

MEDAEUS DANIELITA, A NEW SPECIES OF XANTHID CRAB
(DECAPODA, BRACHYURA, XANTHIDAE) FROM THE BOHOL SEA,
CENTRAL PHILIPPINES

BY

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ABSTRACT

A new species of xanthid crab of the genus *Medaeus* Dana, 1852, is described from the Bohol Sea in the central Philippines. *Medaeus danielita* new species, is similar to *Medaeus aztec* Davie, 1997, but can be easily differentiated from it by the structure of its carapace, ambulatory legs, and male first gonopods. It is only the second species of the genus known from the Philippines.

RÉSUMÉ

Une nouvelle espèce de Xanthidae du genre *Medaeus* Dana, 1852 est décrite de la mer de Bohol aux Philippines. *Medaeus danielita* nouvelle espèce ressemble à *Medaeus aztec* Davie, 1997, mais peut en être facilement différenciée par la structure de sa carapace, ses pattes ambulatoires et le premier gonopode male. Il s'agit de la seconde espèce de ce genre décrite des Philippines.

INTRODUCTION

The genus *Medaeus* was established by Dana (1851) to accommodate a new species of xanthid crab obtained from Lahaina, in the Hawaiian Islands, during the United States Exploring Expedition (1838-1842), although he did

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not name a species then. He later named the included new species as *Medaeus ornatus* in 1852 (Dana, 1852). Subsequently, other authors have described new species of *Medaeus* or transferred previously described taxa into this genus (e.g., A. Milne-Edwards, 1867, 1873; Miers, 1886; Rathbun, 1898, 1930; Ward, 1934; Capart, 1951; Monod, 1956; Sakai, 1965; Crosnier, 1967). Guinot (1967, 1968) eventually restricted *Medaeus* for two Pacific species (*M. ornatus* Dana, 1852, the type species, and *M. elegans* A. Milne-Edwards, 1867) and established several new genera (e.g., *Edwardsium*, *Medaeops*, *Miersiella*, *Monodaeus*, *Paramedaeus*, and *Pseudomedaeus*) to accommodate the other species. As a result of collecting efforts by French scientists in the Pacific, Davie (1993, 1997) added two more new species: *M. grandis* Davie, 1993, from the Tuamotu Archipelago in French Polynesia, and *M. aztec* Davie, 1997, from New Caledonia.

A few beautifully coloured crabs were hand-collected by SCUBA divers off the islands of Panglao and Balicasag in the Bohol Sea, central Philippines, during the PANGLAO 2004 Marine Biodiversity Project. The crabs proved to be a *Medaeus* species and is here described as new. This new species is the second species of *Medaeus* reported from the Philippines, the first one being *M. elegans* A. Milne-Edwards, 1867, reported by Serène & Umali (1972) from the Sulu Archipelago in the southern Philippines.

All measurements of the material examined are expressed as carapace width by carapace length, in millimeters. The nomenclature of carapace regions follows that of Dana (1851) and Serène (1984). The following abbreviations are used: coll., collected by; stn, station; G1, male first gonopod; G2, male second gonopod. The specimens in this report are deposited at the Crustacean Reference Collection of the National Museum of the Philippines, Manila (NMCR), the Muséum national d'Histoire naturelle, Paris (MNHN), and the Raffles Museum of Biodiversity Research, Singapore (ZRC).

TAXONOMIC ACCOUNT

Family XANTHIDAE MacLeay, 1838, sensu Ng et al., 2008

Subfamily EUXANTHINAE Alcock, 1898

Medaeus Dana, 1851

Type species. — *Medaeus ornatus* Dana, 1852, by subsequent monotypy.

Remarks. — *Pilumnus pelagicus* Glassell, 1936, and *Pilumnus spinulifer* Rathbun, 1898, both from the tropical eastern Pacific region, were placed in *Medaeus* by other authors (see Guinot, 1967: 374) on account of the cara-

pace anterolateral margin not meeting the external orbital angle but, instead, descending towards the buccal cavity. However, they were not included in *Medaeus* sensu stricto by Guinot (1967) in her revision of the genus. Ng et al. (2008) included these two species in *Medaeus*, albeit prefixed with a question mark, signifying the authors' reservations about their inclusion, and also, presumably, for the lack of any significant taxonomic action on this problem to date. We agree with Garth's assertion (in litt. to Guinot, 1967: 374) that these two species are congeneric due to similarities in their carapaces, sternums, abdomens, and G1, and conclude that they should be excluded from *Medaeus* as neither of them have a prominent 4M region or a crest or ridge on the 1P region. These features were mentioned as present in *Medaeus* sensu stricto by Guinot (1967), and Davie (1997) affirmed both these features as being diagnostic characters for the genus. Štević (2005) did propose a new genus, *Stimpsonia*, for *Pilumnus spinulifer* but his name was a nomen nudum because no diagnosis was provided (Ng et al., 2008: 199, 208).

