

**PLEISTACANTHA ORI, A NEW SPECIES OF DEEP-WATER SPIDER CRAB  
(CRUSTACEA: DECAPODA: BRACHYURA: MAJIDAE)  
FROM THE WESTERN INDIAN OCEAN**

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**ABSTRACT.** – A new species of deepwater spider crab, *Pleistacantha ori*, is described from the South Western Indian Ocean. The new species ranges from South Africa to Madagascar and has previously been confused with *P. moseleyi* (Miers, 1886) and *P. pungens* (Wood Mason & Alcock, 1891), which it most closely resembles. *Pleistacantha ori* is the largest known species of the genus, attaining a postrostral carapace length of at least 129.1 mm.

**KEY WORDS.** – Crustacea, Decapoda, Majidae, *Pleistacantha ori*, new species, South Africa, Indian Ocean, taxonomy.

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## INTRODUCTION

A large species of spider crab of the genus *Pleistacantha* from the deep, outer shelf waters of Eastern Africa has been identified with *P. moseleyi* (Miers, 1886) by most students of the fauna (see Stebbing, 1923; Barnard, 1950; Grindley, 1961; Gordon, 1963; Berry & Hartnoll, 1970; Kensley, 1981). Recently, through the kindness of Sean Fennessy of the Oceanographic Research Institute (ORI), Durban, we obtained a good series of specimens of this large *Pleistacantha* from South Africa.

The South African specimens proved to be an undescribed species resembling *P. pungens* (Wood Mason & Alcock, 1891) (type locality Andaman Sea) and *P. moseleyi* (Miers) (type locality the Philippines). Indeed, Doflein (1904) synonymised *P. pungens* and *P. moseleyi*, a synonymy accepted by all subsequent authors until Guinot & Richer de Forges (1982) tentatively resurrected the former species on the basis of three specimens from Madagascar. Though we concur with Guinot & Richer de Forges (1982) that *P. pungens* is a valid species, their Malagasy specimens do not represent *P. pungens* sensu stricto, but are also identifiable

with the South African species. The new species, named *Pleistacantha ori*, is described below.

## MATERIALS AND METHODS

Measurements of specimens are given in millimetres (mm). Carapace length (cl) includes the rostrum. Postrostral carapace length (pcl) is measured along the midline from the posterior carapace margin to the base of the sinus between the rostral spines. Carapace width (cw) is the greatest width and excludes spines. Pereopods 1–5 are abbreviated P1–5 respectively. The first male pleopod (gonopod 1) is abbreviated as G1. For convenience, terminology follows Griffin & Tranter (1986) in use of the terms rostral spines and interantennular spines, respectively for the pair of anteriorly directed anterior carapace spines and the ventrally directed spine separating the antennular sinuses. Guinot & Richer de Forges (1982) use the terms pseudorostral spines and rostral spines for what we term rostral and interantennular spines. Specimens are deposited in the Raffles Museum of Biodiversity Research, National University of Singapore (ZRC); Australian Museum, Sydney (AM); and Muséum national d’Histoire naturelle, Paris (MNHN).

**TAXONOMY**

**MAJIDAE Samouelle, 1819**

***Pleistacantha ori*, new species**

(Figs. 1–5)

*Pleistacantha moseleyi*. – Stebbing, 1923: 2; Barnard, 1950: 34–35, Fig. 6e; Grindley, 1961: 127–128, Fig. 1a–d; Gordon, 1963: 153; Berry & Hartnoll, 1970: 214–215, Pl. 1; Griffin, 1974: 27; Kensley, 1981: 40; Zarenkov, 1994: 120, Fig. 13: 3, 4 [not *P. moseleyi* (Miers, 1886)].

?*Pleistacantha pungens*. – Guinot & Richer de Forges, 1982: 1110–1112, Figs. 6A, B, 8A, A1, A2, Pl. 3: 2, 2a [not *P. pungens* (Wood Mason & Alcock, 1891)].

