

**A NEW DEEP-SEA SQUAT LOBSTER OF THE GENUS *MUNIDOPSIS*  
WHITEAVES, 1874 (CRUSTACEA: DECAPODA: ANOMURA: GALATHEIDAE)  
COLLECTED BY THE PANGLAO 2005 EXPEDITION TO THE PHILIPPINES**

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**ABSTRACT.** – A new deep-sea galatheid, *Munidopsis dentifalx*, is described on the basis of two specimens obtained at depths of 2,120–2,323 m by the PANGLAO 2005 expedition to the Philippines. The new species closely resembles *M. villosa* Faxon, 1893, known from the Gulf of Panama and off Chile, but differs from that species in lacking antennal and epigastric spines on the carapace and a median spine on the abdominal segment 5, and in the spination of the P2–4 dactyli. The last mentioned character is unusual in the genus *Munidopsis*, the ultimate of the ventral marginal spines being far distant from the penultimate.

**KEY WORDS.** – Crustacea, Galatheidae, *Munidopsis*, new species, PANGLAO 2005, Philippines.

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## INTRODUCTION

The PANGLAO 2005 expedition, organized by the Muséum national d'Histoire naturelle, Paris, was a survey of the deep-sea benthic biodiversity in the Bohol Sea and the eastern Sulu Sea Sill in the Philippines. The collected material included numerous galatheids, generally the commonest decapod crustaceans in deep waters. Species of the galatheid genus *Munidopsis* Whiteaves, 1874, in the Philippines and adjacent waters have been well documented by Baba (1988, 2005) and Macpherson (2007). Macpherson (2007) described *M. pericalla* from the material collected by both the PANGLAO 2005 expedition and the SALOMON 1 expedition to the Solomon Islands. The present paper describes another new species of this genus collected from two deepest sampling stations of the PANGLAO 2005 expedition at depths of 2,120–2,323 m off the eastern Sulu Sea Sill.

The holotype is deposited in the National Museum of the Philippines, Manila (NMCR) and the paratype in the National Taiwan Ocean University, Keelung (NTOU). The general terminology follows that of Baba (2005). The abbreviations used in the text include: Mxp 3 (third maxilliped), P1 (pereopod 1, cheliped), and P2–4 (pereopods 2–4, first to third

ambulatory legs). The postorbital carapace length (cl) was measured from the orbital margin (lateral end of the ocular peduncle) to the posterior margin of the carapace along the dorsal midline. The lengths of the articles of the P1 were measured along the mesial margins, and those of the P2–4 along the dorsal margins. The station (stn) designation CP refers to the collecting gear, a 4.2 m French beam trawl.

## TAXONOMY

### GALATHEIDAE Samouelle, 1819

#### *Munidopsis* Whiteaves, 1874

#### *Munidopsis dentifalx*, new species (Figs. 1–3)

**Material examined.** – Holotype: ovigerous female (cl 24.9 mm) (NMCR), PANGLAO 2005, stn CP2386, 8°49.6'N 123°02.6'E, 2,120–2,149 m, 29 May 2005.

Paratype: 1 female (cl 14.9 mm) (NTOU A00834), PANGLAO 2005, stn CP2387, 8°51.3'N 122°59.7'E, 2,307–2,323 m, 29 May 2005.

**Description.** – Carapace (Fig. 1A), exclusive of rostrum, 1.2–1.3 times longer than broad excluding lateral spines; dorsal surface convex from side to side, covered with numerous, short tuberculate ridges and small tubercles bearing short plumose setae (Fig. 1B); regions well defined by furrows including distinct anterior and posterior cervical grooves. Epigastric lobes rounded, bordering rostral base, with pair of elevated, anteriorly directed, short ridges. Posterior cardiac region subtriangular, elevated, preceded by deep transverse depression. Posterior margin preceded by elevated ridge bearing small tubercles. Lateral margins subparallel, roundly crested on anterior half; anterolateral spine strong, directed anteriorly, followed by 3 or 4 projections including moderately large spine on anterior branchial margin; lateral ends of anterior and posterior cervical grooves each with small notch. Frontal margin weakly concavely oblique behind ocular peduncle, leading to low, blunt lobe, then concave toward anterolateral spine of carapace; antennal spine absent. Rostrum (Figs. 1A, F) subtriangular, comparatively narrow, 0.3–0.4 breadth between anterolateral spines of carapace when measured between lateral bases of ocular peduncles in dorsal view, 0.3–0.4 length of remaining carapace (postorbital carapace), generally horizontal but slightly upturned distally in lateral view, terminating in acute tip; lateral margins nearly straight, with 1–3 small spines (holotype) or serrated (paratype); dorsal surface convex from side to side, with median longitudinal carina extending onto epigastric lobes; ventral surface with rounded, longitudinal ridge in midline.

