

**RECORDS OF THE HERMIT CRAB GENUS *PAGURIXUS* MELIN, 1939
(DECAPODA: ANOMURA: PAGURIDAE) FROM SHALLOW CORAL REEFS IN THE
PANGLAO ISLANDS, THE PHILIPPINES, WITH DESCRIPTION OF A NEW SPECIES**

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ABSTRACT. — The pagurid hermit crab genus *Pagurixus* Melin, 1939, is widely distributed in shallow waters in tropical to warm temperate seas in the Indo-West to Central Pacific. This study deals with a collection made during the PANGLAO 2004 Marine Biodiversity Project. Nine species of the genus were identified, including one new to science: *P. concolor* Komai & Osawa, 2006, *P. formosus* Komai, 2010, *P. haigae* Komai & Osawa, 2007, *P. longipes* Osawa, Fujita & Okuno, 2006, *P. maorus* (Nobili, 1906), *P. nomurai* Komai & Asakura, 1995, *P. ruber* Komai & Osawa, 2006, *P. rubrovittatus* Komai, 2010, and *P. spiniferore*, new species. Of these, all but *P. haigae* are recorded from the Philippines for the first time, clearly suggesting that the inventory of the shallow coral reef fauna in the area is far from satisfactory. The new species, *P. spiniferore*, belongs to the *P. anceps* (Forest, 1954) species group, and is immediately distinguished from all other members of the group by the palm of the right cheliped in the male armed with a row of small spines or spiniform tubercles on each dorsolateral and dorsomesial margin and the presence of spines on the dorsodistal margin of the carpus of the right cheliped.

KEY WORDS. — Crustacea, Decapoda, Anomura, Paguridae, *Pagurixus*, new records, new species, Philippines

INTRODUCTION

The pagurid hermit crab genus *Pagurixus* Melin, 1939, is currently represented by 35 species from the Indo-West to Central Pacific (McLaughlin et al., 2010), of which 20 species (57%) have been described only in the last decade (Komai & Myorin, 2005; Komai, 2006, 2010; Komai & Osawa, 2006, 2007; Komai & Takada, 2006; Osawa et al., 2006; Osawa & Komai, 2007; Komai & Okuno, 2009). Many species of the genus occur in shallow coral reefs in tropical and subtropical seas, although some species are distributed in the southern hemisphere extend to temperate waters (McLaughlin & Haig, 1984; Gunn & Morgan, 1992). Most species are tiny in size and cryptic in habitats, and thus collections of samples for study are not easy. Recent discovery of new species is largely due to sampling efforts in subtidal zone, often using SCUBA equipment. From the Philippines, only three species, viz., *P. anceps* (Forest, 1954), *P. carinimanus* Komai & Osawa, 2006, and *P. haigae* Komai & Osawa, 2007, have been recorded (Komai & Osawa, 2006, 2007), but this only reflects that the inventory of the marine fauna is still far from satisfactory in

the area, which represents a hot spot of marine biodiversity (e.g., Carpenter & Springer, 2005).

The present study deals with a collection made during the PANGLAO 2004 Marine Biodiversity Project, which was carried out in the Bohol Sea, the Philippines. This expedition resulted in extensive collection of marine decapod crustaceans (Bouchet et al., 2009), though reports on hermit crabs are still rather few (cf. Asakura, 2010; McLaughlin & Rahayu, 2007; McLaughlin, 2008; McLaughlin & Lemaitre, 2009; Rahayu & Forest, 2009). In this study, the following nine species of *Pagurixus*, including one new to science, are reported: *P. concolor* Komai & Osawa, 2006, *P. formosus* Komai, 2010, *P. haigae*, *P. longipes* Osawa, Fujita & Okuno, 2006, *P. maorus* (Nobili, 1906), *P. nomurai* Komai & Asakura, 1995, *P. ruber* Komai & Osawa, 2006, *P. rubrovittatus* Komai, 2010, and *P. spiniferore*, new species. All but *P. haigae* are recorded from the Philippines for the first time. The new species belongs to the *P. anceps* (Forest, 1954) species group, and it is rather distinctive in this informal group. The colouration in life is first described for *P. rubrovittatus*.

