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A NEW RECORD AND NEW SPECIES OF *PARTHENOPE* FROM NORTHERN AUSTRALIA (CRUSTACEA: BRACHYURA: PARTHENOPIDAE)

P. J. F. Davie and **P. A. Turner**

ABSTRACT. - *Parthenope sisimanensis* Serène & Umali, 1972, is recorded for the first time from Australian waters; and a new species, *P. chondrodes* is described. *P. chondrodes* differs from its closest relative, *P. longimanus*, by the extent and pattern of granulation on the carapace, chelipeds, and legs; and the shape of the male first gonopod.

INTRODUCTION

Collections made by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) from the North West Shelf and Gulf of Carpentaria, northern Australia, have been found to contain a new record and a new species of parthenopid crab for Australian waters. *Parthenope (Rhinolambrus) sisimanensis* was described by Serène & Umali (1972) from Philippine waters; the discovery of this species in the Gulf of Carpentaria marks a significant range extension. *Parthenope (Parthenope) chondrodes*, new species, appears most closely related to *Parthenope longimanus* (Linnaeus, 1758), a common species in Australian waters, but differs in several major characteristics. This paper contributes to the knowledge of the poorly understood Indo-West Pacific Parthenopidae.

Abbreviations used in the text are: G1, gonopod 1; QM, Queensland Museum, Brisbane; P1-P5, pereiopods 1-5; A1-A7, abdominal segments 1-7. Measurements given in the text are of the carapace breadth (measured at the widest point) followed by length.

TAXONOMY

PARTHENOPIDAE MacLeay, 1838

PARTHENOPINAE MacLeay, 1838

P. J. F. Davie, P. A. Turner - Crustacea Section, Queensland Museum, P.O. Box 3300, South Brisbane, Queensland 4101, Australia.

Parthenope (Rhinolambrus) sisimanensis Serène & Umali, 1972
(Fig. 1)

Parthenope (*Rhinolambrus*) *sisimanensis* Serène & Umali, 1972: 56-57, figs 43-50, pl. 5 figs 6-8.

Material examined. - CSIRO R.V. *Southern Surveyor*, Gulf of Carpentaria, dredged: 1 male (11.5 x 12.7 mm), female (11.5 x 11.8 mm) (QM W18976), 15°01.3'S, 137°41.2'E, stn 96, 49 m, coll. 11.xii.1990. — 1 female (13.1 x 14.3 mm) (QM W18978), 13°25.6'S, 138°36.0'E, stn 34, 54 m, coll. 24.xi.1991. — 1 female (10.2 x 11.4 mm) (QM W18975), 11°58.5'S, 140°41.4'E, stn 63, 53.5 m, coll. 4.xii.1990. — 1 male (9.7 x 10.5 mm), 2 females (8.9 x 10.6, 9.1 x 9.5 mm) (QM W18974), 11°58.5'S, 140°41.4'E, stn 63, 53.5 m, coll. 4.xii.1990. — 1 female (12.2 x 13.5 mm)(QM W18977), 15°01.3'S, 137°41.2'E, stn 96, 49 m, coll. 11.xii.1990. — 2 females (8.1 x 9.5, 10.2 x 11.8 mm) (QM W18979), 10°57.6'S, 140°23.0'E, stn 58, 54 m, coll. 29.xi.1991.

Remarks. - Our specimens agree closely with the description of the type (Serène & Umali, 1972); the distribution, number, and shape of the carapace spines are identical. *Parthenope sisimanensis* appears most closely related to *P. turriger* (Adams & White, 1848), a species distributed from the west coast of India to Australia (Flipse, 1930). *Parthenope turriger* differs from *P. sisimanensis* in that it bears only one gastric and one branchial spine, instead of two.

Distribution. - Sisiman Bay, Philippines (type locality), and now the Gulf of Carpentaria, Australia. Bathymetric range: 6-16 m (Serène & Umali, 1972); 49 to 54 m (this paper).

Parthenope (Parthenope) chondrodes, new species
(Figs. 2, 3A, B)

Material examined. - Holotype - male (11.1 mm CB, rostrum malformed) (QM W18985), North West Shelf, stn 03B11BT, 19°04.0'S, 119°01.0'E, 81-82 m, trawled, coll. CSIRO R.V. *Soela*, 30.vi.1983.