Pterygostomian flap with numerous ridges of small tubercles; anterior margin bluntly angular.

Sternal plastron approximately as long as wide when measured in midline, maximum width at sternite 7. Sternite 3 (Fig. 1C) 3.9–4.3 times as broad as long; anterior margin divided into 2 roundly rectangular or ovate lobes by median notch. Sternite 4 (Fig. 1C) not contiguous to posterior margin of sternite 3; greatest width 2.8–2.9 times that of sternite 3; anterolateral margins oblique, each with row of small tubercles and setae; surface depressed in midline, with scattered, short setae. Sternites 5–7 each with row of setae on anterior tuberculate ridge and scattered short setae on surface.

Abdomen (Fig. 1D) with scattered, short plumose setae; segments 2–4 each with 2 elevated, blunt transverse ridges, anterior ridges each with median spine, posterior ridge on segment 2 uninterrupted but those on segments 3 and 4 faintly interrupted medially (in paratype, posterior ridge indistinct); segment 5 without distinct transverse ridges, slightly convex on median surface; segment 6 (Fig. 1E) flattish, with somewhat convex posteromedian margin slightly exceeding posterolateral lobes. Telson (Fig. 1E) composed of 10 (paratype) or 12 (holotype) calcified plates; posterior plates broader than long.

Ocular peduncle (Fig. 1F) comparatively small, reaching proximal one-third of rostral length, movable, without eyespines; cornea subglobular, subequal in length with remaining peduncle, about as broad as article 3 of antennal peduncle;

distinct spine ventral to front margin between ocular and antennal peduncles.

Basal article of antennular peduncle (Fig. 1F) with dorsolateral spine smaller than ventrolateral; lateral margin unarmed, convex; distomesial margin with row of small tubercles, unarmed; ventral surface with short, tuberculate ridges.

Antennal peduncle (Fig. 1F) overreaching distal margin of cornea by length of article 4. Article 1 with strong distomesial process reaching distal margin of article 2; distolateral angle produced but unarmed. Article 2 with distolateral spine reaching proximal one-third or midlength of article 3; distomesial margin unarmed. Articles 3 and 4 unarmed.

Maxilliped 3 ischium (Fig. 1G) distinctly shorter than merus when measured in midlateral line; extensor margin terminating in blunt process; flexor margin sharply ridged, terminating in blunt process; mesial ridge (crista dentata) with row of 18–21 small corneous teeth; lateral surface with short ridges. Merus with short, tuberculate ridges on lateral surface; flexor margin with 2 (paratype) or 5 spines (2 or 3 of them large in holotype); extensor margin protuberant, with small distal spine. Carpus protuberant on extensor surface. Propodus and dactylus nearly smooth. Exopod distinctly overreaching distal margin of merus. Epipod elongated.

Pereopod 1 (Fig. 2A–C) 1.9–2.1 times postorbital carapace length, 1.4–1.6 times as long as carapace including rostrum; surfaces covered with numerous, short tuberculate ridges bearing short plumose setae; marginal setae longer. Ischium with strong (holotype) or small (paratype) spine on ventromesial distal margin. Merus 2.6–3.2 times as long as broad (breadth measured at distal end, exclusive of spines), with 4 strong distal spines (dorsomesial, dorsolateral, ventrolateral, ventromesial); dorsolateral surface unarmed (paratype) or with small spine distally (holotype); ventromesial margin unarmed or with small (paratype) or strong (holotype) spine medially. Carpus 1.6–1.7 times longer than broad (breadth measured at distal end, exclusive of spines), with 4 strong distal spines (dorsal, dorsolateral, dorsomesial, ventrolateral; dorsal spine small in paratype); dorsal surface shallowly concave in midline; dorsodistal margin unarmed (paratype) or with few small spines (holotype); dorsolateral surface unarmed (paratype) or with 1 or 2 small distal spines (holotype); ventrolateral distal margin unarmed or with small spine. Palm compressed dorsoventrally, unarmed; length 1.5–1.7 times breadth measured at base of fingers, 1.2–1.4 times longer than carpus; dorsal surface convex medially, with broad concavity along mesial margin; lateral margin weakly concave at base of fixed finger. Fingers about as long as palm; opposable margins nearly straight, narrowly gaping, distally spooned; prehensile edges each with row of low teeth; distal margins each with row of small subacute teeth; fixed finger with short, oblique, denticulate carina on distolateral surface (Fig. 2C).