The holotype of the new species is deposited in the National Museum of the Philippines, Manila (NMCR) and other materials examined in this study are deposited in the Zoological Reference Collection (ZRC), the Raffles Museum of Biodiversity Research, National University of Singapore, Natural History Museum and Institute, Chiba (CBM), and Museum national d'Histoire naturelle (MNHN), Paris, France. The shield length (sl) is measured from the tip of the rostrum to the midpoint of the posterior margin of the shield. Terminology used in the description follows Komai & Osawa (2006) and McLaughlin et al. (2007). Measurements of the chelipeds and ambulatory legs follow the protocol proposed by Komai (2010).

TAXONOMIC ACCOUNT

PAGURIDAE Latreille, 1802

Genus *Pagurixus* Melin, 1939

Pagurixus concolor Komai & Osawa, 2006

Pagurixus concolor Komai & Osawa, 2006: 41, figs. 15–18, 44D, 47; Komai, 2010: 1300; McLaughlin et al., 2010: 31 (list)

Material examined. — PANGLAO 2004, stn B5, Panglao Island, Biking, 09°35.2'N, 123°50.4'E, 4 m, reef slope with overhangs, 2 Jun.2004, 1 male (sl 2.6 mm), ZRC 2012.0914.

Distribution. — Heretofore known from Maldives, Japan, Guam, Samoa, New Caledonia, and Tahiti, subtidal to 20 m. Newly recorded from the Philippines.

Remarks. — The present male specimen agrees well with the type description by Komai & Osawa (2006).

Pagurixus formosus Komai, 2010

Pagurixus formosus Komai, 2010: 1306, figs 17–19; McLaughlin et al., 2010: 31 (list)

Material examined. — PANGLAO 2004, stn B5, Panglao Island, Biking, 09°35.2'N, 123°50.4'E, 4 m, reef slope with overhangs, 2 Jun.2004, 1 female (sl 3.0 mm), ZRC 2012.0915.

Distribution. — Heretofore known only from southern Taiwan, 3–8 m. Newly recorded from the Philippines.

Remarks. — The present female specimen agrees well with the original description by Komai (2010).

Pagurixus haigae Komai & Osawa, 2007

Pagurixus laevimanus – McLaughlin & Haig, 1984: 142, fig. 7; not *Pagurixus laevimanus* (Ortmann, 1892)

Pagurixus haigae Komai & Osawa, 2007: 97, figs. 1–4; Komai, 2010: 1287; McLaughlin et al., 2010: 32 (list)

Material examined. — PANGLAO 2004, stn B12, Panglao Island, Doljo Point, 09°35.6'N, 123°43.2'E, 24–27 m, reef slope, 14 Jun.2004, 1 male (not measured), ZRC 2012.0916; stn B18, Panglao Island, Sungcolan Bay, 09°38.5'N, 123°49.7'E, 3–5 m, blocks dispersed among seagrass, 20 Jun.2004, 2 males (sl 1.2, 1.5 mm), 2 females (sl 1.2 mm; one not measured), ZRC 2012.0917; stn B23, Balicasag, Black Forest, 09°31.1'N, 123°41.3'E, 20–25 m, rubble on sand, 5 males, 1 juvenile (not measured), ZRC 2012.0918; same data, 2 males (sl 1.3, 1.5 mm), CBM-ZC 11252; stn B39, Panglao Island, Pontod Lagoon 1, 09°32.8'N, 123°42.1'E, 17–25 m, reef wall with small caves, 2 Jul.2004, 1 male (sl 1.3 mm), ZRC 2012.0919; stn B42, Panglao Island, between Momo and Napaling, 09°37.0'N, 123°46.0'E, 30–33 m, edge on reef wall, 6 Jul.2004, 1 male, ZRC 2012.0920; stn D8, Panglao Island, Dao, 09°34.0'N, 123°48.9'E, 1–4 m, sandy bottom, seagrass, rubble, coral slabs, 9 Jun.2004, 2 males (sl 1.7, 1.9 mm), ZRC 2012.0921; stn M1, Panglao Island, Alona Beach, 09°32.9'N, 123°46.6'E, intertidal to shallow subtidal, May to Jul.2004, 2 males, 3 females (not measured because of poor condition), ZRC 2012.0922; stn M3, Panglao Island, Danao, 9°32.5'N, 123°44.7'E, 0–2.5 m, reef, 31 May to 17 Jun.2004, 9 males, 2 females, 2 ovig. females (not measured); same data, 1 male (sl 1.8 mm), MNHN-IU-2009-2405; stn M7, Panglao Island, Momo Beach, 0–3 m, 09°36.1'N, 123°45.2'E, reef platform with seagrass, 1 Jun.2004, 2 ovig. females (sl 1.3, 1.7 mm), ZRC 2012.0923; stn M11, Panglao Island, Sungcolan Bay, 09°38.3'N, 123°49.6'E, 0–3 m, rocky intertidal, fringe mangrove and seagrass, 6 Jun.2004, 1 ovig. female (sl 1.9 mm), ZRC 2012.0924; stn M18, Panglao Island, Gak-Ang Islet, 09°33.0'N, 123°43.5'E, intertidal to shallow subtidal, sandy bottom and seagrass, 10 Jun.2004, 27 males (sl 1.8–2.5 mm), 15 females (sl 1.5–1.7 mm), ZRC 2012.0925; stn R66, Panglao Island, Sungcolan inlet, 09°38.3'N, 123°50.3'E, 1–3 m, channel between lagoon and the sea, 18 Jun.2004, 1 ovigerous female (sl 2.0 mm) ZRC 2012.0926; stn S32, Panglao Island, Pontod Islet lagoon, 09°33.1'N, 123°44.0'E, 4 m, sand with extensive seagrass, few coral heads, 8 Jun.2004, 5 males (sl 1.3 mm), 1 ovig. female (not measured), ZRC 2012.0927.