Paratypes - CSIRO R.V. *Soela*, North West Shelf: 1 male (12.5 mm CB, rostrum broken) (QM W18983), stn 03B08BT, 19°29.6'S, 118°52.6'E, 39-40 m, trawled, coll. 28.vi.1983. — 1 female (12.1 x 11.9 mm) (QM W18984), 19°04.6'S, 118°57.9'E, stn 03B10BT, 81-82 m, trawled, coll. 30.vi.1983.

Description. - Carapace, subpentagonal; *c.* as wide as long. Dorsal regions well delineated by furrows into branchial, intestinal, gastric and cardiac regions; gastro-cardiac region dissected by shallower depression. Dorsal surface covered by tubercles of varying sizes; three evenly spaced tubercles medially on the cardiac region, one on the summit of the gastric region, and two smaller anterior sub-median tubercles. Five prominent meso-epibranchial tubercles increasing in size posteriorly. Metabranchial region well defined, furnished with a few small tubercles. Most tubercles acute and conical. Thick setae sparsely and irregularly dispersed over dorsal surface of carapace, but most - often associated with tubercles. Anterior branchial margin with 6-8 lateral teeth of variable size. Intestinal region with 6 small tubercles. Rostrum of male holotype damaged. Rostrum of female deflexed, acute, with two pairs of lateral teeth; dorso-medial depression extending to the mesogastric region. Supraorbital margin granular with distinct median fissure. Sub-branchial region smooth or slightly granular with prominent acute tubercle arising near postero-lateral margin near base of cheliped. Epistome smooth; pterygostomian finely granular, well separated from sub-hepatic region by granular ridge.

Antennae setose; orbital hiatus filled by antennae; basal segment short. Antennular fossae

extremely oblique, terminating anteriorly beneath posterior pair of lateral rostral teeth; basal segment with anterior granular ridge. Ischium of third maxillipeds twice length of merus; minutely granular.

Chelipeds *c.* 3 times length of carapace. Upper surfaces furnished with large acute tubercles; median longitudinal row of granulated tubercles present on merus, surrounding tubercles

