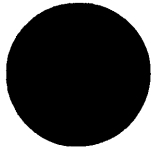


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***Scutumara enodis*, a new genus and species of grapsid crab
(Decapoda: Grapsidae) from Okinawa, Ryukyus, Japan**

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Scutumara enodis, a new genus and species of grapsid crab (Decapoda: Grapsidae) from Okinawa, Ryukyus, Japan

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Abstract. — A new genus and species of coral reef grapsid crab, *Scutumara enodis*, is described from Okinawa, Ryukyus, Japan. The new genus is allied to *Pseudograpsus* H. Milne Edwards, 1837, but differs in having the carapace longer than broad, the dorsal surfaces smooth and glabrous without distinct regions, the epigastric cristae weak or absent and the front well produced. Additionally, the fingers do not form a gape when closed. Two other species, *Pseudograpsus laniger* Tesch, 1918, and *Pseudograpsus miyakei* Nakamura & Takeda, 1972, are also tentatively referred to the genus *Scutumara*.

Introduction

In April 1992, the authors had an opportunity to make limited collections in the coral reefs of Okinawa. Most of the species obtained had been reported previously from the island. A peculiar small burrowing specimen proved to be a new species allied to *Pseudograpsus laniger* Tesch, 1918. A reappraisal of the genus *Pseudograpsus* as recognized at present showed that *P. laniger*, *P. miyakei* Nakamura & Takeda, 1972, and the new Okinawan species should be referred to a separate genus.

The present paper defines and compares the new genus (here named *Scutumara*) with *Pseudograpsus* s. str., as well as describes the new species, *Scutumara enodis*. All measurements, in millimetres, are of the carapace width and length respectively. The type specimen is deposited in the Zoological Reference Collection (ZRC)

of the Department of Zoology, National University of Singapore.

Taxonomy

Grapsidae MacLeay, 1838

Scutumara new genus

Diagnosis. — Carapace elongate, slightly longer than broad, surfaces very smooth, glabrous, regions not defined; epigastric cristae poorly developed or absent; front well produced, anterolateral margin convex, trilobed; posterolateral margins gently concave, distinctly converging. Antennules fold obliquely in large fossae. Posterior margin of epistome with three distinct lateral ridges; endostome with three strong palatal ridges. Third maxilliped merus broader than long, anterolateral angle strongly produced, auriculiform. Outer surfaces of chela with low but distinct subventral ridge, extending from near proximal edge of palm to just before tip of pollex. Closed fingers without proximal gape.

Etymology. — The name is derived from the Latin "scutum" for shield, alluding to the smooth and domed shape of the carapace. The gender is feminine.

Type species. — *Scutumara enodis*, by present designation.

Remarks. — *Scutumara* new genus differs from *Pseudograpsus* H. Milne Edwards, 1837, s. str. (type species *P. penicilliger* (Latreille, 1817), subjective synonym of *P. setosus* (Fabricius, 1798)) in that *Scutumara* has the following characters: 1) car-

apace width and length subequal, or with either width or length slightly longer than the other (vs. distinctly broader than long); 2) front more strongly produced; 3) dorsal surface of the carapace very smooth and convex, the cervical grooves not demarcated, with the gastric and cardiac grooves very shallow or indistinct; 4) epigastric crista very weak or completely absent (vs. strong); 5) infraorbital margin smooth or almost smooth (sometimes microscopically striate) (vs. distinctly granulated); and 6) ambulatory legs glabrous, without setae or pubescence.

These differences are rather substantial and warrant the separation of its three constituent species, *Scutumara enodis* new species, *Pseudograpsus laniger* Tesch, 1918, and *Pseudograpsus miyakei* Nakamura & Takeda, 1972, into a genus of their own. Within *Scutumara*, *S. enodis* differs significantly from *S. laniger* and *S. miyakei* in several aspects. *Scutumara enodis* has a front that extends distinctly beyond the orbits, with the frontal margin being distinctly convex; gastric/cardiac grooves that are almost undiscernible; without setae on the inside of the palm. The fronts of both *S. laniger* and *S. miyakei* are level with the orbits and are almost straight or gently sinuous, the gastric/cardiac grooves are very shallow but distinct and the inner surfaces of the palms near the base of the fingers are covered with setae.