**Material examined.** – Holotype: ZRC 2006.0158, male (cl 146.0 mm, pcl 129.1 mm, cw 106.3 mm), off Durban, South Africa, trawled, coll. Oceanographic Research Institute, Durban, Oct. 2004. Paratypes: ZRC 2006.0159, 1 male (cl 129.0 mm, pcl 115.0 mm, cw 92.7 mm), 1 ovigerous female (cl 120 mm, pcl 106.6 mm, cw 83.9 mm), 1 spent female (cl 119.6 mm, pcl 104.9 mm, cw 84.5 mm), same data as holotype.

Others: MNHN B7272, 1 male (pcl 52.0 mm, cw 43.0 mm), Madagascar, 12°43'S 48°15'E, 360 m, trawl 10, A. Crosnier coll., 14 Apr. 1971; MNHN B7273, 1 male (cl 76.2 mm, pcl 62.0 mm, cw 47.0 mm), Madagascar, 12°39.8'S 48°15.2'E, 375–385 m, trawl 11, A. Crosnier coll., 14 Apr. 1971; MNHN B7274, 1 male (cl 83.0 mm, pcl 68.0 mm, cw 57.0 mm), Madagascar, 12°40.0'S 48°14.0'E, 410 m, trawl 121, A. Crosnier coll., 11 Oct. 1974.

**Comparative material.** – *Pleistacantha pungens* (Wood Mason & Alcock, 1891): AM G1475, 1 male (cl 68.9 mm, pcl 55.8 mm, cw 44.7 mm), Andaman Sea, 238–458 m, RIMSS *Investigator* (ex Indian Museum 3180/9 as *Echinoplax pungens*).

**Diagnosis.** – Carapace with rostral spines 0.1–0.2 postrostral carapace length; widely separated basally, subparallel or faintly divergent; orbital margin with 5 or 6 well-spaced spines increasing in size posteriorly; hepatic spine anteriorly directed; dorsal surface covered with short conical spines and acute tubercles of similar size; branchial regions widely separated, not contiguous in the carapace midline; cardiac region at least half as wide as long. Anterolateral angle of buccal cavity with 4 or 5 teeth. Interantennular spine bifurcated in distal half to third, but not divergent. Third maxilliped merus as wide as ischium; anterolateral margin triangular, spinose. Male abdomen with telson and sixth somite clearly demarcated, but scarcely movable. First pleopod of male (G1) with distal tenth abruptly curved; with obliquely directed subdistal papilla and obtuse shoulder proximal to subdistal papilla. P5 merus 0.7 times postrostral carapace length in males, 0.6 in females.

**Description of type material.** – Carapace pyriform, postrostral carapace length longer than width, length 1.2 times width in males, 1.2–1.3 times width in females. Rostral spines 0.1–0.2 postrostral carapace length; widely separated basally, subparallel or faintly divergent; with 1 or 2 dorsal and 2 ventral (excluding basal) spines; with 3 lateral spines,

proximal 2 close together, distalmost beyond midlength of rostral spine. Orbital margin with 5 or 6 well-spaced spines increasing in size posteriorly: 1 or 2 small preorbital spines at level of rostral base, larger supraorbital, slender intercalated and postorbital spines. Hepatic spine large, anteriorly directed, with 2 or 3 small accessory spines. Dorsal surface covered with short conical spines and acute tubercles of similar size. Branchial regions neither markedly swollen nor contiguous in the carapace midline; cardiac region at least half as wide as long.

Epistome with ventrally directed spine lateral to antennal gland aperture, and cluster of 5 or 6 spines midway between antennal aperture and anterolateral angle of buccal cavity; anterolateral angle of buccal cavity with 4 or 5 teeth.

Eye, when folded back into 'orbit', not extending past level of antennal gland aperture. Eyestalk with elongate, stiff setae on anterior margin.

Interantennular spine bifurcated in distal half to third, but not divergent, depth of bifurcation decreasing with increasing body size; distal margin of antennular sinus produced to stout, triangular, ventrolaterally directed spine. Basal antennular segment with 2 or 3 ventrally directed spines; basal antennular peduncle segment ventrally and distally spinose; penultimate segment distally and ventrally spinose; ultimate segment with unarmed; flagellum extending slightly beyond rostral apices.