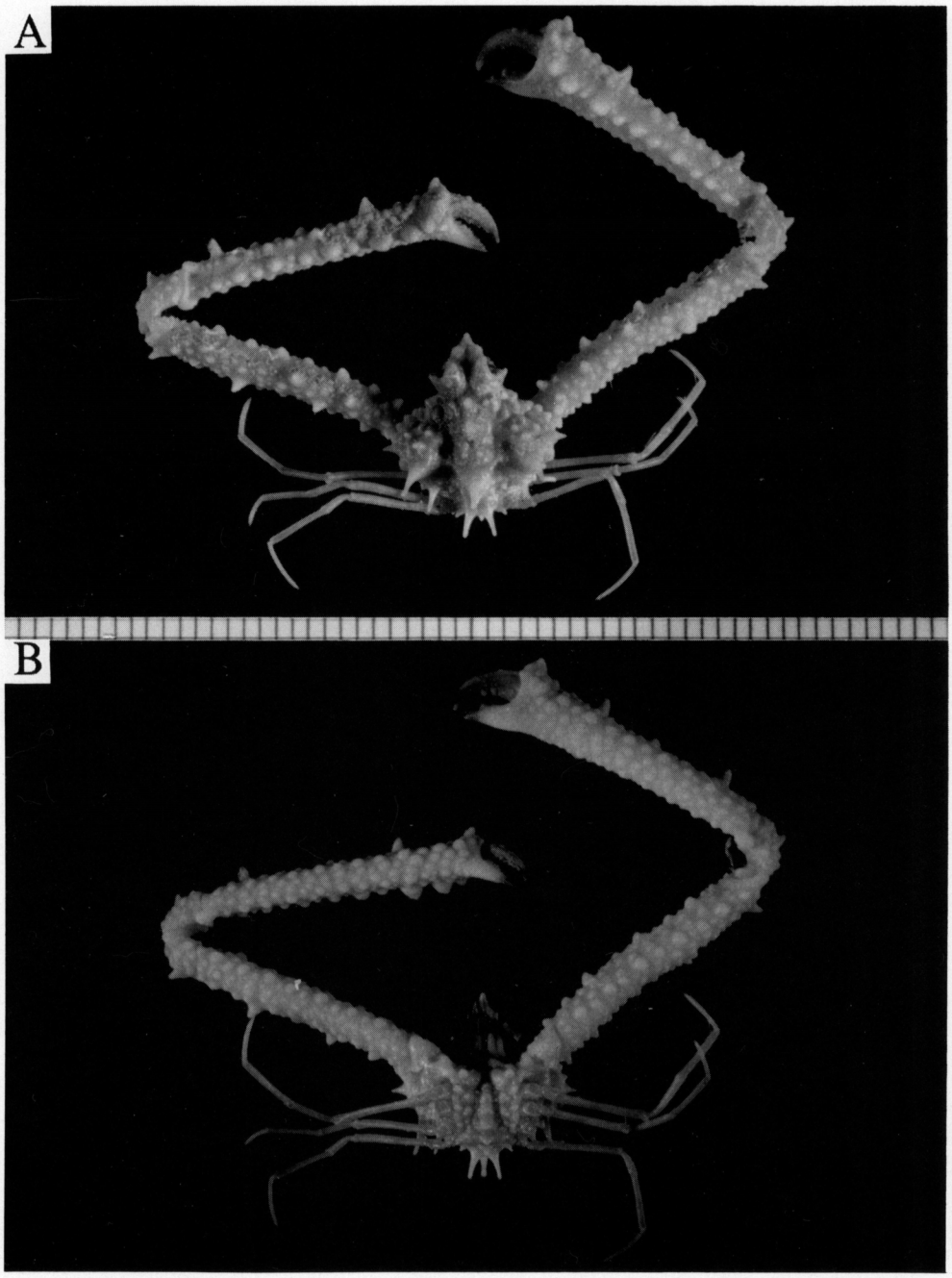

Fig. 1. *Parthenope sisimanensis*, male (QM W18976), A, dorsal view; B, ventral view. Scale line in mm.

irregularly dispersed; a few tubercles present on propodus. Serrated teeth of variable size form upper angles of propodi, meri, and outer edges of carpi. Ventral and inner surface of merus and propodus densely granular; ventral surface of merus bears prominent median row of granules; inner-ventral angle with row of tubercles along border. Dactylus relatively short; slightly granular; upper surface with variable sized serrated teeth, reducing proximally. Teeth of cutting margins lobate; tips of fingers pigmented.