Pereopods 2–4 (Figs. 2D–G) slender, subcylindrical, somewhat compressed laterally; P2 longest, barely reaching

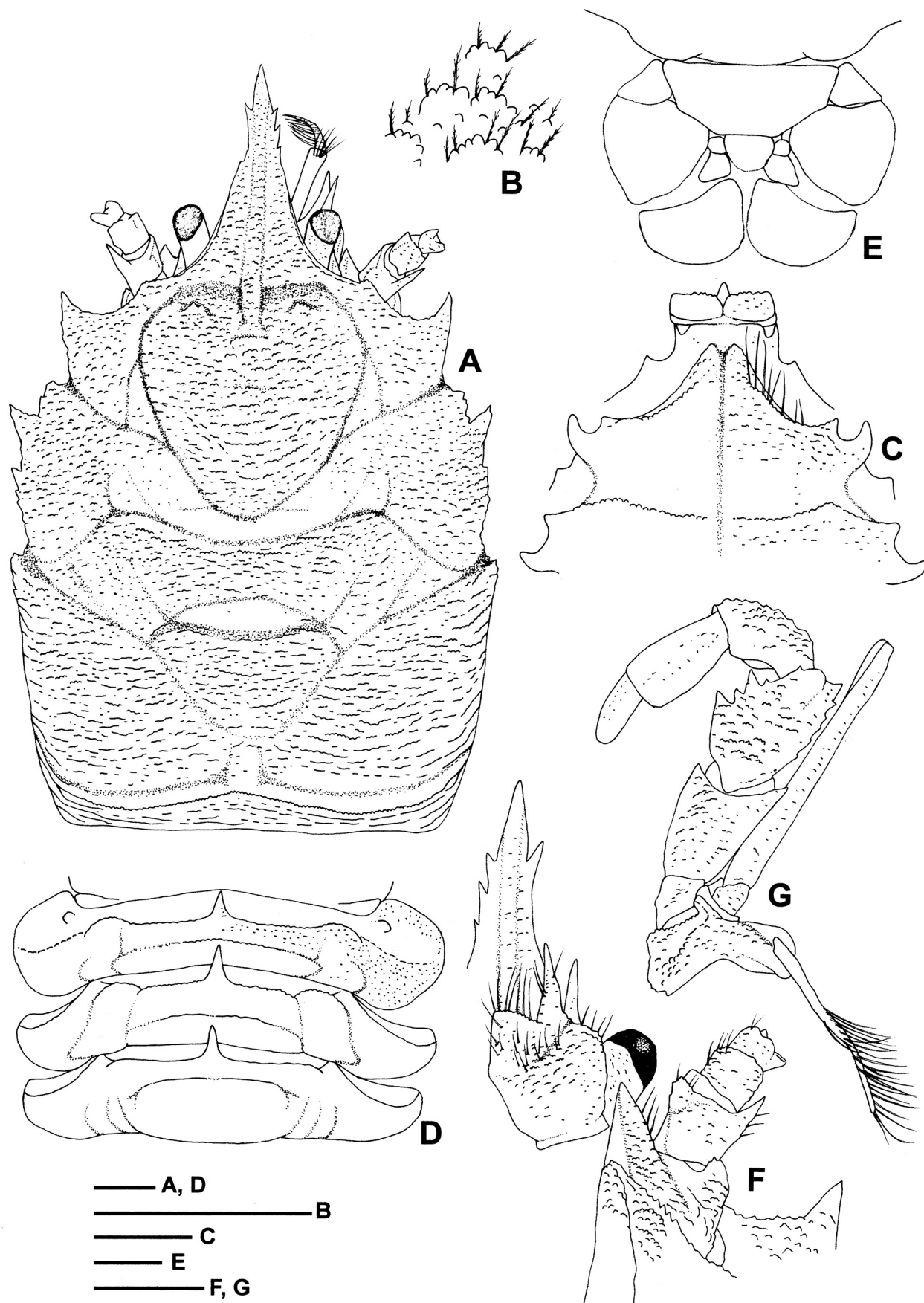


Fig. 1. *Munidopsis dentifalx*, new species: holotype, ovigerous female (cl 24.9 mm). A, carapace, dorsal view (setae omitted); B, short plumose setae on median protogastric region, dorsal view; C, anterior part of sternal plastron, ventral view (setae omitted from surface); D, segments 2–4 of abdomen, dorsal view (setae omitted); E, posterior part of segment 6 of abdomen and telson, extensor view; F, rostrum, and left ocular and antennal peduncles, basal segment of antennular peduncle, and anterior part of pterygostomial flap, ventral view; G, left Mxp 3, lateral view. Scale bars = 3.0 mm.