Third maxilliped merus as wide as ischium; meral surface spinose, with slender spine on either side of carpal articulation, anterolateral margin triangular with spinose margins; ischium with dentate margins, surface with conic tubercles; without longitudinal groove.

Third sternite of male spinous-tuberculate anteriorly, spinous distally; remaining sternites spinose laterally. Third sternite of female sparsely granulate. Male abdomen with 7 somites; widest at somites 2 and 3; distinctly spinose; telson and sixth somite clearly demarcated, but scarcely movable. Female abdomen spinose, granulate. First pleopod of male (G1) gently curving outwards, with distal tenth abruptly curved; subdistal papilla on inner margin subequal in length to margin between papilla base and pleopod apex, papilla straight, directed obliquely; obtuse shoulder proximal to subdistal papilla. Female abdomen with 7 somites, surface spinulose; telson and sixth somite fused, forming 'operculum', demarcation clearly visible; widest at somite 6.

Male and female chelipeds dissimilar in adults. Male chela distinctly inflated, granulate, non-spinous; carpus and merus with row of stout conical spines along lower margins and inner surfaces, other surfaces covered with low, well-spaced tubercles; occlusal margins of dactylus and pollex with blunt, obtuse teeth, with distinct gape; cheliped length 2.4–2.6 times postrostral carapace length; dactylus 0.6 times palm length. Female chela slender, markedly spinous; palm, carpus and merus with longitudinal rows of slender, upright spines, longest on lower and inner margins; occlusal margins of dactylus and pollex dentate, with slight gape; cheliped length