Distribution. — Ryukyu Islands (Japan), Guam, the Philippines, New Guinea, New Caledonia, and Phuket (Thailand); intertidal to 33 m.

Remarks. — This species was recorded from the Philippines by Komai & Osawa (2007). It exhibits substantial variation in the armature and ornamentation of the right cheliped in males, as Komai & Osawa (2007) mentioned. Furthermore, it has been found that the terminal margins of the telson vary from oblique to nearly horizontal.

Pagurixus longipes Osawa, Fujita & Okuno, 2006

Pagurixus longipes Osawa, Fujita & Okuno, 2006: 36, figs. 4–6, 7C; McLaughlin et al., 2010: 32 (list)

Material examined. — PANGLAO 2004, stn B39, Panglao Island, Pontod Lagoon 1, 09°32.8'N, 123°42.1'E, 17–25 m, reef wall with small caves, 2 Jul.2004, 1 male (sl 2.2 mm) ZRC 2012.0928; stn B42, Panglao Island, between Momo and Napaling, 09°37.0'N, 123°46.0'E, 30–33 m, edge on reef wall, 6 Jul.2004, 1 male (sl 3.0 mm), 1 ovig. female (sl 2.4 mm), ZRC 2012.0929.

Distribution. — Heretofore known only from the Ryukyu Islands, Japan; submarine cave, at a depth of 35 m. Newly recorded from the Philippines, at depths of 17–33 m.

Remarks. — The present specimens agree well with the type description by Osawa et al. (2006) in every diagnostic aspect, including the lack of setal rows on the ultimate segment of the antennular peduncle and the elongate, and slender chelipeds and ambulatory legs.

***Pagurixus maorus* (Nobili, 1906)**

Eupagurus maorus Nobili, 1906: 259 [type locality: Rikitea, Magareva, Gambier Islands]; 1907: 371, pl. 1, fig. 9

Pagurixus maorus – McLaughlin & Haig, 1984: 127, fig. 2; Komai & Asakura, 1995: 347, figs. 4–6; Komai & Osawa, 2006: 17, figs. 4–7, 44A, 47; Komai, 2010: 1313; McLaughlin et al., 2010: 32 (list)

Material examined. — PANGLAO 2004, stn B18, Panglao Island, Sungcolan Bay, 09°38.5'N, 123°49.7'E, 3–5 m, blocks dispersed among seagrass, 20 Jun.2004, 1 ovig. female (sl 2.9 mm), ZRC 2012.0930.

Distribution. — Southern Japan, the Philippines, Indonesia, Marshall Islands, New Caledonia, and French Polynesia; intertidal to 20 m.

Remarks. — The present specimen agrees well with the previous descriptions by McLaughlin & Haig (1984), Komai & Asakura (1995), and Komai & Osawa (2006).

***Pagurixus nomurai* Komai & Asakura, 1995**

Pagurixus nomurai Komai & Asakura, 1995: 341, figs. 1–3 [type locality: Kume-jima Island, Ryukyu Islands, 5 m]; Komai & Osawa, 2006: 32, figs. 12–14, 44C, 47; Osawa & Chan, 2009: 329, fig. 7E; McLaughlin et al., 2010: 32 (list)

Material examined. — PANGLAO 2004, stn B8, Panglao Island, Napaling, 09°37.1'N, 123°46.1'E, 3 m, subtidal reef platform, 7 Jun.2004, 1 male (sl 2.1 mm), ZRC 2012.0931.