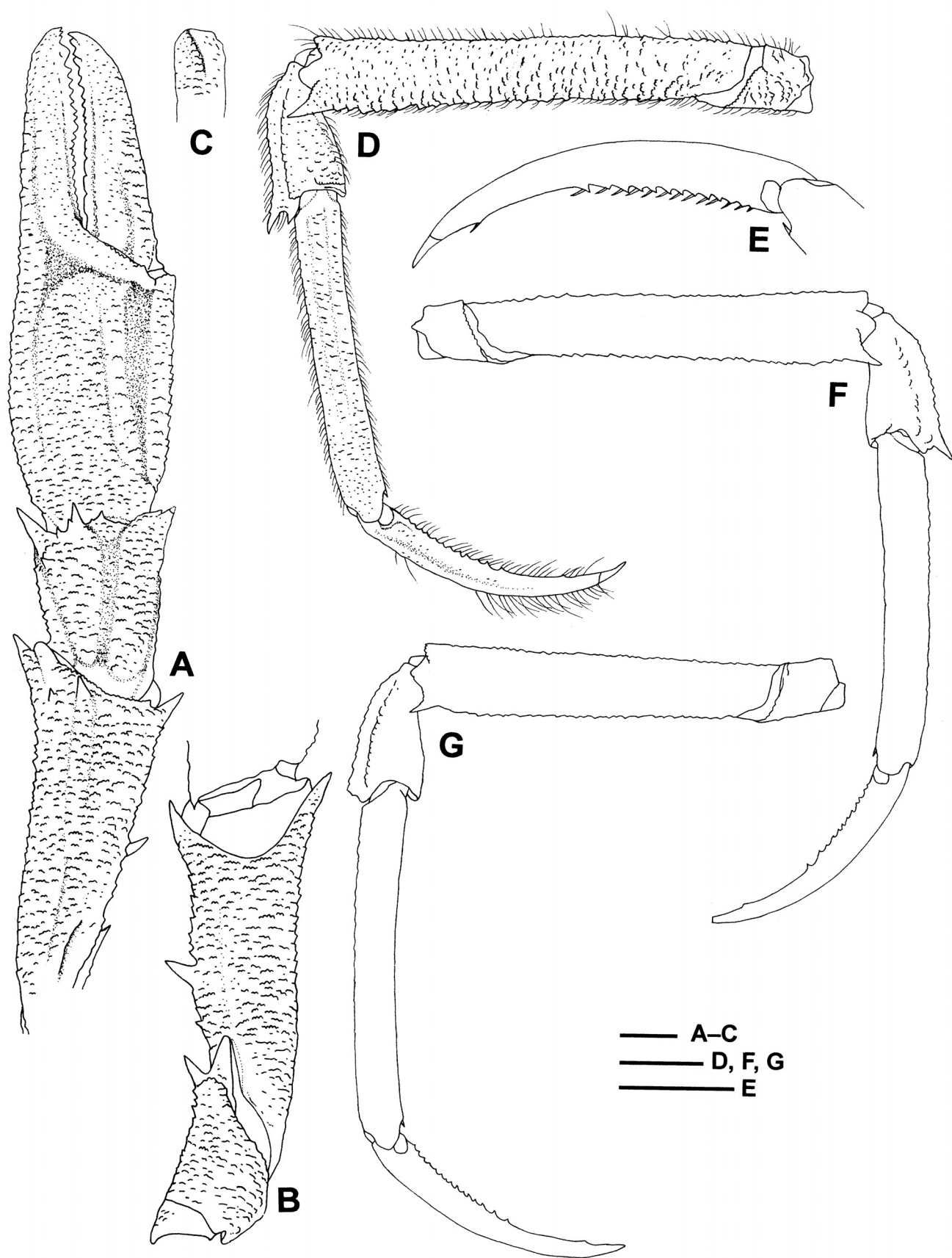


Fig. 2. *Munidopsis dentifalx*, new species: holotype, ovigerous female (cl 24.9 mm). A, left P1, dorsal view (setae omitted); B, same, ischium and merus, ventral view (setae omitted); C, same, distal part of fixed finger, lateral view; D, left P2, lateral view; E, same, dactylus and distal part of propodus, lateral view (surface structure and setae omitted); F, right P3, lateral view (surface structure and setae omitted); G, left P4, lateral view (surface structure and setae omitted). Scale bars = 3.0 mm.

base of P1 fingers; surfaces of ischium to propodus with numerous, short tuberculate ridges bearing short plumose setae. Meri elongate, subrectangular in lateral view; dorsal surface rounded, unarmed; distolateral and distomesial margins each with rounded projection; ventrolateral margin with strong distal spine; ventromesial margin unarmed; ventral surface flattish. Carpi each with elevated crest subparallel to dorsal crest on lateral surface; dorsal crest with strong distal spine (P2 and P3) or unarmed (P4); distolateral dorsal margin terminating in small spine (P2) or blunt projection (P3 and P4); ventrodorsal margin unarmed. Propodi, exclusive of distal rounded projection, 6.2–8.1 times as long as high; dorsal surface weakly convex; dorsolateral and dorsomesial margins not delimited; lateral surface with weakly elevated ridge in midline; ventral surface convex; ventrodorsal margin with short corneous spine mesially. Dactyli 0.8–0.9 length of propodi, slender, curved, each terminating in long, corneous claw; dorsal surface nearly smooth; ventral margin with 13–15 subtriangular teeth decreasing in sizes proximally on proximal two-thirds, each tooth accompanying with slender corneous spine and another low subdistal tooth far distant from proximal teeth.

Epipods present on P1–3.

