

Studies on Eumalacostraca: a homage to Masatsune Takeda

By

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(Editors)

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MICHELEA TAKEDA SP. NOV. (CRUSTACEA, DECAPODA, AXIIDAE,
MICHELEIDAE) FROM THE SOUTH CHINA SEA

BY

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ABSTRACT

A new species of the genus *Michelea* Kensley & Heard, 1991, *M. takeda*, from the Beibu Gulf (Tonkin Gulf), northern South China Sea, is described and illustrated. The new species is closely allied to *M. leura* (Poore & Griffin, 1979) but differs markedly in its wider rostrum, the lower margin of the propodus of pereopod 1 being distinctly convex and the shorter uropodal endopod. This genus is recorded for the first time from Chinese waters.

INTRODUCTION

The genus *Michelea* Kensley & Heard, 1991 is characterized by the rostrum being absent or obsolete, the carapace without a dorsolateral carina running from each side of the rostrum, the pleopods bearing marginal lamellae, at least on the lateral edge of the endopod but usually on the margins of both rami, and the uropodal rami being ovate. Eleven described species are known in the genus, from the tropical and subtropical waters of the western Pacific (Japan, Australia and New Caledonia) and the western Atlantic (Caribbean Sea) (table I).

While working on a systematic study of the axiidean fauna of the China Sea, a single specimen of an undescribed species of *Michelea* was found in collections from the Beibu Gulf, northern South China Sea. In this paper this is described as a new species, *M. takeda*, representing the first record of this genus from Chinese waters.

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TABLE I
Species of *Michelea* with relevant literature

Eastern Atlantic species
M. abranchiata Poore, 1997 — Caribbean Sea (Poore, 1997)
M. lamellosa Kensley & Heard, 1991 — Jamaica (Kensley & Heard, 1991)
M. vandoverae (Gore, 1987) — Eastern Florida Coast (Gore, 1987); Gulf of Mexico (Kensley & Heard, 1991); Caribbean Sea (Poore, 1997)

Western Pacific species
M. dampieri Poore, 2008 — Western Australia (Poore, 2008)
M. devaneyi Poore, 1997 — Marshall Islands (Poore, 1997)
M. hortus Poore, 1997 — Western Australia (Poore, 1997)
M. lepta (Sakai, 1987) — Okinawa, Japan (Sakai, 1987)
M. leura (Poore & Griffin, 1979) — Australia (Poore & Griffin, 1979)
M. microphylla Poore, 1997 — Australia (Poore, 1997)
M. novaecaledoniae Poore, 1997 — New Caledonia (Poore, 1997)
M. paraleura Poore, 1997 — Australia (Poore, 1997)
M. takeda sp. nov. — South China Sea (present study)

Material examined in this study was collected in the Beibu Gulf (Gulf of Tonkin) (1959-1960, 1962) and deposited in the Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China (IOCAS). The drawings were made with the aid of a drawing tube mounted on a Zeiss Stemi Sv 11 compound microscope. The following abbreviation is used throughout the text: cl, length of carapace.

SYSTEMATICS

Family MICHELEIDAE Sakai, 1992

Michelea Kensley & Heard, 1991

***Michelea takeda* sp. nov.**

(figs. 1-3)

Material examined. — Holotype: Y62A-6/MBM210244, ♂ (cl, 4.0 mm), Beibu Gulf, 19.30°N 108°E, depth 107 m, bottom muddy sand, coll. Zhengang Fan, 9 January 1960.

Description of male holotype. — Adult male. Rostrum (figs. 1, 2A) small, flat, not reaching midlength of eyestalks, about 0.4 times as long as broad at base, subacute tip. Carapace without dorsolateral carina running from each side of rostrum to posterior third of gastric region, bearing 2 pairs of anterolateral transverse setal rows, cervical groove distinct, reaching 0.5 length of cephalothorax, posterodorsal margin of carapace is acutely produced.



Fig. 1. *Michelea takeda* sp. nov., holotype male, Y62A-6/MBM210244, entire animal, lateral view. Scale = 1 mm.

Eyestalks (fig. 2A) slightly flattened, unarmed, and cornea is reduced into a small pigmented spot. Antennular peduncle not reaching distal margin of fourth segment of antennal peduncle. Antennal peduncle wide, unarmed; antennal scale well developed and dagger-like, located on upper surface of article 3, reaching level of proximal third of article 4.

