYNOME GRANULOSA*" BAKER CRUSTACEA,  
(BRACHYUA, MRAJID)

By D. J. G. GRIFFIN, ZOOLOGY DEPARTMENT, UNIVERSITY OF TASMANIA, AUSTRALIA

---

---

Printed in Australia by W. L. HAWES, Government Printer, Adelaide

**CARDED**  
**APR 13 1967**

**A REDESCRIPTION OF THE AUSTRALIAN SPIDER CRAB  
"EURYNOME GRANULOSA" BAKER (CRUSTACEA,  
BRACHYURA MAJIDAE)**

By D. J. G. GRIFFIN, ZOOLOGY DEPARTMENT, UNIVERSITY OF  
TASMANIA, AUSTRALIA

Text fig. 1-5

**SUMMARY**

The majid crab, *Eurynome granulosa*, known only from South Australia, is redescribed and figured from four specimens, including the holotype, and its systematic position discussed. Its numerous similarities to *Chionognathus reini*, a Japanese species, are emphasized. Among the species at present placed within *Eurynome*, *E. granulosa* stands closest to the South African *E. elegans*.

**INTRODUCTION**

The genus *Eurynome* Leach, at present containing a total of nine species of small majid spider crabs of the subfamily Pisinae, has recently been reviewed and its limits discussed (Griffin, 1964). The genus is distributed throughout the Indo-West Pacific, Mediterranean and East Atlantic, at depths of around 100 fathoms. Characteristically, the carapace in these crabs is pyriform and bears peculiar, flat-topped tubercles, or large spinulated plates, the former arranged in distinct groups and the chelipeds resemble those of a parthenopid crab. However, other equally important characters, such as the number of free segments of the abdomen, details of the orbit and form of the basal antennal article, seem to have been overlooked in a few cases.

Australia is known to possess a single species of the genus, *E. granulosa*, described by Baker in 1906 from a single female dredged in 104 fathoms off the South Australian coast. It has since been figured and briefly described by Hale (1927) but the species is poorly known.

Baker's (1906) original description of *E. granulosa* was detailed but the figures were hardly adequate enough to allow comparison of this species with others at present placed in the genus. The exact form of the third maxillipeds, basal antennal article, supraorbital and

infraorbital margins and ornamentation of the carapace were not made clear, but have an important bearing on the systematic position of *C. reini*. In the present paper *E. granulosa* is redescribed from the holotype and its relationships to the South African *E. elegans* Stebbing, 1921 and to the Japanese *Chionognathus reini* (Balss, 1924) are also considered. The terminology used here follows that of Rathbun (1925) and the system of measurements are those used by Garth (1958).

This study has been made possible by the forwarding to me, through Dr. John Yaldwyn of the Australian Museum, Sydney, of the holotype, and three other specimens of *Eurynome granulosa*, by Mr. F. J. Mitchell of the South Australian Museum, Adelaide. I wish to sincerely thank Mr. Mitchell for allowing me to examine these specimens, Dr. Yaldwyn for helpful discussion and Dr. E. R. Guiler of this Department for reading the manuscript.

## SYSTEMATICS

Family MAJIDAE

Subfamily Pisinae Alcock, 1896

Genus *Eurynome* Leach, 1815

***Eurynome granulosa* Baker, 1906**

Fig. 1-5

*Eurynome granulosa* Baker, 1906: 108, pl. i, figs. 3, 3a. Hale, 1927: 139, fig. 140.

*Holotype*: Female (S. Aust. Mus. reg. C.1156), carapace length 8 mm. This specimen is dried and in excellent condition with all the appendages present except the second left ambulatory leg and the carpus and following joints of the left third ambulatory leg.

*Type locality*: South Australian coast, dredged in 104 fathoms; Dr. Vercoe, collector.

*Localities subsequently reported*: None.

*Material examined*: In addition to the holotype, the dried carapaces of three other small specimens (S. Aust. Mus. reg. C.1160), 6-8 mm in length, South Australia, 100 fm, no date, no collector.