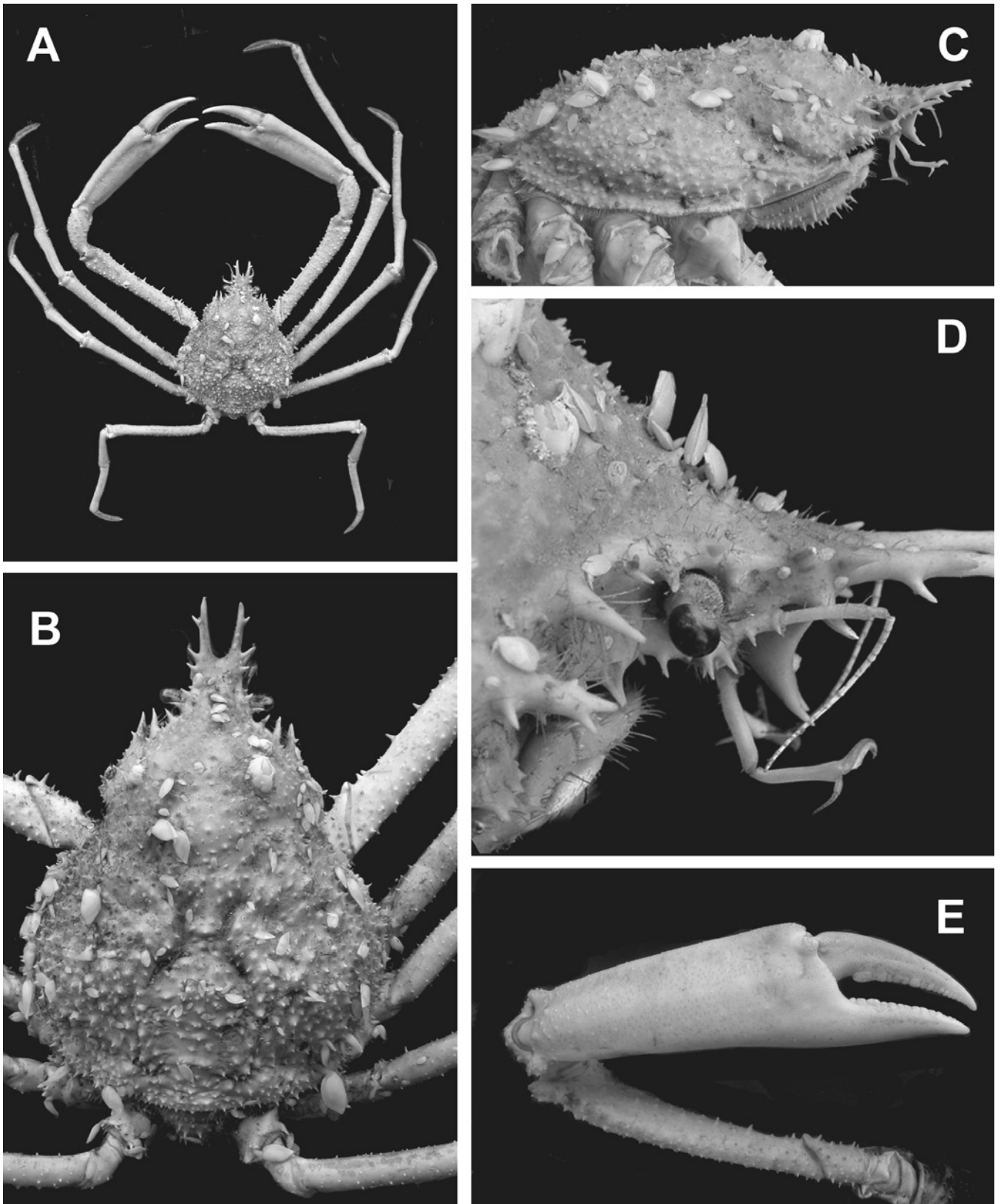


Fig. 1. *Pleistacantha ori*, new species, male holotype (cl 146.0 mm, pcl 129.1 mm, cw 106.3 mm), ZRC 2006.0158: A, dorsal habitus; B, carapace, dorsal view; C, carapace, right lateral view; D, anterior carapace, right lateral view; E, right cheliped.