***Medaeus danielita* sp. nov.** (figs. 1, 2A, C, E, 3)

Material examined. — Holotype ♂, 12.3 × 8.0 mm (NMCR 30063), stn R30, reef slope with black coral, 15-37 m, 9°37.1'N 123°46.1'E, Napaling, Panglao Island, Bohol, Philippines, coll. PANGLAO 2004 Marine Biodiversity Project, 8 Jun. 2004. Paratypes: 1 male, 7.7 × 5.4 mm (ZRC 2010.0101), stn B16, coral rubble on sand & gravel, 20 m, 9°37.6'N 123°47.3'E, Bingag, Panglao Island, Bohol, Philippines, coll. PANGLAO 2004 Marine Biodiversity Project, 17 Jun. 2004; 1 female, 7.9 × 5.3 mm (ZRC 2010.0102), stn B41, floor of cave, 17-19 m, 9°30.9'N 123°40.8'E, Balicasag Island, Bohol, Philippines, coll. PANGLAO 2004 Marine Biodiversity Project, 4 Jul. 2004.

Comparative material. — *Medaeus aztec* Davie, 1997: holotype ♂, 9.1 × 6.1 mm (MNHN-B22807), stn DW183, 367 m, 23°18.3'S 168°04.9'E, Aztec Bank, New Caledonia, coll. SMIB 8, 31 Jan. 1993; *Medaeus grandis* Davie, 1993: holotype ♂, 37.2 × 24.6 mm (MNHN-B22218), in trap, 210 m, 21°46.9'S 138°55.4'W, Mururoa, Tuamotu Archipelago, French Polynesia, coll. J. Poupin, 30 Nov. 1989; paratype ♂, 33.4 × 22.3 mm (MNHN-B22219), same data as holotype; paratype ♀, 21.2 × 14.7 mm (MNHN-B22220), in trap, stn 246, 90 m, 18°04.5'S 141°01.6'W, Hao, Tuamotu Archipelago, French Polynesia, coll. J. Poupin, 2 Jun. 1990.

Description. — Carapace (figs. 1, 2A, E) about 1.5 times as broad as long, regions well defined; 2M partially divided longitudinally, inner branch fused with 1M, which is separated by groove from 2F, outer branch indistinctly divided longitudinally; 3M, 4M, 2L, 3L, 5L distinct, entire; 1L indistinct; 4L merging with third anterolateral tooth; 6L partially divided transversely by indentation on medial margin; 1P with smooth, transverse crest; 2P with medially interrupted, granular transverse ridge; 1R, 2R fused, separated from 3R by distinct, oblique groove; grooves bordering regions, particularly 3M, posterior 2M, 6L deep, smooth; dorsal regions of carapace granular, with anterior regions bearing compacted granules; suborbital, subhepatic, pterygostomial re-



Fig. 1. *Medaeus danielita* sp. nov., holotype ♂, 12.3 × 8.0 mm (NMCR 30063), Panglao Island, Bohol, Philippines.

gions similarly granular. Front about 0.3 times carapace width, bilobed, minimally produced beyond internal orbital angle; frontal margin nearly straight, granular; lobes separated by narrow cleft, which continues as median sulcus on frontal region. Supraorbital margin granular, with no clear external orbital tooth, not clearly meeting anterolateral margin. Orbits relatively small, width about 0.1 times carapace width. Anterolateral margin with 4 broadly triangular teeth: first, fourth smaller than second, third, with apices of third, fourth teeth at the point of maximum carapace width; anterior part not clearly meeting orbital margin. Posterolateral margin straight, convergent posteriorly. Median part of posterior carapace margin straight, lined with single row of pearlliform granules.