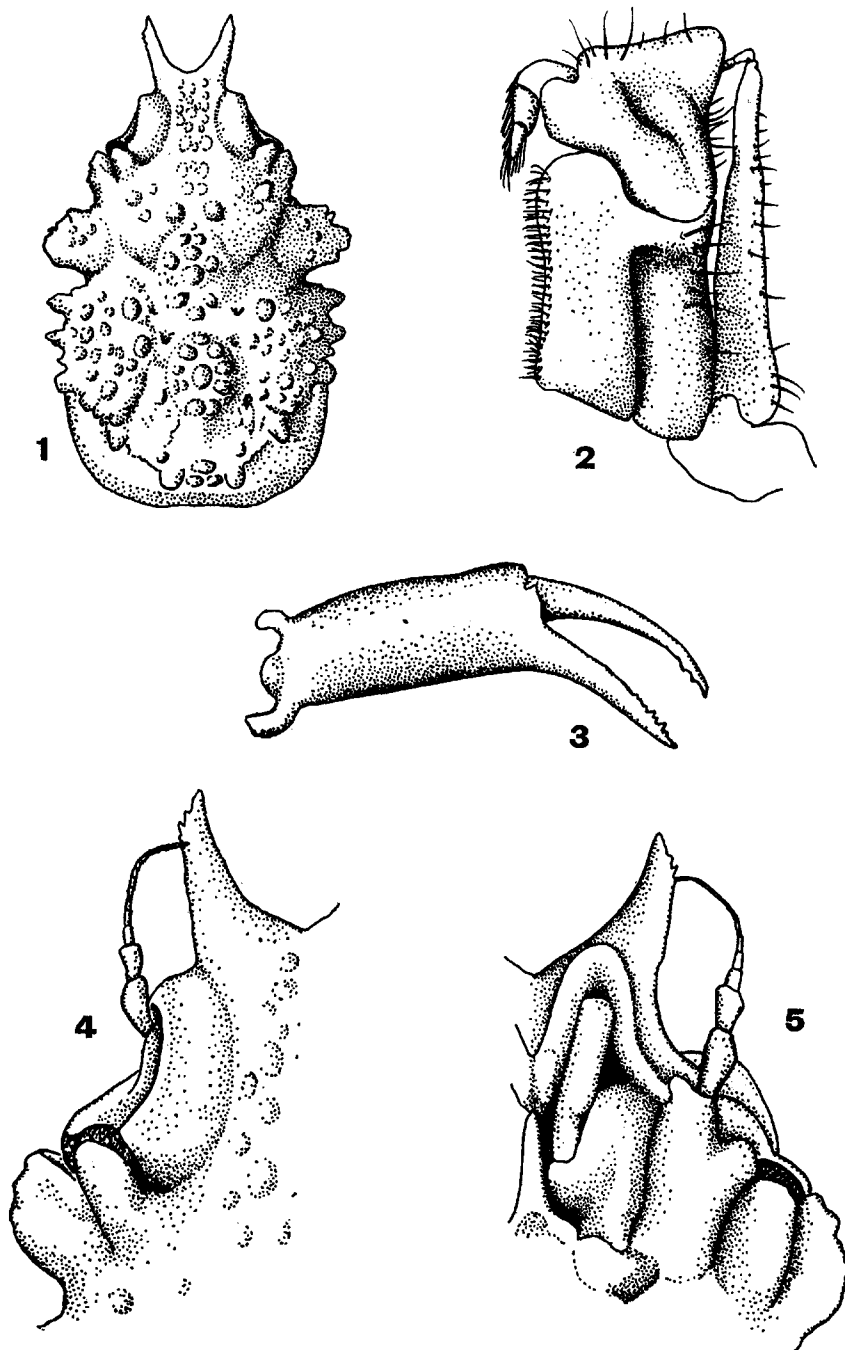


Fig. 1-5. *Eurynome granulosa* Baker. Holotype female, carapace length 8 mm.  
 1, carapace, dorsal view; 2, left third maxilliped; 3, outer view of right chela;  
 4, dorsal view of left orbit; 5, ventral view of left orbit.

*Diagnosis:* Carapace subpyriform to subovate, hepatic margins laterally extended; dorsal surface bearing simple tubercles arranged in groups medially only; branchial margins with several conical tubercles. Rostral spines widely separated, less than  $\frac{1}{8}$  carapace length. Ambulatory legs smooth. Basal antennal article bilobate anteriorly. Intercalated supraorbital spine a broad, distally rounded lobe.

*Description:* The following description is based on the holotype, an adult female.