Distribution. — Widely distributed in the western to Central Pacific; subtidal to 60 m. Newly recorded from the Philippines.

Remarks. — The present specimen agrees well with the descriptions by Komai & Asakura (1995) and Komai & Osawa (2006).

***Pagurixus ruber* Komai & Osawa, 2006**

Pagurixus boninensis – McLaughlin & Haig, 1984: 124 (part), fig. 1a, c, d, f, g

Pagurixus ruber Komai & Osawa, 2006: 92, figs. 40–43, 46B, 48; McLaughlin et al., 2007: 250, unnumbered fig.; 2010: 32 (list); Komai, 2010: 1321

Material examined. — PANGLAO 2004, stn B8, Panglao Island, Napaling, 09°37.1'N, 123°46.1'E, 3 m, subtidal reef platform, 7 Jun.2004, 1 female (sl 1.8 mm), ZRC 2012.0932; stn R40, Pamilacan Island, 09°29.2'N, 123°55.1'E, 8–33 m, damaged coral slope, 12 Jun.2004, 1 female (sl 2.0 mm), ZRC 2012.0933.

Distribution. — Heretofore known from southern Japan, Taiwan, Guam, Society Islands, Tuamotu, New Caledonia and Maldives; shallow subtidal to 8 m. Newly recorded from the Philippines.

Remarks. — The present female specimens agree well with the type description by Komai & Osawa (2006).

***Pagurixus rubrovittatus* Komai, 2010**

(Fig. 1)

Pagurixus rubrovittatus Komai, 2010: 1321, figs 23–25 [type locality: Surprise Atoll, New Caledonia, 39 m]; McLaughlin et al., 2010: 32 (list)

Material examined. — PANGLAO 2004, stn B10, Panglao Island, Momo Beach, 09°36.5'N, 123°45.6'E, 3–14 m, reef wall with small caves, 10 Jun.2004, 1 male (sl 1.9 mm), ZRC 2012.0934; stn B12, Panglao Island, Doljo Point, 09°35.6'N, 123°43.2'E, 24–27 m, reef slope, 14 Jun.2004, 14 Jun.2004, 1 male (sl 2.9 mm), 1 ovig. female (sl 2.4 mm), 1 juvenile (sl 2.0 mm) ZRC 2012.0935; stn B16, Panglao Island, Bingag, 09°37.6'N, 123°47.3'E, 20 m, coral rubble on sand and gravel, 17 Jun.2004, 1 male (sl 1.9 mm), 1 ovig. female (sl 1.9 mm), ZRC 2012.0936; stn B17, Panglao Island, Bingag, 09°37.5'N, 123°46.9'E, 3–21 m, reef wall with small caves, 19 Jun.2004, 1 female (sl 3.0 mm), ZRC 2012.0937; stn B21, Panglao Island, Napaling, 09°37.2'N, 123°46.4'E, 20–21 m, reef wall with small caves, 24 Jun.2004, 1 female (sl 2.9 mm), ZRC 2012.0938; stn B32-12, Panglao Island, Looc, 09°35.8'N, 123°44.6'E, 20 m, reef wall, 26 Jun.2004, 2 males (sl 2.5 mm, 3.0 mm), 1 female (sl 1.7 mm), ZRC 2012.0939; same data, 1 female (sl mm; photo), ZRC 2012.0940; stn B35, Panglao Island, North of Doljo, 09°35.9'N, 123°44.5'E, 31 m, reef wall, 1 Jul.2004, 1 female (sl 2.5 mm), ZRC 2012.0941; stn B36, Panglao Island, north of Doljo, 09°35.9'N, 123°44.5'E, 24 m, reef wall, 1 Jul.2004, 1 male (sl 3.1 mm), 1 female (sl 2.0 mm), 1 ovig. female (sl 1.7 mm), ZRC 2012.0942; stn B39, Panglao Island, Pontod Lagoon 1, 09°32.8'N, 123°42.1'E, 17–25 m, reef wall with small caves, 2 Jul.2004, 3 males (sl 1.5–2.6 mm), 1 female (sl 2.1 mm), 3 ovig.