Eyes with short stalks, distal edge with cornea lined with small, tooth-like granules; corneas well developed (fig. 2E). Antennules (fig. 2E) folding transversely. Basal antennal segment long, granular, subrectangular, occupying entire space between antennular fossa, internal orbital angle, filling orbital hiatus; flagellum arising from distal margin, almost reaching outer edge of orbit. Posterior margin of epistome with median projection. Outer surface of third maxillipeds (fig. 2E) granular. Merus subquadrate, anterior margin with median concavity, median length about half that of ischium, with 2 shallow depressions on either side of low, submedian, granular ridge; margins nearly

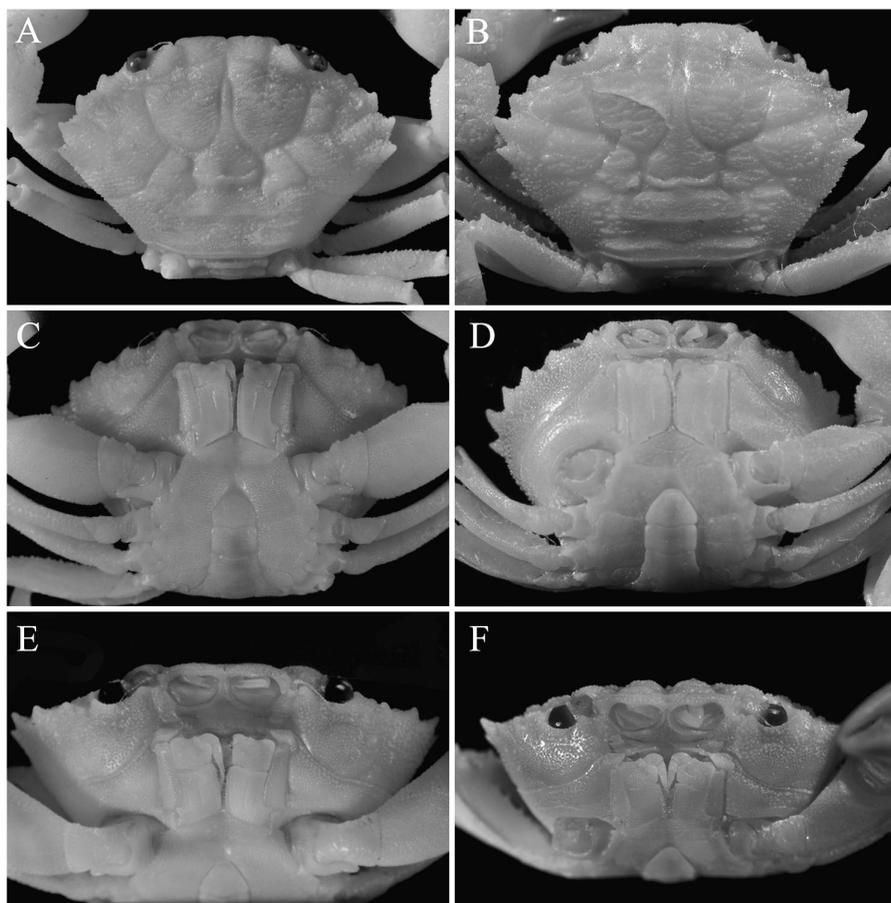


Fig. 2. A, C, E, *Medaeus danielita* sp. nov., holotype ♂, 12.3 × 8.0 mm (NMCR 30063), Panglao Island, Philippines; and, B, D, F, *Medaeus aztec* Davie, 1997, holotype male, 9.1 × 6.1 mm (MNHN-B22807), New Caledonia. A, B, dorsal view of carapace; C, D, ventral view showing thoracic sternum and abdomen; E, F, fronto-ventral view.

straight, lined with small granules. Ischium subrectangular, inner margin with short, stiff setae; with shallow, longitudinal sub-median groove; separated from basis by feeble suture. Exopod granulose, tapering toward distal end, which just reaches anterior edge of merus; flagellum long.

Surface of thoracic sternum (fig. 2C) granular, anterior region elongate. Sternites 1, 2 completely fused into triangular plate without trace of suture, separated from sternite 3 by distinct transverse suture. Sternites 3, 4 partially fused, with lateral notch on either side, which is replaced by distinct groove medially; sternite 4 with short, median, longitudinal furrow just anterior to sterno-abdominal cavity. Sterno-abdominal cavity deep, sternal press-button

slightly off-centre on sternite 5, slightly nearer to suture with sternite 6, abdomen almost reaching to imaginary line joining posterior edges of cheliped coxae.

Chelipeds subequal. Merus granular on external surface, distal end exceeding anterolateral margin of carapace in dorsal view. Carpus short; dorsal, ventral surface granular, inner margin with blunt tooth. External surface of palm of both chelae granular, with slight depression forming groove near upper margin, upper, lower margins almost straight, widening distinctly from proximal end to distal end; inner surface relatively smoother. Fingers pigmented, with pigmentation on fixed finger extending slightly onto palm; tips pointed, incurved, crossing each other when fingers closed. Fixed finger slightly deflexed, with submarginal groove on external surface, cutting margin with 5, 6 low teeth. Dactylus longer than upper margin of palm, slightly curved, external surface with 2 grooves, cutting margin with 2 low, simple teeth near base.