A note about *Pseudograpsus* H. Milne Edwards, 1837, s. str. is relevant. H. Milne Edwards (1837) established the genus for two extant species, *P. penicilliger* (Latreille, 1817) (= *P. setosus* (Fabricius, 1798)), and *P. pallipes* H. Milne Edwards, 1837. *Pseudograpsus pallipes* H. Milne Edwards, 1837, was transferred to the genus *Brachynotus* De Haan, 1833 (Tesch, 1918: 104) and Holthuis (1977: 162) designated *P. penicilliger* (Latreille, 1817) as the type species of *Pseudograpsus* H. Milne Edwards, 1837. Tesch (1918: 101) had noted the marked similarity between *Heterograp-*

sus elongatus A. Milne Edwards, 1873, and *S. laniger* (as a *Pseudograpsus*), concluding that both species were closely related and *H. elongatus* should be referred to *Pseudograpsus* instead. However, the anterolateral teeth of *P. elongatus* are more developed and its epigastric cristae are distinct, although rather weak. Tesch (1918: 99) noted that *Pseudograpsus erythraeus* Kossmann, 1877, resembled *S. laniger* (as *Pseudograpsus laniger*) externally, differing in its stronger anterolateral lobulation and a distinctly less developed front. Monod (1956: 423) synonymized *P. erythraeus* Kossmann, 1877, with *P. elongatus* A. Milne Edwards, 1873, after examining specimens of both species (see also Crosnier, 1965: 39; Holthuis, 1977: 164). The genus *Pseudograpsus* s. str. now contains four recognized species, *P. setosus* (Fabricius, 1798) (= *P. penicilliger* (Latreille, 1817)), *P. albus* Stimpson, 1858, *P. crassus* A. Milne Edwards, 1868, and *P. elongatus* (A. Milne Edwards, 1873).

Scutumara enodis new species

Figs. 1, 2

Material examined. — Holotype female (ZRC 1993. 1), 5.8 by 5.9 mm, under littoral coral sand, Kunri-Hama Beach, Sesoko Island, Okinawa, Ryukyus, Japan, coll. P. K. L. Ng & Y. Nakasone, April 1992.

Description of holotype. — Carapace slightly longer than broad, surfaces very smooth, glabrous, without trace of hairs, regions not defined, highly domed transversely and longitudinally, gastric regions most convex. Frontal margin gently convex, entire, no lateral lobes visible from dorsal view, gently deflexed downwards, lateral edges appearing to be confluent with supraorbital margin from dorsal view, but not confluent from frontal view, with inner edges of smooth and entire supraorbital margins strongly deflexed downwards, much more so than outer edges of front,

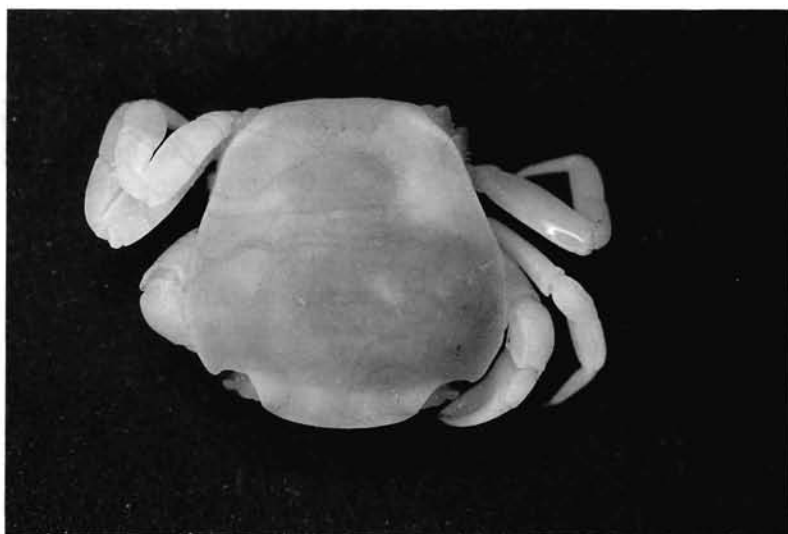


Fig. 1. *Scutumara enodis* new species, holotype female (ZRC 1993. 1), 5.8 by 5.9 mm.