Fig. 1. *Pagurixus rubrovittatus* Komai, 2010, male (sl 2.5 mm), ZRC 2012.0939, PANGLAO 2004, stn 32-12. Entire animal in dorsal view, showing colouration in life.

females (sl 2.1–3.0 mm), ZRC 2012.0943; stn B41, Balicasag Island, 09°30.9'N, 123°40.8'E, 17–19 m, floor of large cave, 4 Jul.2004, 1 male (sl 2.8 mm), 1 female (sl 2.9 mm), 1 ovig. female (sl 2.2 mm), MNHN-IU-2009-2406; stn B42, Panglao Island, between Momo and Napaling, 30–33 m, ledge on reef wall, 09°37.0'N, 123°46.0'E, 6 July 2004, 1 female (sl 2.3 mm), MNHN-IU-2009-2407; North coast of Panglao, Jul.2004 – May 2005, coll. J. Arbasto, 1 male (sl 2.9 mm), ZRC 2012.0944; stn R3, Panglao Island, Alona reef, 09°33.0'N, 123°46.5'E, 5–24 m, base of reef slope, May–Jul.2004, 1 male (sl 1.6 mm), ZRC 2012.0945.

Colour in life. — See Fig. 1. Body and appendages generally pale pink. Ocular peduncle with brown spot on dorsal surface adjacent to base of cornea and pale brown transverse band at midlength. Antennular peduncle with distal half of ultimate segment dark brown. Antennal peduncle with fifth segment having lateral red stripe; antennal flagella alternated with white and brown every three or four articles. Carpus of right cheliped with red longitudinal stripe on lateral surface medially. Merus also with two red longitudinal stripes on lateral surface. Left cheliped also with thin red longitudinal stripes; palm with three dorsal and one ventral stripes; carpus with stripes along dorsolateral and dorsomesial margins and two stripes on each lateral and mesial face; merus with one dorsal, three lateral, three mesial and two ventral stripes. Ambulatory legs also with red longitudinal stripes; dactyli each with three lateral and three mesial stripes; propodi each with three lateral and three mesial stripes, ventral surface not clearly striped but with tinge of red; carpi each with four lateral and four mesial stripes, ventralmost stripe sometimes obscure; meri each with dorsal and ventral surfaces bordered by lateral and mesial stripes, and with three lateral and two mesial stripes.

Distribution. — Heretofore known with certainty from New Caledonia and Chesterfield Islands; 28–58 m. Newly recorded from the Philippines, 3–27 m.

Remarks. — The present series of specimens agrees well with the type description by Komai (2010). Superficially, this species closely resembles *Pagurixus maorus* in the morphology and the striped pattern of colouration in the thoracic appendages, but the lack of setal rows on the ventral surface of the ultimate segment of the antennular peduncle will immediately distinguish *P. rubrovittatus* from *P. maorus*. When the colour is still preserved, the presence of a dark ring on the ultimate segment of the antennular peduncle is characteristic to *P. rubrovittatus*.

Pagurixus spiniferore, new species

(Figs. 2–4)

Material examined. — Holotype: PANGLAO 2004, stn B23, Balicasag, Black Forest, 09°31.1'N, 123°41.3'E, 20–25 m, rubble on sand, male (sl 1.4 mm), NMCR 39060.

Description. — Shield (Fig. 2A) about 1.2 times longer than wide; anterior margin between rostrum and lateral projections slightly concave; anterolateral margins sloping; dorsal surface slightly convex, with few short setae. Rostrum triangular,

moderately produced, terminating subacutely. Lateral projections obsolete, each with submarginal spinule.

Ocular peduncles (Fig. 2A) moderately long and stout, about 0.7 length of shield, with 3 tufts of short stiff setae on dorsal surface mesially and 1 stiff setae located at midlength of mesial face; cornea slightly dilated, corneal diameter about 0.4 of peduncular length; basal part slightly inflated, narrower than cornea. Ocular acicles, subtriangular, each with submarginal spinule.

Antennular peduncles (Fig. 2A, B) moderately stout, overreaching distal corneal margins by about 0.3 lengths of ultimate segments. Ultimate segment 3.1 times longer than high, with short individual seta on dorsolateral distal portion; ventral surface glabrous. Basal segment with small laterodistal spine on statocyst lobe. Ventral flagellum with row of sparse setae on lateral and mesial margins.