Ambulatory legs relatively long, slender; third leg longest, coxa-to-dactylus length about 1.0 times carapace width. Meri subrectangular, subcylindrical in cross-section; anterior edges armed with small conical granules, except in fourth leg, which is more finely granular; distal end of anterior margins with prominent tooth. Carpi narrow proximally, widening distally, dorsal surface granular, with low, submarginal crest. Propodi subrectangular, with larger conical granules on edges, dorsal surface. Dactyli straight, anterior, posterior edges covered with short, stiff setae; distal end with short, chitinous claw.

External surface of male abdomen, telson (fig. 2C) with low granules. Somite 1 longer at lateral edges, forming concave distal margin; larger granules on lateral portions. Somite 2 subtrapezoidal, proximal, lateral margins convex, distal margin concave; with larger granules on lateral portions. Somites 3-5 immovably fused, vestigial sutures seen as shallow grooves; external surface with finer, lower granules; lateral margins markedly concave. Somite 6 rectangular, about 1.4 times as wide as long, central region raised, lateral margins straight. Telson subtriangular with rounded tip, convex lateral margins, median length about 0.9 times basal width, about as long as penultimate somite.

G1 (fig. 3A, B) moderate in length, slender, curving laterally, tapering distally into 2 unequal lobes; external lobe small, narrow; internal lobe longer; with about 7 stiff, simple setae subdistally. G2 (fig. 3C) about half length of G1, curving medially, tip recurved.

Coloration. — The holotype is almost entirely red dorsally, except for a few patches of pinkish white on the third and fourth anterolateral teeth, and on

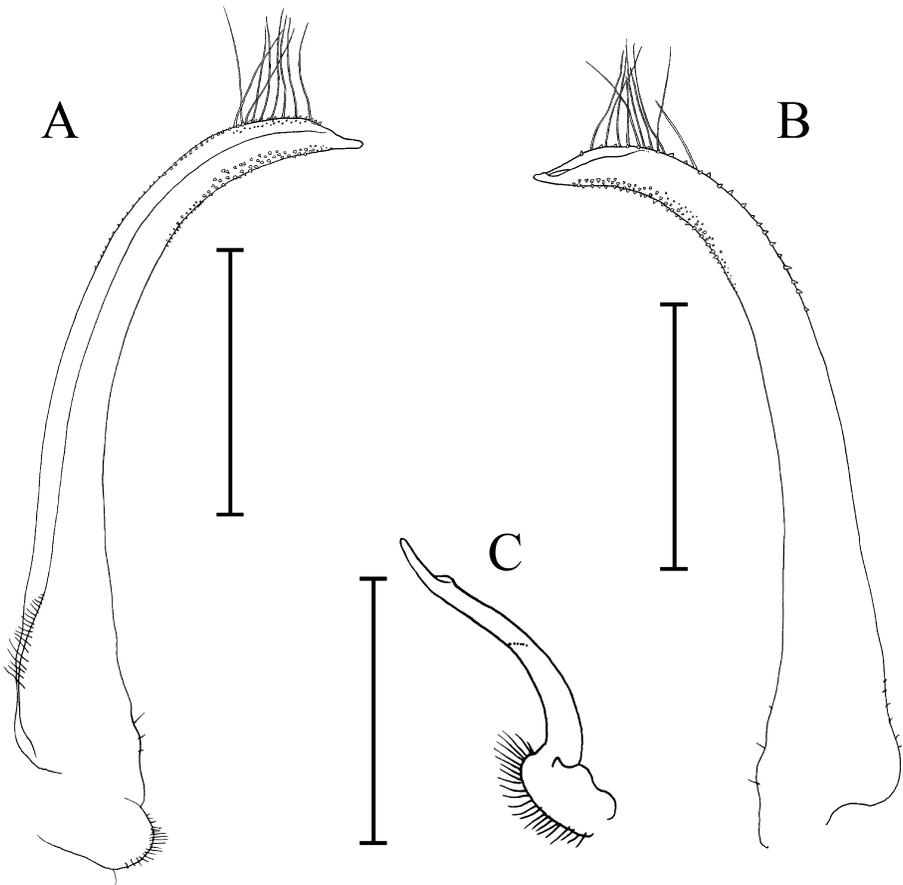


Fig. 3. *Medaeus danielita* sp. nov., holotype ♂, 12.3 × 8.0 mm (NMCR 30063), Panglao Island, Philippines. A, left G1, external view; B, idem, internal view; C, left G2, external view. Scale: A-C = 1.0 mm.

the posterior half of the carapace. The corneas are a brilliant red. The fingers of the chelipeds are brownish black throughout most of their length, and the ambulatory legs have pinkish white bands at the joints between the carpi and propodi and between the propodi and dactyli. In the fourth ambulatory legs, the coxae and ischia are also pinkish white.