Maxilliped 3 (fig. 2B) pediform, with sparse setae on lower margin; ischium oblong, 2.1 times as long as wide, with crista dentata on internal surface; merus 1.4 length of ischium, ventral margin with 1 small acute tooth arising distal third; carpus broadened distally, 2.8 times as long as wide, slightly longer than merus (upper margin); propodus oblong, 2.1 times as long as wide, 0.8 length of carpus; dactylus finger-like, 1.8 times as long as wide, 0.6 length of propodus. Exopod missing because of damage.

Pereopod 1 (fig. 3A) equal (punctuation should be changed). Ischium about as long as high; upper margin slightly concave and unarmed; lower margin straight, armed with a subterminally tooth (broken). Merus 2.8 length of ischium, about 1.8 times as long as high; upper margin strongly convex, unarmed; lower margin almost straight, with a sharp tooth located at midlength. Carpus triangular, about as long as high, 0.5 times as long as merus; upper margin almost straight; proximoventral margin broadly rounded, smooth. Chela heavy, palm about 1.5 times as long as high, subequal to (or slightly shorter than) merus; upper margin slightly convex, unarmed, lower margin convex, unarmed; fixed finger about 1.1 times as long as upper margin of palm, bear-

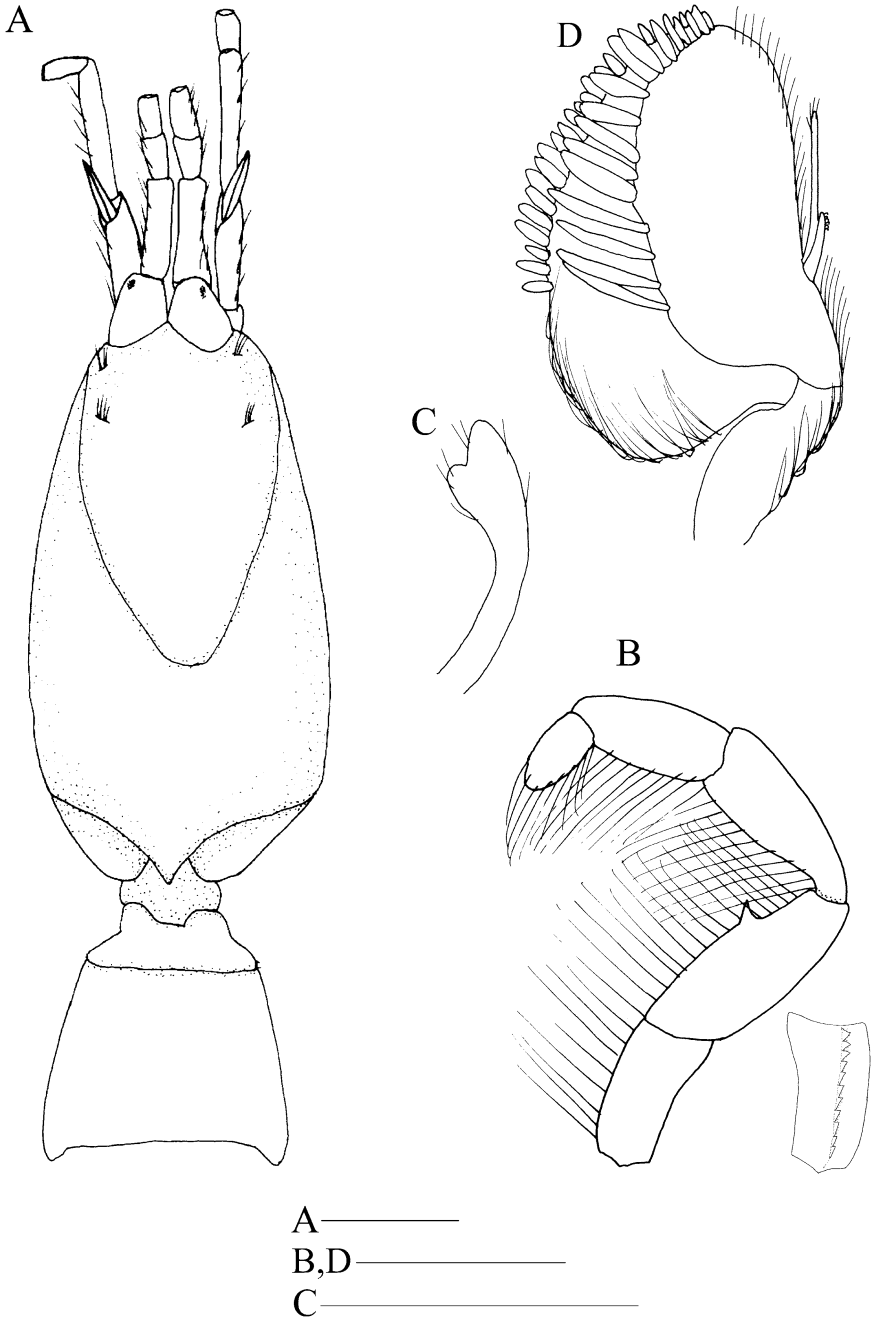


Fig. 2. *Michelea takeda* sp. nov., holotype male, Y62A-6/MBM210244. A, carapace, and abdominal somite 1 dorsal view; B, maxilliped 3, outer view and internal surface of ischium; C, male pleopod 1, posterior view; D, male pleopod 2, posterior view. Scales = 1 mm.