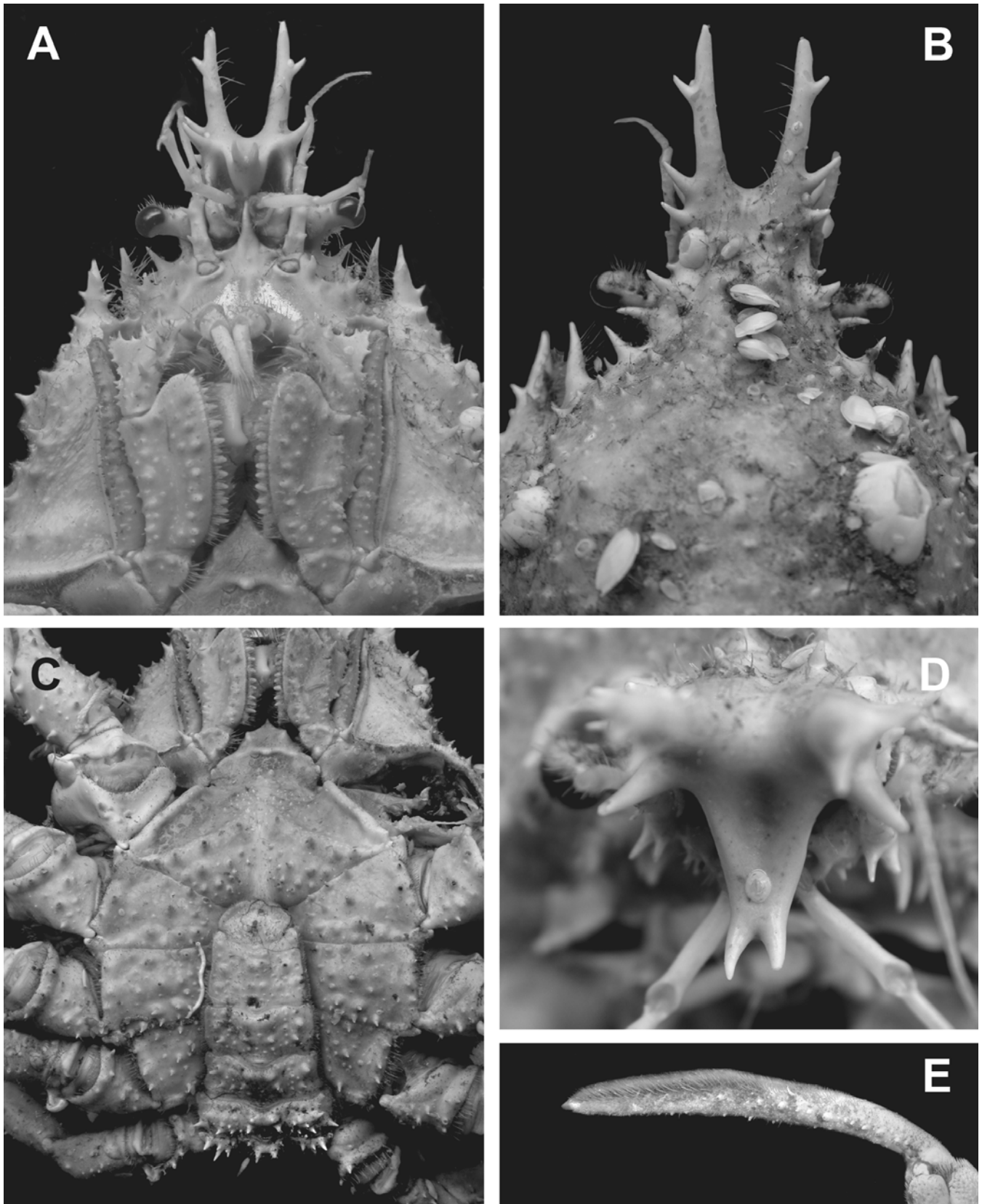


Fig. 2. *Pleistacantha ori*, new species, male holotype (cl 146.0 mm, pcl 129.1 mm, cw 106.3 mm), ZRC 2006.0158: A, oral field; B, anterior carapace, dorsal view; C, ventral surface; D, interantennular spine, anterior view; E, dactylus of right P2.