forming slight "crimp" at junction between front and supraorbital margin. Infraorbital margin not distinctly cristate but slightly raised; not granulated or striate. Anterolateral margin gently arcuate, subcristate, faintly trilobed; lobes separated by very broad and very shallow clefts; external orbital lobe most distinct, very broad; second and third lobes more like undulations. Anterolateral margin not sharply demarcated from posterolateral margin. Posterolateral margins gently concave, distinctly converging. Orbits small, eyes fitting tightly, cornea well developed. Pterygostomial, suborbital and sub-branchial regions smooth. Orbital hiatus completely filled by large basal antennal segment; segment not fused to carapace, with short segmented flagellum completely enclosed within orbit. Antennules folding obliquely, fossae very large, basal segment very large, subtriangular in shape, broader than long. Posterior margin of epistome gently sinuous, with three distinct and separate transverse ridges, one median and two lateral; ridges separated from each other by small and narrow gap. Endostomial region with three well devel-

oped longitudinal palatal ridges, one median and two lateral; lateral longitudinal palatal ridges joining inner edges of lateral ridges of the posterior epistomial margin.

Third maxilliped with broad, foliaceous merus, broader than long, anterolateral angle strongly produced, auriculiform, distal margin distinctly bilobed, outer lobe larger, base of larger lobe with small median cleft. Ischium longer than broad, sulcus not discernible. Small but distinct rhomboidal gape formed between inner margins of meri and ischia of third maxillipeds when closed. Exopod with obtuse, blunt inner subdistal angle, flagellum longer than width of merus.

Chelipeds small, equal, outer and inner surfaces smooth, glabrous, merus and carpus without spines or teeth; inner distal angle of carpus with broad, very low and rounded lobe. Outer surface of chela with low but distinct subventral ridge which runs from near proximal part of palm to almost tip of pollex; inside surface without any trace of setae at base of fingers. Fingers distinctly longer than palm; cutting edge of both fingers with numerous small teeth, ending in