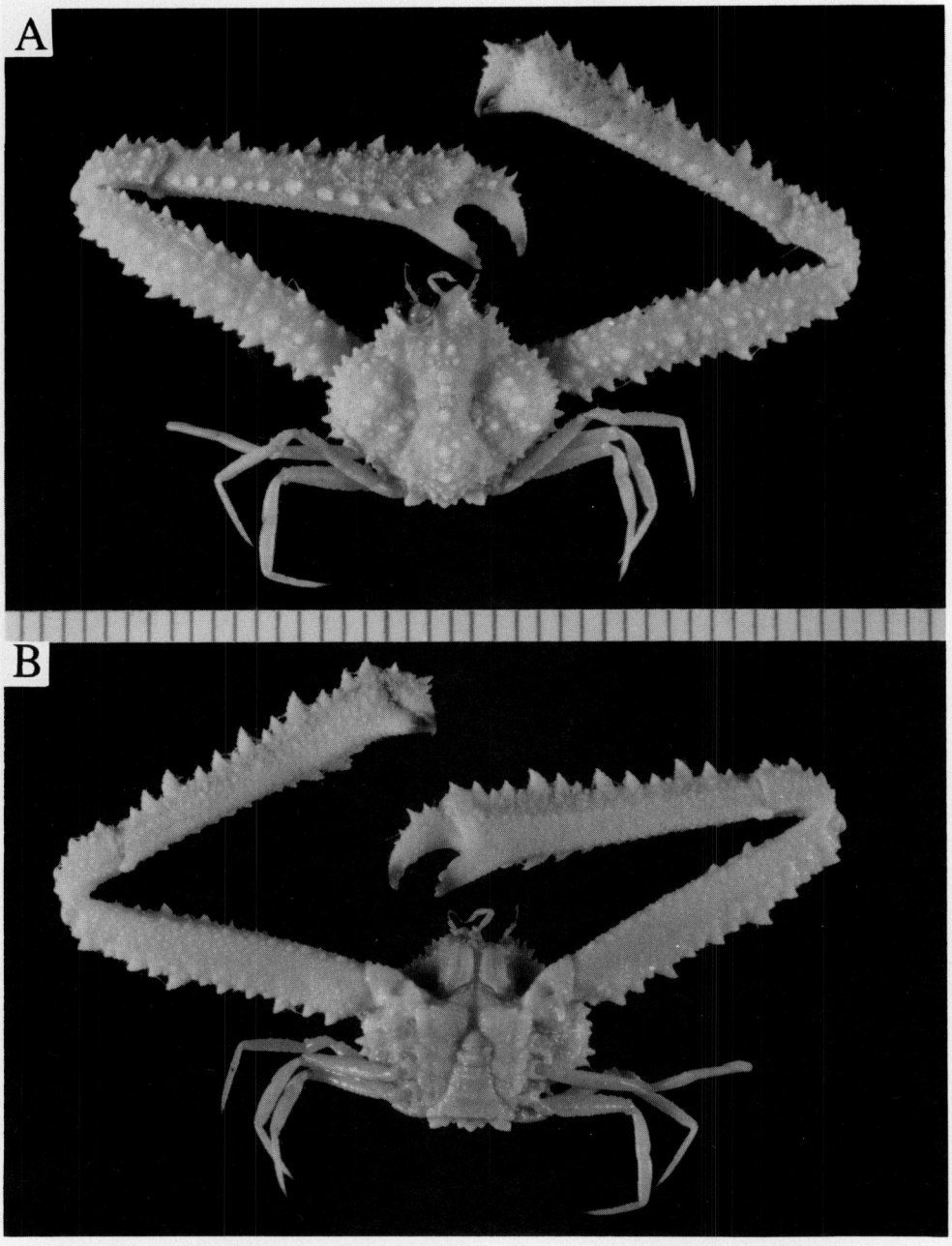

Fig. 2. *Parthenope chondrodes*, new species, holotype male (rostrum malformed) (QM W18985). A, dorsal view; B, ventral view. Scale line in mm.

Pereiopods: P2 *c.* 0.4 times length of cheliped; setae on upper and ventral margins, most prominent on dactylus and propodus. Upper angle of merus with short, acute, conical teeth; less obvious on other segments. Segments with sparse, minute, granulation.

Thorax and abdomen - Male: A2 with two lateral projections, visible dorsally, and smaller median projection; A3-A5 fused; A6 with minute central tubercle; A7 subtriangular; abdominal segments relatively smooth. Female: all abdominal segments articulated and granulated. Thorax of both sexes granular.

Male G1 (Fig 3A, B) stout, bearing fine, conical setae, most dense apically on inner face, and subapically on outer face; longest on outer face.

Remarks. - *Parthenope chondrodes* appears most closely related to *Parthenope longimanus* (Linnaeus, 1758), a common species in Australian waters (Figs. 3C, D; 4A, B). We have identified our comparative male *P. longimanus* specimen (QM W16113) using Flipse (1930), and by comparison with another male specimen (QM W2613) previously identified and recorded from Moreton Bay by Campbell & Stephenson (1970); the gonopods have been previously illustrated by both Flipse (1930: fig. 23) and Stephensen (1945: fig. 23A, B), and there is good agreement with both authors' figures.

The two species differ most conspicuously in the following characteristics. 1. The cheliped fingers of *P. longimanus* are longer and more sharply incurved at the tips than those of *P. chondrodes*. 2. The surface of the carapace and chelipeds is finely granulated in *P. chondrodes*, but this is more sparse or lacking in *P. longimanus*. 3. The A2 region of *P. chondrodes* bears two prominent posteriorly directed lateral projections with a smaller median projection; *P.*