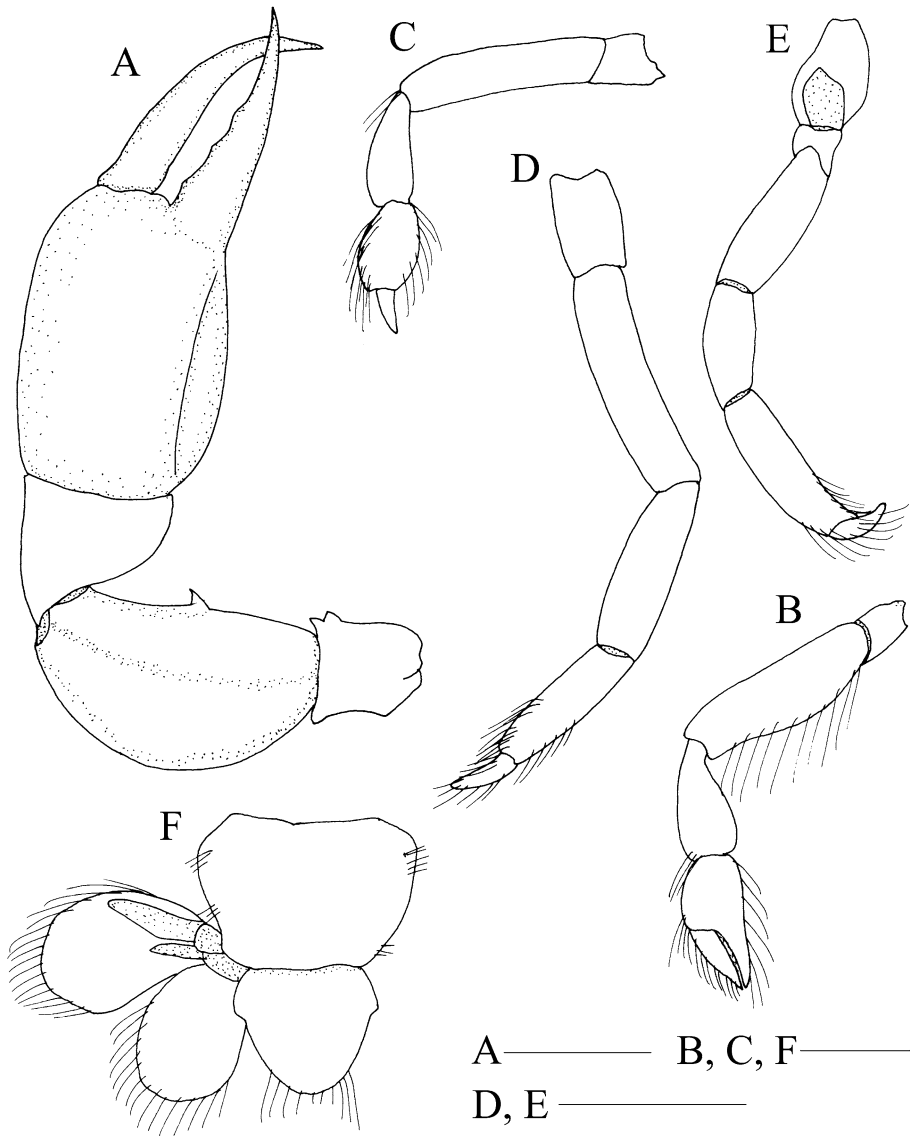


Fig. 3. *Michelea takeda* sp. nov., holotype male, Y62A-6/MBM210244. A, larger cheliped, lateral view; B–E, pereopod 2-5, lateral view; F, abdominal somite 6, telson and uropods, dorsal view. Scales = 1 mm.

ing three obtuse teeth on cutting edge; dactylus incurved distally, about as long as fixed finger, cutting edge unarmed.

Pereopod 2 (fig. 3B) chelate. Ischium unarmed. Merus 3.9 length of ischium, distoventral margin angular. Carpus broadened distally. Palm about

0.85 length of dactylus; cutting edge with fine and sharp chitinous spinules.

Pereopod 3 (fig. 3C) simple. Merus about 5.3 length of ischium. Carpus about 0.5 length of merus, broadened distally. Propodus ovate, nearly 1.4 times as long as wide, sparsely setose on both dorsal and ventral surface. Dactylus finger-like, 2.5 times as long as high, terminally acute.

Pereopod 4 (fig. 3D) longer than the third pereopod, merus about 2.3 length of ischium. Carpus 0.8 length of merus, lower margin slightly convex. Propodus shorter than carpus, dorsal and ventral surface distally with sparse long setae. Dactylus elongate, 2.8 times as long as high.

Pereopod 5 (fig. 3E) semichelate. Carpus 0.9 length of merus, slightly convex on upper margin. Propodus longer than carpus, about 1.3 length of carpus; fixed finger short, straight. Dactylus simply curving.

Abdominal somite 1 (fig. 2A) triangular posteroventrally, without setal rows; abdominal somite 2 longer than somite 3; abdominal somite 6 weakly rounded on ventral margin.

Male pleopod 1 (fig. 2C) uniramous, non-segmented, with a triangular distal blade, distal margin concave. Pleopod 2 (fig. 2D) biramous, foliaceous, endopod with 18 simple, non-articulated lamellae along distal margin to distal two thirds of outer margin, mesial margin with appendices interna and masculina, appendix masculina 2.5 length of appendix interna; exopod considerably wider than endopod, with 20 simple lamellae along distal margin to distal two thirds of outer margin, lamellae smaller than those on endopod. Pleopods 3-5 essentially similar to pleopod 2.