Antennal peduncles (Fig. 2A) overreaching distal corneal margins by about 0.1 length of fifth segment. Third segment with small spine at ventromesial distal angle. Second segment with spinule at dorsomesial distal angle; laterodistal projection reaching nearly midlength of fourth segment, terminating in simple spine. First segment with laterodistal spinule; ventromesial distal margin with small projection. Antennal acicle moderately long, faintly arcuate, slightly overreaching base of cornea, terminating in spinule obscured by tuft of stiff setae; mesial margin with few tufts of stiff setae. Antennal flagellum broken.

Male right cheliped (Fig. 3A–C) moderately stout, not particularly elongate. Chela about 2.2 times longer than wide. Dactylus subequal in length to palm measured along mesial margin, terminating in small calcareous claw; dorsomesial or mesial margin not delimited; slightly rounded dorsal surface without conspicuous spines or tubercles, ventral surface nearly smooth; cutting edge with two obtuse calcareous tooth in proximal half and row of minute, blunt teeth in distal half. Palm slightly widened distally, subequal in length to carpus; dorsal surface convex, with some small to tiny spines (proximal spine on midline conspicuous); dorsolateral margin delimited by row of small spines extending onto fixed finger and decreasing in size distally; dorsomesial margin also with row of small spines or spiniform tubercles, also decreasing in size distally; lateral and mesial faces almost glabrous; ventral surface also smooth, slightly convex, with few short setae. Fixed finger terminating in calcareous claw; cutting edge with row of small, rounded teeth. Carpus subequal in length to merus, length about 1.4 of distal width; dorsal surface with irregular rows of small spines (dorsodistal spine prominent) and moderately short stiff setae dorsomesially and few tiny spinulose tubercles and short spiniform setae dorsolaterally; dorsodistal margin with 3 small acute spines lateral to midpoint; lateral surface without trace of division; ventral surface convex, no prominent setae on distal margin; ventrodistal margin unarmed. Meral-carpal articulation lacking any pronounced clockwise rotation. Meral surfaces almost glabrous; dorsodistal margin with some spiniform setae; ventrolateral margin with trace of granules distally;

ventromesial margin with row of 4 small spines in distal half; ventral surface smooth, with few setae. Ischium with smooth ventromesial margin; surfaces smooth.

Left cheliped (Fig. 3E–H) moderately short, stout. Chela about 2.8 times longer than wide, about 1.2 times longer than carpus. Dactylus longer than palm, terminating in small corneous claw, with tufts of stiff setae on surfaces arranged in longitudinal rows; dorsal surface rounded, smooth; cutting edge with row of small corneous teeth. Palm about half length of carpus; dorsal surface with row of tiny spines on elevated midline, and with one more row of spinules proximal to base of dactylus; dorsolateral and dorsomesial margins not delimited; lateral surface with scattered low

granules; mesial and ventral surfaces smooth; scattered tufts of setae on ventral surface (including fixed finger). Fixed finger terminating in small corneous claw, cutting edge with row of small corneous teeth. Carpus somewhat compressed laterally, subequal in length to merus; length 2.4 of distal width and 2.1 of height; dorsolateral margin with 2 small spines in distal half and few low protuberances bearing stiff setae in proximal half, dorsomesial margin with row of 3 small spines in distal half and few low protuberances bearing stiff setae in proximal half; dorsodistal margin with 2 spines; lateral surface nearly perpendicular, without trace of division, nearly smooth, ventrolateral margin with 1 small spine and low, obtuse protuberances; mesial surface with few low protuberances dorsally, otherwise nearly smooth, ventrodistal