Carapace subpyriform to subovate, convex, covered by short, stiff hairs, hepatic margins greatly expanded laterally, posterolateral margins smoothly rounded; dorsal surface covered by low tubercles arranged in the midline in distinct groups, regions well demarcated by prominent smooth grooves. Rostrum of two, short, slender, subconical spines, separated from close to base by a broad, U-shaped hiatus, moderately divergent, distance between tips barely exceeding basal width, somewhat greater than margins of rostrum; lateral surface close to tips armed with three short, sharp spinules.

Hepatic margins laterally extended as very prominent, rounded, irregularly emarginate, flattened lobes bearing a few small tubercles dorsally. Branchial margins bearing anteriorly three or four subconical tubercles situated subequidistantly, first and second tubercles pointed, last tubercle blunt, at widest part of carapace, a small tubercle situated midway between second and third tubercles, a group of three or four subdorsal tubercles curving around from last marginal tubercle to posteromedial corner of branchial region.

Dorsal surface of carapace covered by large and small, oval to circular tubercles arranged in groups on the meso-, meta-, and urogastric regions and on the cardiac and intestinal regions. Proto-gastric regions almost smooth, bearing a few scattered tubercles, branchial regions bearing numerous irregularly arranged, crowded tubercles. Mesogastric region covered for its entire length by close set, small tubercles, increasing slightly in size posteriorly; metagastric region with six tubercles, five arranged in a transverse oval around a central one, posterior tubercles larger; urogastric region with three tubercles, slightly smaller than metagastries, arranged in a semicircle, two anterior, submedial, one posterior, medial; cardiac region weakly tumid, bearing a group of 10 tubercles, a single medial one surrounded by nine arranged in an elongate oval; intestinal region almost smooth,

bearing close to posterior margin a group of three close-set tubercles, one anterior, medial, two posterior, submedial, the group flanked by two larger, blunt, subconical tubercles. Protogastric regions with a triangular group of three small tubercles laterally, close to base of postorbital lobe and a pair of large, submedial tubercles slightly behind and close to, posterior margin of mesogastric region.

Orbit consisting above of supraorbital eave, intercalated spine and postorbital lobe, closely approximated, separated by narrow fissures; supraorbital eave moderately wide, sharply angled antero-laterally, nowhere extended as lobes or spines, smooth; intercalated spine a prominent, broad lobe, rounded distally; postorbital lobe broad, weakly depressed, tip rounded, posterolateral margin irregularly crenulate, anterior face weakly excavated. Eyestalk stout, smooth, bulbous basally, only partly visible in either dorsal or ventral view when retracted; cornea terminal, circular. Orbit completed below by basal antennal article and a broad, distally rounded infraorbital lobe or plate separated from ventral edge of postorbital lobe only by a very narrow fissure.

Basal antennal article subrectangular, anterior edge deeply incised to become bilobate, medial lobe truncate, lateral lobe rounded, lateral and medial edges weakly concave; flagellum short, hardly extending beyond tip of rostrum, visible in both dorsal and ventral view.

Antennular fossae subovate, anterior margin a prominent ridge; interantennular spine poorly developed, blunt, weakly grooved medially; anterior process of epistome slender, sharply pointed. Epistome slightly wider than long, medial rim of opening of green gland elevated. Mouthfield subquadrate, anterior margin weakly concave, anterolateral angle elevated and weakly extended laterally. Pterygostomian regions subtriangular, densely tuberculate, separated by a very deep groove from inflated, densely tuberculate subhepatic regions.

Third maxillipeds widely gaping at midline. Ischium subrectangular, medial half of distal edge moderately extended anteriorly, rounded, lateral half weakly concave to bear merus, medial edge lacking teeth, overlain by a fringe of short hairs; outer surface deeply excavated medially as a narrow, longitudinal groove. Merus subquadrate, as wide as ischium but slightly shorter, anterolateral corner sharply angled and strongly expanded laterally as a triangular lobe, medial edge rounded, distal edge with a shallow, U-shaped notch,

outer surface with a deep longitudinal groove medially. Palp arising from notch of, and slightly longer than, merus, subcylindrical, stout, bearing a dense fringe of hairs laterally.