**Colouration.** – Body, including corneas and pereopods, entirely pinkish orange; grooves and depressions on carapace pale to nearly whitish (Fig. 3). Setae light brown. Eggs red.

**Etymology.** – From a combination of the Latin, *dent* (tooth) and *falx* (sickle), referring to the P2–4 dactyli that are shaped like toothed sickles in the new species. The name is used as a noun in apposition.

**Remarks.** – The preserved ovigerous holotype carries 11 eggs, 2.1–2.3 mm in diameter. The female paratype is much smaller than the holotype and regarded as a young because the pleopods are not well developed.

The arrangement of the ventral teeth on the P2–4 dactyli in the new species is quite unusual in the genus *Munidopsis*, the ultimate spine being far distant from the penultimate. *Munidopsis dentifalx*, new species, appears closest to *M. villosa* Faxon, 1893 which is known from the Gulf of Panama



Fig. 3. *Munidopsis dentifalx*, new species: holotype, ovigerous female (cl 24.9 mm). Entire specimen, dorsal view.

and off Chile at depths of 768–975 m. They share the following characters: carapace without a row of spines in dorsal midline, covered with setiferous (short plumose setae) interrupted ridges; abdominal segments 2–4 each with a median spine on anterior dorsal ridge; ocular peduncles with subglobular corneas, lacking eye-spines; P2 not reaching tip of P1; P2–4 relatively slender, with meri not distinctly crested on dorsal margin and propodi of uniform height; and epipods present on P1–3. However, the new species can be readily separated from *M. villosa* by the absence of antennal and epigastric spines on the carapace and a median spine on the abdominal segment 5. *Munidopsis dentifalx* has only a pair of short elevated ridges instead of distinct spines on the epigastric region. Moreover, the ventral margins of the P2–4 dactyli are more strongly curved in the new species than in *M. villosa* (see Baba, 2005: Fig. 93e).

The distal parts of the P1–4 are dirty black in the holotype and more so in the paratype. The dark colouration may be related to a deep burrowing behavior and/or the colour of the substrata of the habitat in the new species (see Chan & de Saint Laurent, 1999).

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