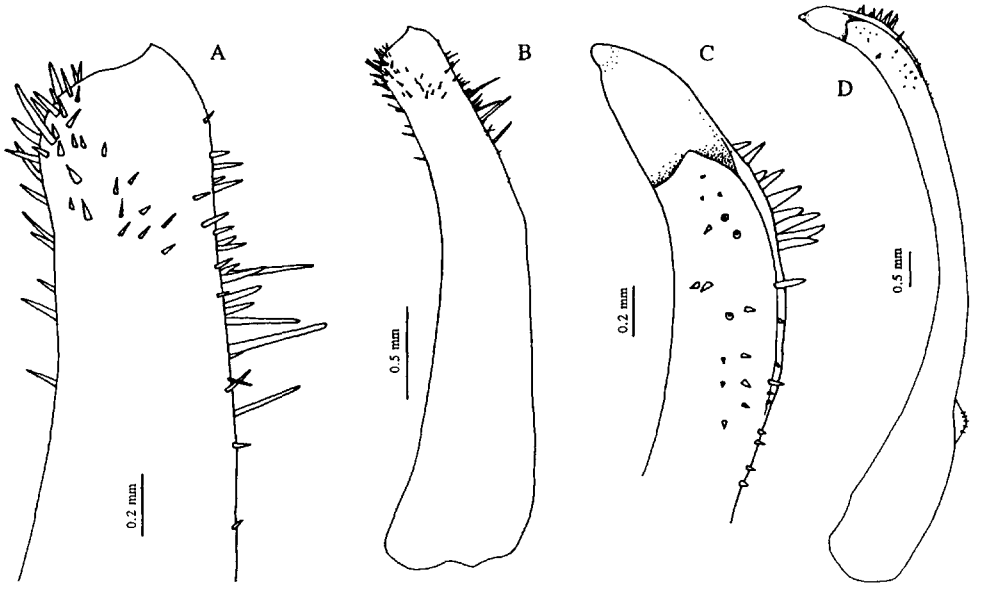

Fig. 3. G1 of: A, B, *Parthenope chondrodes* (paratype QM W18983); and C, D, *P. longimanus* (QM W16113).

longimanus has the lateral projections reduced and the central projection larger. 4. On *P. chondrodes* the ventral surfaces of the meri of the chelipeds are finely granular, whereas in *P. longimanus* they are smooth. 5. The ventral surface of the cheliped propodi of *P. chondrodes* bears a distinct median longitudinal row of small granulated tubercles which is lacking in *P. longimanus*. 6. The meri of the pereiopods of *P. longimanus* have several distinct teeth lining the upper and lower edges, which are much less prominent in *P. chondrodes*. 7. The G1 of *P. chondrodes* is distinctly different to that of *P. longimanus*, being short and stout; that of the latter being more slender, curved, and gently tapering (Fig. 3C, D). The placement of the setae also differs between the species.