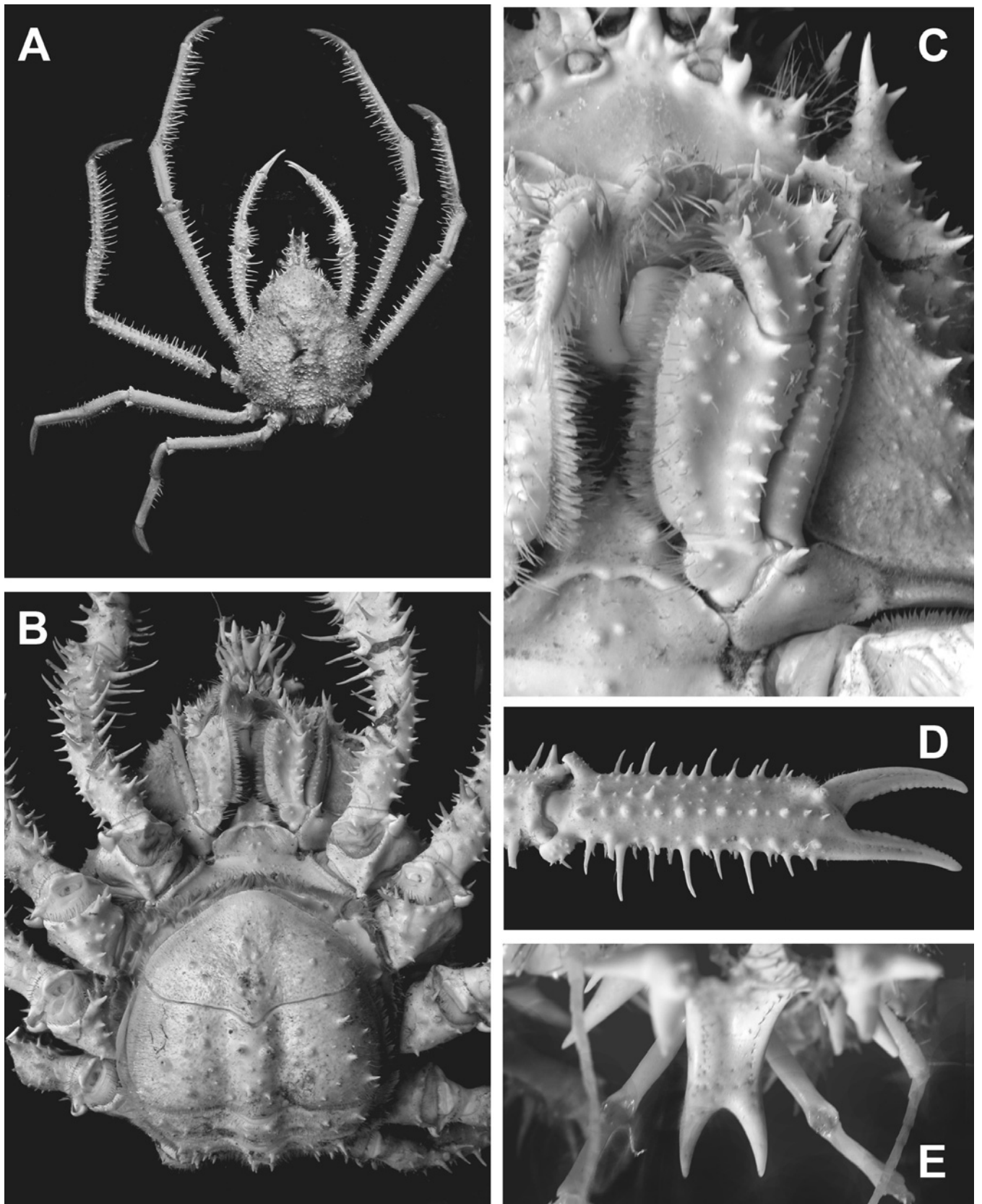


Fig. 3 *Pleistacantha ori*, new species, female paratype (cl 119.6 mm, pcl 104.9 mm, cw 84.5 mm), ZRC 2006.0159. A, dorsal habitus; B, ventral view; C, left third maxilliped; D, right cheliped; E, interantennular spine, anterior view.



1.2–1.3 times postrostral carapace length; dactylus 0.7 times propodus length.

Walking legs (P2–5) long, slender, decreasing in length posteriorly. P2 about 3.3–3.4 times postrostral carapace length in males, 2.6–2.8 in females.

Male P2–4 propodus, carpus and merus granular, with short, widely spaced, upright spines; dactyli with dense soft setae and corneous tip, those of P2 and P3 about 0.5 times propodus length, those of P4 and P5 about 0.6 times propodus length; P5 merus 0.7 times postrostral carapace length.

Female P2–4 segments granular, strongly spinous, with longitudinal rows of long, widely spaced, upright spines; along lower and lateral margins; dactyli with dense soft setae

and corneous tips, those of P2 and P3 also with row of short spines on lower margin and long curved spines on lateral margins; dactyli of P2 and P3 about 0.5–0.6 times propodus length, those of P4 and P5 about 0.6 times propodus length; P5 merus 0.6 times postrostral carapace length.

**Etymology.** – The specific epithet is derived from the initials of the Oceanographic Research Institute (ORI), Durban, and is used as a noun in apposition.

**Remarks.** – *Pleistacantha ori*, new species, is the largest known species of the genus, and most closely resembles *P. moseleyi* and *P. pungens*, with which it has been misidentified by previous workers. *Pleistacantha ori*, new species, *P. moseleyi* and *P. pungens* are readily distinguished from congeners by the relatively uniform dorsal carapace spination, in which the dorsal spines are of similar length rather than having several gastric and branchial spines markedly longer than the remainder, in combination with divergent rather than medially appressed rostral spines, and a deeply bifurcate interantennular spine.