Habitat. — *Medaeus danielita* sp. nov. is currently known only from the type locality, Panglao and Balicasag Islands. The crabs were hand-collected by SCUBA divers from a reef slope with good cover of black coral (*Antipathes*), an underwater cave and also among coral rubble, at a depth range of 15-37 m.

Etymology. — We take pleasure in naming this beautiful new species after Danièle Guinot, a good friend and mentor, whose work on brachyuran crabs,

particularly the Xanthidae, has been most valuable to our research, and who has always been a most excellent host whenever we visited the MNHN in Paris. The specific epithet *danielita* means “little Danièle”, the suffix “lita” being commonly used in Spanish and Filipino as a feminine, diminutive term of endearment. The name is used here as a noun in apposition.

Remarks. — *Medaeus danielita* sp. nov., fits well in the genus due to the prominent 4M region and the presence of a transverse crest or ridge on the cardiac (1P) region. Among the members of this genus, it is morphologically most similar to *M. aztec* (cf. Davie, 1997: 362, figs. 9, 15a, 18d) on account of: (1) the front being minimally produced and almost level with the internal orbital angle, (2) the margins of the frontal lobes being straight rather than concave, (3) the relatively thin and smooth crest on the 1P region of the carapace, (4) the relatively flatter and less rugose dorsal surface of the carapace, (5) the convex lateral margins of the male telson, (6) the slender ambulatory legs, and (7) the absence of plumose subterminal setae on the G1. However, it can be distinguished from *M. aztec* based on the following features: (1) the anterolateral teeth are more broadly triangular (figs. 1, 2A) (acutely triangular in *M. aztec*, fig. 2B), (2) the distal end of the cheliped meri exceeds the anterolateral margin of the carapace (figs. 1, 2A) (does not exceed anterolateral margin of carapace in *M. aztec*, fig. 2B), (3) the anterior margins of the meri of the ambulatory legs are either armed with small conical granules (first-third legs) or are finely granular (fourth leg) (figs. 1, 2A) (armed with uniformly spaced spines in *M. aztec*, fig. 2B); (4) the ambulatory legs are more slender (fig. 1) (relatively stouter in *M. aztec*, cf. Davie, 1997, fig. 15a); and (5) the G1 has fewer subterminal setae (~7), the external terminal lobe is narrowly spatulate and is smaller than and parallel to the internal lobe (fig. 3A, B) (G1 has more subterminal setae (~14), and the external terminal lobe is triangular and is larger than and perpendicular to the internal lobe in *M. aztec*, cf. Davie, 1997, fig. 9g, h).

Medaeus danielita is also similar to *M. grandis* (cf. Davie, 1993: 526, fig. 8, pl. 8) based on the minimally produced front, with straight margins, the broadly triangular anterolateral teeth, the relatively long and slender legs, and the gently curving G1. However, it can be distinguished from *M. grandis* by the following features: (1) the surfaces of the carapace, sternum, and pereopods are more finely granular and the areolation of the regions is not pronounced (figs. 1, 2A) (more coarsely granular carapace, sternum, and pereopods and markedly pronounced areolation of the carapace regions in *M. grandis*, cf. Davie, 1993: 527, fig. 8A, D, pl. 8A-C); (2) the chelipeds are relatively more

slender (fig. 1) (stouter and more robust in *M. grandis*, cf. Davie, 1993, pl. 8C); (3) the transverse prominence on 1P is a thin, smooth crest (figs. 1, 2A) (thicker and coarser ridge in *M. grandis*, cf. Davie, 1993, pl. 8A), and (4) the G1 is proportionately more slender and has much fewer subterminal setae and spines (fig. 3A, B) (stouter and with more subterminal setae and spines in *M. grandis*, cf. Davie, 1993: 527, fig. 8E, F). Finally, *M. danielita* was found in relatively shallower waters (about 15-37 m, as opposed to 90-210 m for *M. grandis*).

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