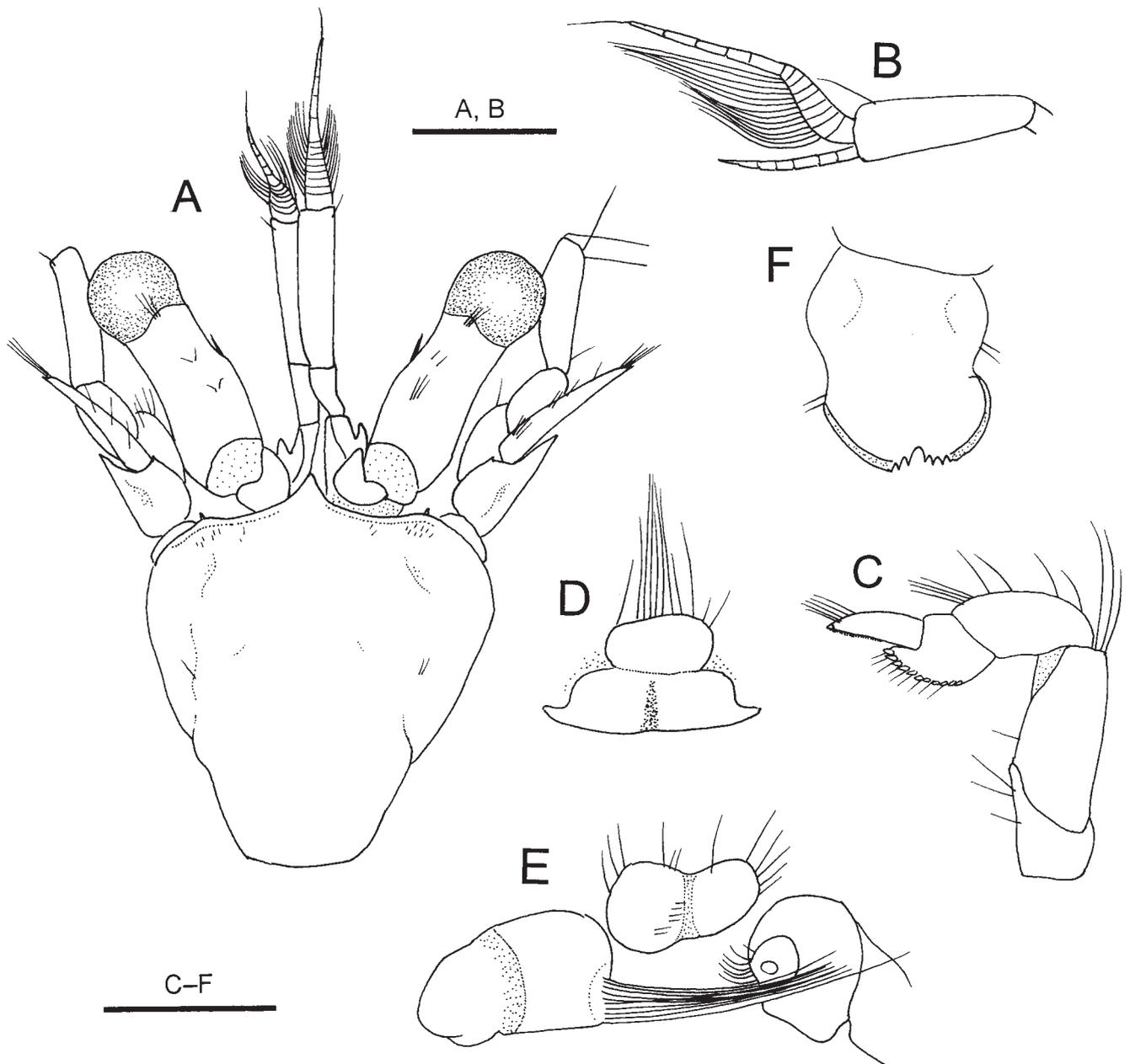


Fig. 2. *Pagurixus spiniferore*, new species, male (sl 1.4 mm), holotype, NMCR 39060, PANGLAO 2004, stn 23. A, shield and cephalic appendages, dorsal view; B, ultimate segment and flagella of left antennule, lateral view; C, left fourth pereopod, lateral view; D, sixth thoracic sternite, ventral view; E, eighth thoracic sternite and coxae of fifth pereopods, ventral view; F, telson, dorsal view. Scale bars = 0.5 mm.