Chelipeds stout, hardly longer than carapace, subcylindrical except for weakly subtrigonal merus and compressed propodus, smooth, densely covered by a mat of fine, short hairs. Basis and ischium short, ischium extending along ventral surface of merus for but a short distance; merus and chela subequal, each about  $\frac{1}{3}$  total length of cheliped, carpus about  $\frac{1}{3}$  merus, dactyl as long as palm. Merus stout, following segments slender; carpus weakly ridged dorsally, otherwise smooth; palm of almost even height throughout, fixed finger bent at low angle from palm; fingers gaping linearly throughout their length, smooth along inner edges except distally, fixed finger with four small but nevertheless prominent conical teeth close to tip preceded by several irregular crenulations, dactyl with several irregular, low teeth, likewise close to tip.

Ambulatory legs short, first leg not greatly exceeding carapace in length, following legs decreasing regularly to last which is  $\frac{2}{3}$  carapace, approximately; surfaces smooth, densely covered by short, fine hairs. Meri long, about  $\frac{1}{3}$  total length of leg, carpi and propodi subequal, about  $\frac{1}{2}$  meri, dactyli about  $\frac{1}{2}$  propodi, terminating in a sharp, weakly falciform claw.

Abdomen seven-segmented, wide, covering all of sternum, extending laterally to base of ambulatory legs, anteriorly to posterior border of mouthfield; subovate, smooth except for a prominent medial ridge which appears on the first segment in dorsal view as a transversely oval tubercle.

*Measurements:* Female holotype: length 8 mm, width 5 mm, rostral length 1 mm, rostral width 1.3 mm, chelar length 2.5 mm.

*Remarks:* The three additional specimens differ from the holotype only in some minor features. In all, the posterolateral margin of the carapace is armed with about eight very small tubercles, there is a small tubercle on the posterolateral corner of the supraorbital cave and the hepatic margin is quadrilobate. In one specimen the first three lobes of the hepatic margin are produced into strong tubercles, the postorbital lobe is bilobate distally and the three spinules on the lateral surface of the rostrum near the tip are very blunt. Except for the arrangement of some of the tubercles on the gastric regions, the three specimens otherwise exactly resemble the holotype.

## GENERAL DISCUSSION

In the original description of *Eurynome granulosa*, Baker (1906) states that the tubercles of the dorsal surface of the carapace are not crowded and only the larger tubercles are mentioned; his figure 3 gives an entirely erroneous impression, showing the tubercles to be evenly distributed over the carapace. Examination of the holotype at once shows that in the midline at least, the tubercles are arranged in distinct groups, a feature characteristic of other species of the genus. The basal antennal article is correctly described as bilobate but Baker's figure 3a shows this structure divided for at least the anterior half by a distinct groove, whereas it is merely incised anteriorly and completely lacks a groove. Further, Baker's figure 3a does not make clear the precise form of the third maxillipeds, although his description is better. Other minor errors in Baker's description are that his figure 3 shows the antennae as extending well beyond the rostral spines, whereas it reaches only to the tip, and the fissures between the eave, intercalated spine and postorbital lobe appear larger than they are actually.

Among the species at present placed in *Eurynome*, *E. granulosa* appears to be most closely related to the South African *E. elegans* Stebbing. Elsewhere (Griffin, 1964) these two species have been considered to form a separate group—the “*elegans* section”—characterized by having the tubercles more or less evenly distributed over the carapace. In view of the description presented here, the section would better be characterized by the possession of simple, conical tubercles as opposed to the single or fused flat-topped tubercles of other species. The two species further agree in having the merus of the third maxillipeds laterally extended but several other species of the genus also exhibit this character. *E. elegans* differs from *E. granulosa* in that there is no intercalated supraorbital spine (according to Stebbing's plate XIII), and the posterior part of the carapace is densely covered by tubercles, while in *E. granulosa* these parts are almost smooth. No comparison is possible as regards the chelipeds since these are not described for *E. elegans*. The basal antennal article of *E. elegans* is apparently quite different from that of *E. granulosa* in being subovate, the hepatic margin is extended laterally only as a small, narrow lobe and the meri of the ambulatory legs are carinate dorsally.