Telson (fig. 3F) 0.95 length of abdominal somite 6, maximum width about 1.2 times as wide as long, trapezoidal; lateral margin with distinct, angular lobe proximally; dorsal surface unarmed; posterior margin rounded, no lateral angle defined. Uropodal endopod ovate, 1.4 times as long as wide, bearing marginal seta; exopod ovate and longer than endopod, bearing marginal seta.

Gill formula is identical to *M. leura* (see Poore & Griffin, 1979).

Etymology. — The species is named in honour of Dr. Masatsune Takeda (National Museum of Nature and Science, Tokyo) for his great contribution to the world carcinology. Used as a noun in apposition.

Remarks. — *Michelea takeda* sp. nov. bears some resemblance to *M. leura* (Poore & Griffin, 1979) from Australia in the gill formula and lamellae in pleopods 2-5, but it differs in several aspects: the rostrum is shorter and wider in the new species than in *M. leura*; the cervical groove is distinct in *M. takeda* vs. indistinct in *M. leura*; the lower margin of the palm of the first pereopod

(cheliped) is distinctly convex in *M. takeda* vs. straight in *M. leura*; the telson bears proximal lateral lobes in the new species vs. absent in *M. leura*. The new species is also generally similar in rostrum and telson shape to *Micheleopsis orlik* Sakai, 2010, also found in the Beibu Gulf. It can be distinguished from the latter by the carapace being devoid of dorsolateral carinae running from the lateral rostral margins to the gastric region and the lower margin of the merus in pereopod 1 with a single tooth (vs. with 2 small teeth in *Micheleopsis orlik*).

Distribution. — Known only from the type locality.

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