*Pleistacantha ori*, new species, more closely resembles *P. pungens* than *P. moseleyi* in sharing less divergent, proportionally shorter rostral spines (less than one-quarter versus about one-third to half postrostral carapace length). *Pleistacantha ori*, however, is readily distinguished from both *P. pungens* and *P. moseleyi* by the more widely separated branchial regions of the carapace. In *P. ori*, new species, the branchial regions are widely separated by the cardiac region, which is at least half as wide as long (Figs. 1A, B; 3A). In



Fig. 4. *Pleistacantha ori*, new species, male holotype (cl 146.0 mm, pcl 129.1 mm, cw 106.3 mm), right male pleopod I (G1), ZRC 2006.0158: A, abdominal view; B, apex, sternal view. Scale bar = 2.0 mm.

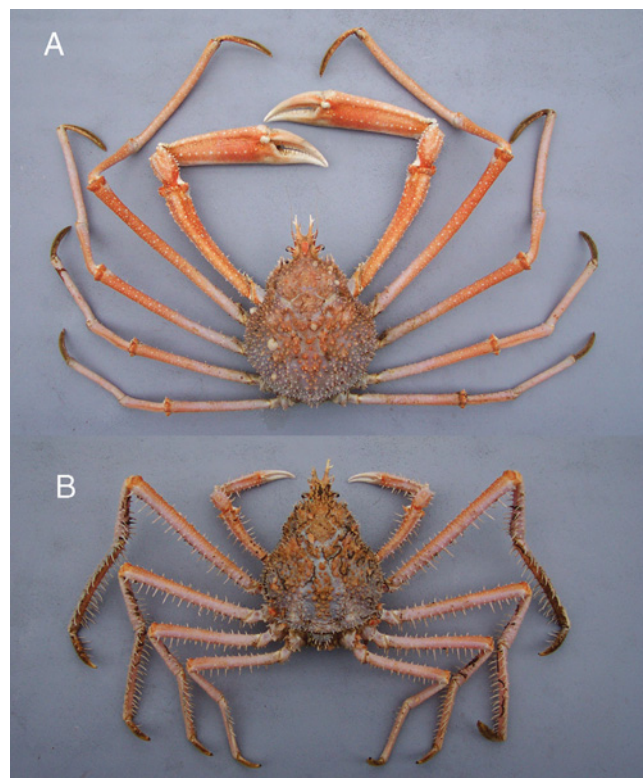


Fig. 5. Colours in Life. *Pleistacantha ori*, new species: A, male paratype (cl 129.0 mm, pcl 115.0 mm, cw 92.7 mm), ZRC 2006.0159; B, female paratype (cl 120 mm, pcl 106.6 mm, cw 83.9 mm), ZRC 2006.0159.

*P. pungens* and *P. moseleyi*, however, the branchial regions are nearly approximated in the longitudinal midline so that the cardiac region resembles a narrow 'hour-glass' in shape (Fig. 6).

The sexual dimorphism observed in *P. ori* is consistent with that reported by Grindley (1961) for the species (as *P. moseleyi*): the walking legs are less spiny and the chelipeds more inflated and more elongate in adult males. The specimen from Natal reported by Stebbing (1923) and Gordon (1963) was ovigerous at 102.5 mm pcl, but females apparently mature at a smaller size. Berry & Hartnoll (1970) reported on mating in captivity of *P. ori*, new species (as *P. moseleyi*) between a male of 108 mm pcl and an already berried female of 81 mm pcl. Stebbing (1923) and Berry & Hartnoll (1970) described the eggs as violet or purple in colour, respectively.

Griffin & Tranter (1986a) reported allometric variation in *P. oryx* in which the interantennular spine was divided in the distal third in juveniles ranging to less than one-third in adults. In *P. ori*, new species, the interantennular spine is bifurcate for the distal third to half, being shallowest in the largest specimen. Provided that the range of allometric variation is considered, the depth of the bifurcation in the interantennular spine remains a reliable diagnostic character in *Pleistacantha*.