Comparison of the specimens before me of *E. granulosa* and the descriptions and figures of the Japanese species, *Chionognathus reini*



(Balss) given by Yokoya (1933: 158, text-fig. 57, as *Eurynome reini*) and Sakai (1938: 273, text-figs. 34a, b, plate xxvii, fig. 2) shows some remarkable similarities between the two. Both species agree in the small size, subpyriform to subovate carapace covered by groups of tubercles along the midline, prominently laterally extended hepatic margins, presence of short tubercles along the anterior part of the branchial margins, slender widely divergent rostral spines, form of the eave (Yokoya's fig. 57 does not show an intercalated spine, but Sakai describes the eave as possessing this structure) and infra-orbital margin, form of the basal antennal article and interantennular spine and of the ischium and merus of the third maxillipeds. In addition, the abdomen is seven-segmented and the chelipeds and ambulatory legs are short. *C. reini* differs from *E. granulosa* in that the anterior part of the branchial margins widen distinctly posteriorly and are not subparallel, the rostral spines bear only a single small tubercle on the lateral surface near the tips, the carpus of the chelipeds bears a single small tubercle laterally, the fingers are short and finally the ischium and merus of the third maxillipeds are fused. It is upon this last character that Rathbun (1932) based the genus *Chionognathus*. Therefore it is important to note that in *E. granulosa*, while these two segments of the maxillipeds are distinct, the junction seems a very narrow, shallow, groove and it is possible that the merus is not freely moveable. In view of these similarities it seems probable that *E. granulosa* is closely related to *C. reini*, possibly more so than to *E. elegans*, or any other species at present placed in *Eurynome*.

*E. granulosa* differs from the type species of the genus *E. aspera* (see Hartnoll, 1960) in that the tubercles of the carapace are simple and conical, not flat-topped, the basal antennal article is not truncate anteriorly, the intercalated supraorbital spine is large, not minute, and in several other minor characters. With the important reservation that comparison of the pleopods is not possible, I do not think that any of these differences warrant the exclusion of *E. granulosa* from the genus *Eurynome*.

#### LITERATURE CITED

- Baker, W. H., 1906: Notes on South Australian Crustacea. Pt. 4. Trans. Roy. Soc. S. Aust. 30: 104-117, pls. I-III.
- Barnard, K. H., 1950: Descriptive Catalogue of the South African Decapod Crustacea (Crabs and Shrimps). Ann. S. Afr. Mus. 38: 837 pp., 154 figs.

- Garth, J. S., 1958: Brachyura of the Pacific Coast of America: Oxyrhyncha. Allan Hancock Pacif. Exped. 21: xii + 854 pp., 106 tables, 9 text-figs., 85 pls.
- Griffin, D. J. G., 1964: A Review of the genus *Eurynome* Leach (Decapoda, Majidae) and a new species from New Zealand. Crustaceana 6(3): 195-206, figs. 1-11.
- Hale, H. M., 1927: The Crustaceans of South Australia. Pt. 1. Adelaide: Govt. Printer. 201 pp., 202 figs.
- Hartnoll, R. G., 1960: A critical re-examination of the spider crab *Eurynome* Leach from British waters. Crustaceana 2(3): 171-182, figs. 1-7.
- Rathbun, M. J., 1925: The Spider Crabs of America. Bull. U.S. Nat. Mus. 129: xx + 613 pp., 153 text-figs., 283 pls.
- 1932: Preliminary descriptions of new species of Japanese crabs. Proc. biol. Soc. Washington 45: 29-38.
- Sakai, T., 1938: Studies on the Crabs of Japan. III. Brachygnatha, Oxyrhyncha. Tokyo: Yokendo Co. Pp. 193-364, 55 figs., 41 pls.
- 1961: New Species of Japanese Crabs from the Collections of His Majesty the Emperor of Japan. Crustaceana 3(2): 131-150, text-figs. 1-4, pls. III, IV.
- Stebbing, T. R. R., 1921: South African Crustacea. (Part XI of South African Crustacea for Marine Investigations of South Africa.) Ann. S. Afr. Mus. 18 (4): 453-468, pls. XIII-XX.
- Yokoya, Y., 1933: On the Distribution of Decapod Crustaceans inhabiting the Continental Shelf around Japan, chiefly based upon the Materials collected by S. S. Sôyô-Marû, during the Year 1923-1930. J. Coll. Agric. Tokyo Imper. Univ. 12(1): 1-226, text-figs. 1-71.

## RESUME

On réécrit et figure de quatre exemplaires, comprenant l'holotype, le crabe majid, *Eurynome granulosa*, ne connu que l'Australie du Sud, et on traite de sa position systematique. On donne emphase des similarités nombreuses avec *Chionognathus reimi*, un espèce du Japon. Entre les espèces comprises aux confins d'*Eurynome*, *E. granulosa* se rapproche le plus de l'*E. elegans* de l'Afrique du Sud.