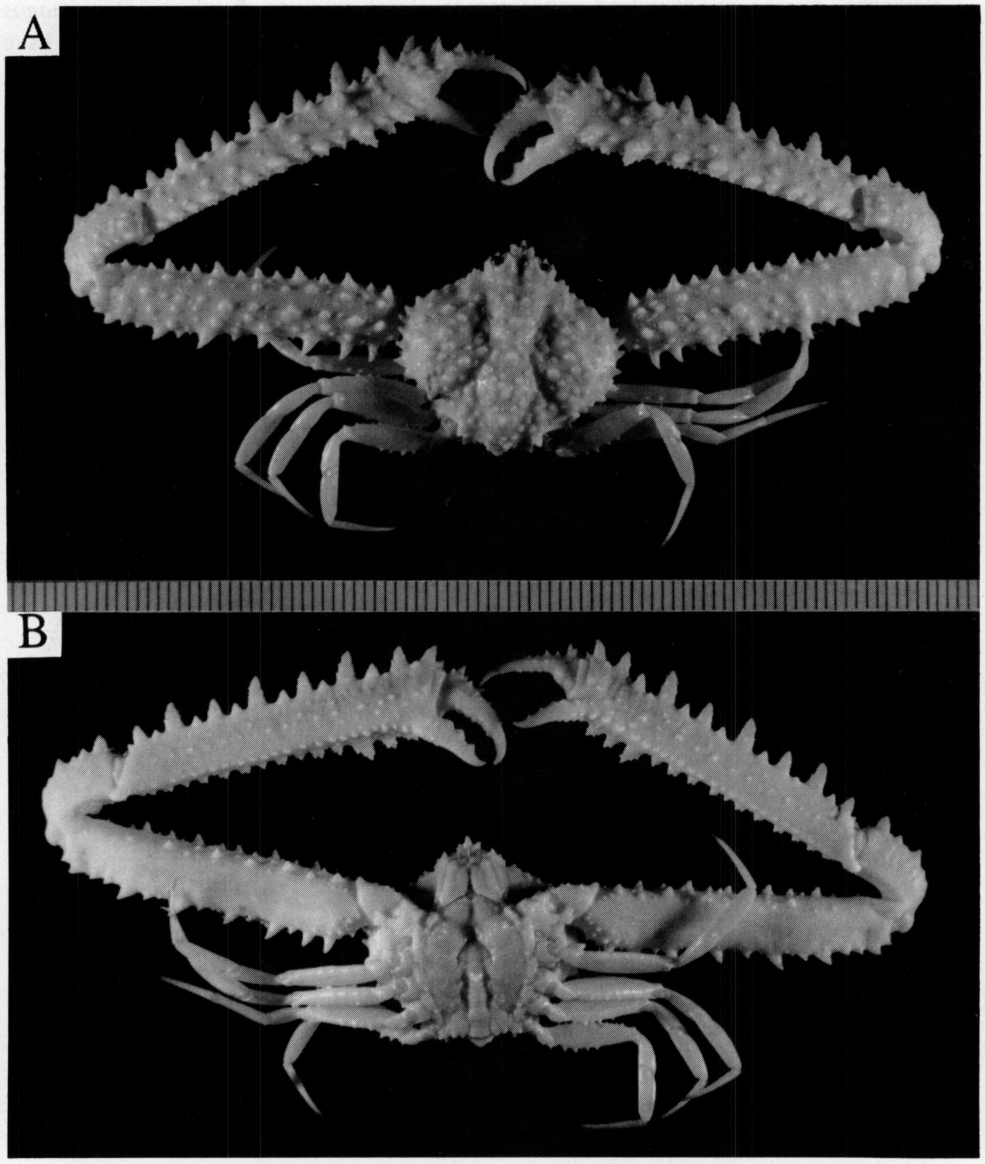

Fig. 4. *Parthenope longimanus*, male (QM W16113), A, dorsal view; B, ventral view. Scale line in mm.

Etymology. - The specific name is a Greek word meaning granular, and refers to the more granular surface of the carapace and chelipeds compared with *P. longimanus*; it is used here as a noun in apposition.

Distribution. - Only known from the type locality, North West Shelf, Western Australia. Bathymetric range: 39-82 m.

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LITERATURE CITED

Adams, A. & A. White, 1848. Crustacea. In: A. Adams (Ed.), *The Zoology of the Voyage of H.M.S Samarang; under the command of Captain Sir Edward Belcher, C.B., F.R.A.S., F.G.S. during the years 1843-1846*. viii+66 pages, pls. 1-6. Reeve, Benham & Reeve, London.

Campbell, B. M. & W. Stephenson, 1970. The sublittoral Brachyura (Crustacea: Decapoda) of Moreton Bay. *Mem. Qd. Mus.*, **15**(4): 235-301, figs. 1-49, pl. 22.

Flipse, H. J., 1930. Die Decapoda Brachyura der Siboga-Expedition. VI. Oxyrhyncha: Parthenopidae. *Siboga Exped. Monogr.*, **39**c^2: 1-96, text-figs. 1-44.

Linnaeus, C., 1758. *Systema Naturae*. Ed. 10, vol. 1: 1-824. Holmiae.

MacLeay, W. S., 1838. On the Brachyurous Decapod Crustacea brought from the Cape by Dr Smith. Pp. 63-72, pl. 3. In: Illustrations of the Annulosa of South Africa; being a portion of the objects of natural history collected during an expedition into the interior of South Africa, under the direction of Dr Andrew Smith, in the years 1834, 1835, and 1836; fitted out by "The Cape of Good Hope Association for Exploring Central Africa." *Illustr. Zool. S. Africa Invest.*, London: pls. 1-4, 75 pp.

Serène, R. & A. F. Umali, 1972. The family Raninidae and other new and rare species of brachyuran decapods from the Philippines and adjacent regions. *Philipp. J. Sci.*, **99**(1-2): 21-105, 131 figs., 9 pls.