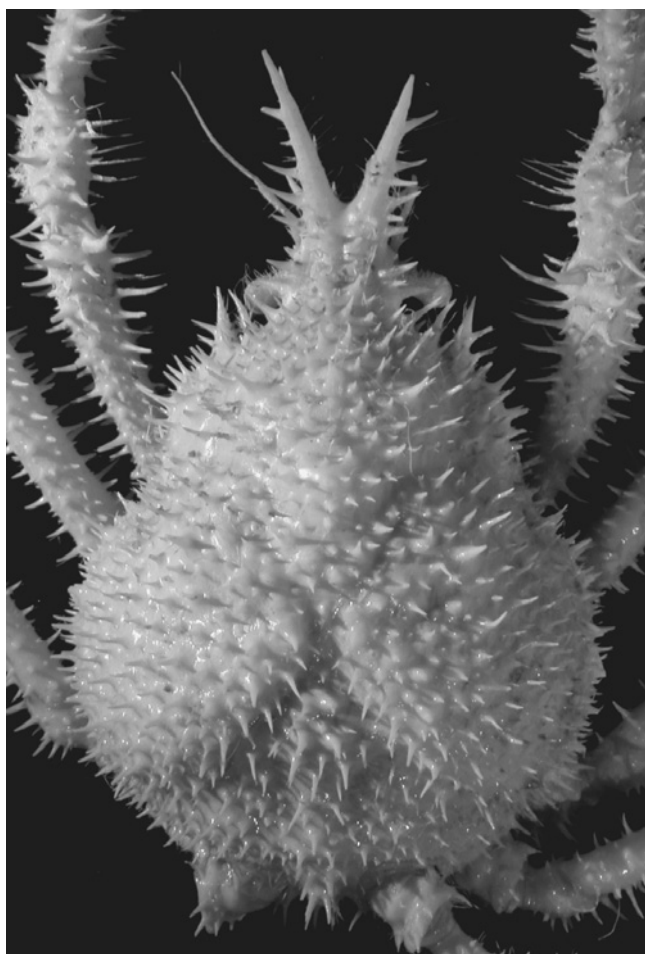


Fig. 6. *Pleistacantha pungens* (Wood Mason & Alcock, 1891), AM G1475, male (cl 68.9 mm, pcl 55.8 mm, cw 44.7 mm), Andaman Sea, 238–458 m, RIMSS Investigator (ex Indian Museum 3180/9 as *Echinoplax pungens*).

The specimens from Madagascar agree well in most respects with the South African material, including gonopod morphology, but differ in the more pronounced general spination of the carapace and pereopods and proportionally longer rostra (0.22–0.23 versus 0.12–0.15). Each of the aforementioned features vary allometrically and are consistent with the considerable size difference between the South African and Malagasy specimens, the latter being about half the size of the former. As such, we regard them as conspecific with the types of *P. ori*, new species, from Durban.

The specimen reported by Griffin (1974) from off Durban as *P. moseleyi* is almost certainly referable to *P. ori*, new species. Several authors have speculated on the identity of juvenile East African specimens of a *Pleistacantha* reported by Doflein (1904: Pl. 24, Figs. 5, 6) as *P. moseleyi*. Doflein's (1904) specimens should be re-examined, but the well-separated branchial regions exclude the possibility that they are *P. moseleyi* or *P. pungens*; they perhaps represent juvenile *P. ori*, new species, or an undescribed species. Other specimens reported by Doflein (1904) from Grand Nicobar Island (Andaman Sea) and Sumatra (Indonesia) are referable to *P. pungens* and *P. griffini* Ahyong & Lee, 2006, respectively.

**Distribution.** – Presently known only from off the Natal coast, South Africa and Madagascar; 238–480 m.

#### ACKNOWLEDGEMENTS

We are grateful to Sean Fennessy (ORI) for referring the interesting material to us for study and for his colour photographs. Danièle Guinot, Alain Crosnier and Regis Cleva (MNHN) kindly assisted with access to the material in the Muséum national d'Histoire Naturelle, Paris. The study was made possible by Biosecurity New Zealand (contract ZBS 2005-24) and Visiting Fellowships to the first author from the Raffles Museum of Biodiversity Research and Muséum national d'Histoire naturelle, Paris.

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