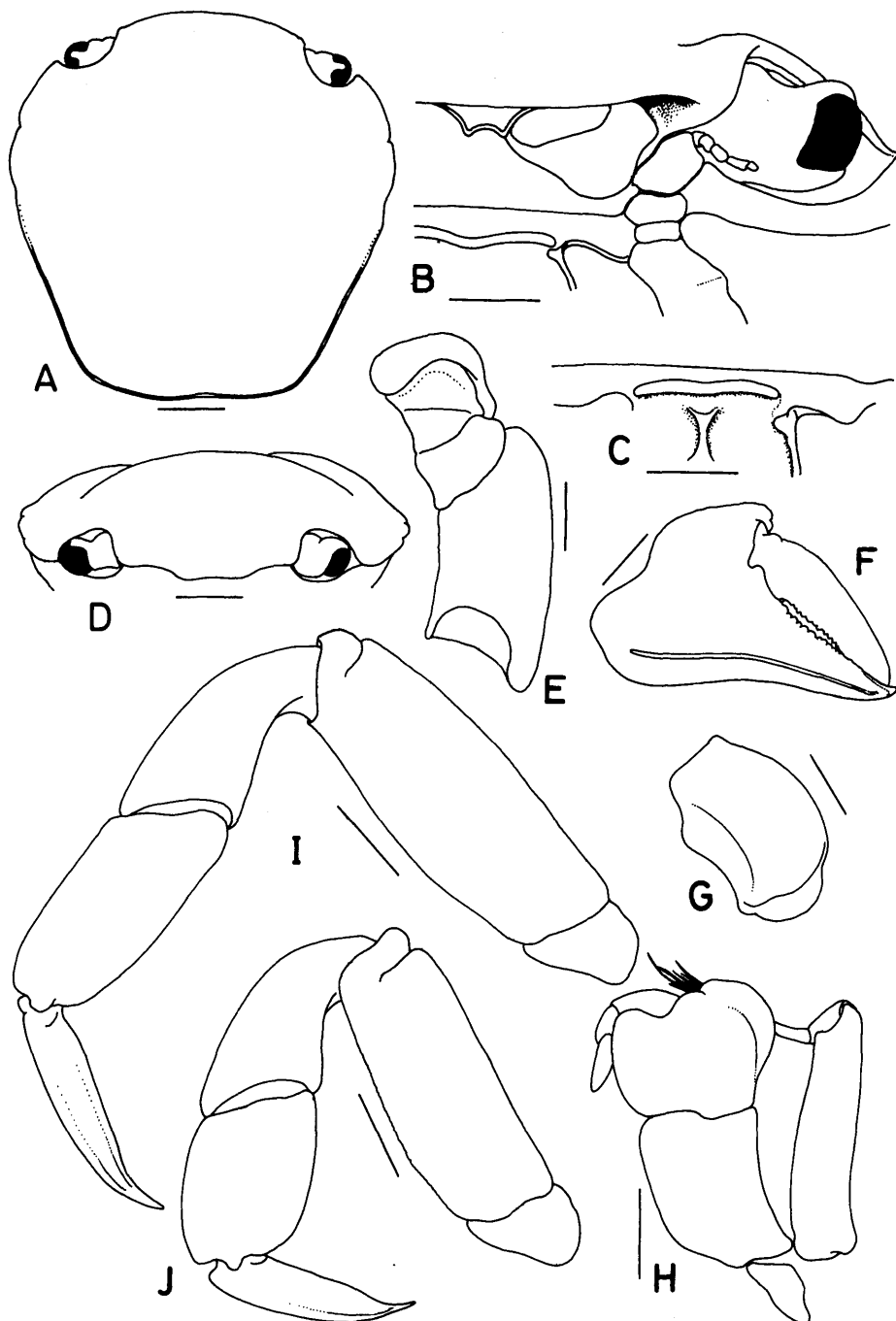


Fig. 2. *Scutumara enodis* new species, holotype female (ZRC 1993. 1), 5.8 by 5.9 mm. A, dorsal view of carapace; B, orbit, antennae and antennules; C, posterior margin of epistome and palatal ridges; D, frontal view of carapace; E, ventral view of cheliped coxa, basis-ischium and merus; F, right chela; G, dorsal view of cheliped carpus; H, left third maxilliped; I, left third ambulatory leg; J, left fourth ambulatory leg. Scales: A, D, 1.0 mm; all others 0.5 mm.

recurved, sharp tips; no gape discernible when fingers closed.

Second ambulatory leg longest. All segments smooth, without spines or setae. Dorsal and ventral margins of merus subcristate, dorsal margin with blunt subdistal tooth. Dactylus tapering towards slender, sharp tip.

Etymology. — The species name is derived from the Latin for smooth and not being armed by granules, alluding to the carapace surface.

Remarks. — *Scutumara enodis* new species, differs from its closest congener, *S. laniger* in the following aspects: 1) the gastric grooves are not discernible (vs. shallow); 2) the front is more strongly produced; 3) the merus of the third maxilliped is distinctly bilobed distally (vs. entire); 4) the outer surfaces of the chela are smooth (vs. squamate); and 5) the inner surfaces of the chela (at and around the base of the fingers) are glabrous (vs. pubescent).

The only known specimen of *S. enodis* is a female, and no definite statements about its affinities can be made in the absence of the male abdomen and gonopods. The female, although small and still a juvenile (5.8 by 5.9 mm), is probably only one or two moults before reaching its adult size. The female abdomen is broadly oval, covering about half the sternum, and the pleopods are already reasonably setose. The adult size of *S. enodis* is probably not much larger than the holotype female.

The type specimen of *S. enodis* was a uniform cream-white colour when alive. It was obtained among coral sand, near some coral rocks, in the littoral zone. The specimen behaved like burrowing crabs of the genus *Kraussia* Dana 1852 (Xanthoidea), shuffling backwards obliquely into the sand. The left branchial region of the specimen seems to be slightly deformed and more swollen than that on the right; it seems possible that the crab may have been infected recently by a bopyrid isopod.

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