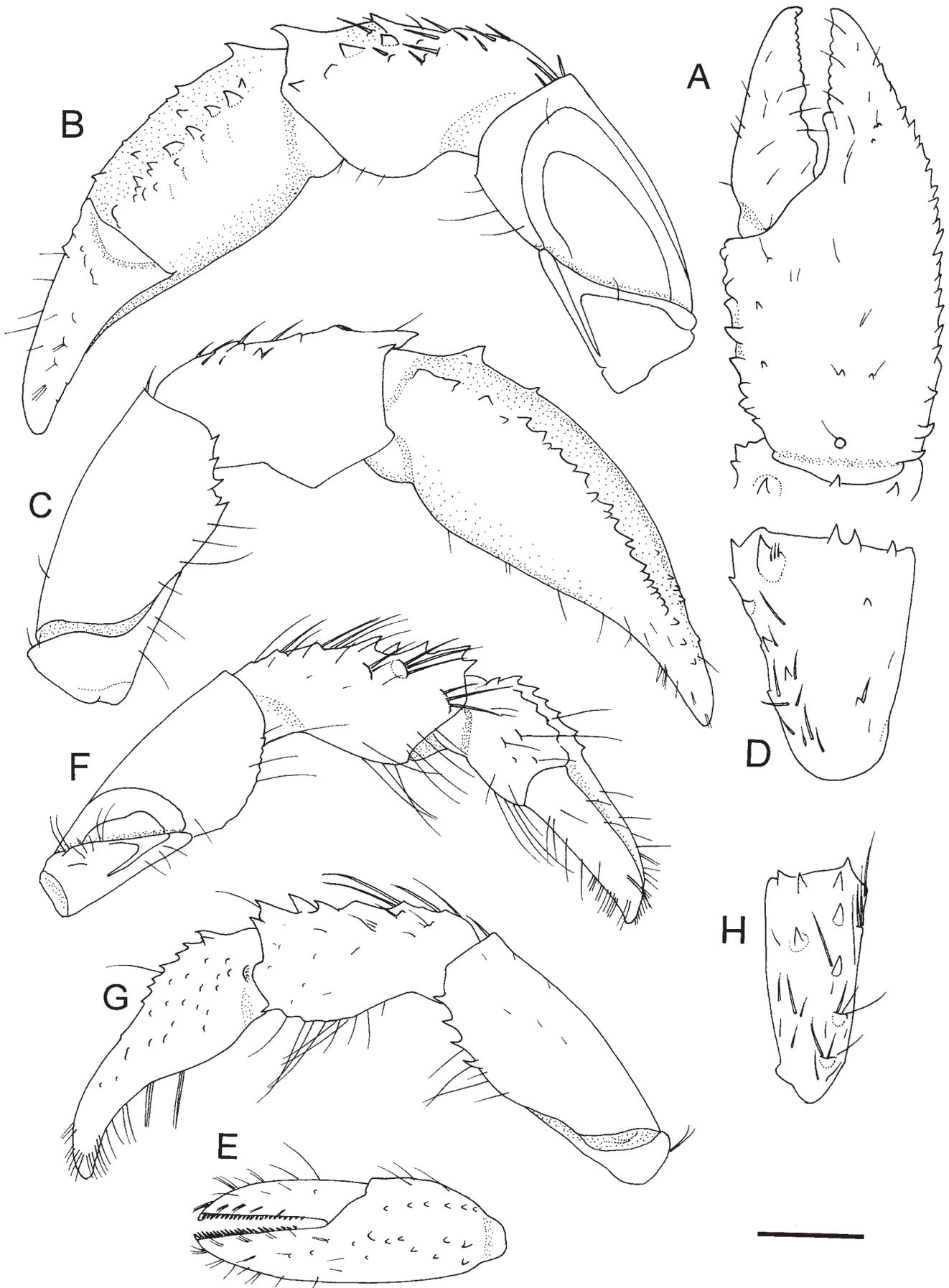


Fig. 3. *Pagurixus spiniferore*, new species, male (sl 1.4 mm), holotype, NMCR 39060, PANGLAO 2004, stn 23. A, right chela, dorsal view; B, right cheliped, mesial view; C, same, lateral view; D, same, carpus, dorsal view; E, left chela, dorsal view; F, left cheliped, mesial view; G, same, lateral view; H, same, carpus, dorsal view. Scale bar = 0.5 mm.

margin unarmed; ventral surface convex, with several long setae. Merus glabrous on dorsal surface, dorsodistal margin unarmed; lateral surface almost smooth, ventrolateral margin with row of 4 small spines distally; mesial face also smooth, ventromesial margin minutely denticulate; ventral surface weakly convex, smooth, with few setae. Ischium unarmed.

Ambulatory legs (Fig. 4A, D) moderately stout, similar on right and left. Dactyli (Fig. 4B, E) about 0.9–1.0 times as long as propodi, 6.2–6.7 times longer than wide, terminating

in large corneous claws; dorsal surfaces with sparse short setae; lateral and mesial faces smooth; ventral margins each with 6 or 7 moderately long corneous spines increasing in size distally. Propodi not tapering distally, 4.4–4.8 times longer than wide; dorsal surfaces with sparse tufts of moderately long setae; lateral and mesial faces smooth; ventral margins each with 1 or 2 minute corneous spinules, ventrodistal margins each with single or paired small corneous spines. Carpi each with small dorsodistal spine, dorsal surfaces each with low protuberance at about proximal one-third (second; Fig. 4C),

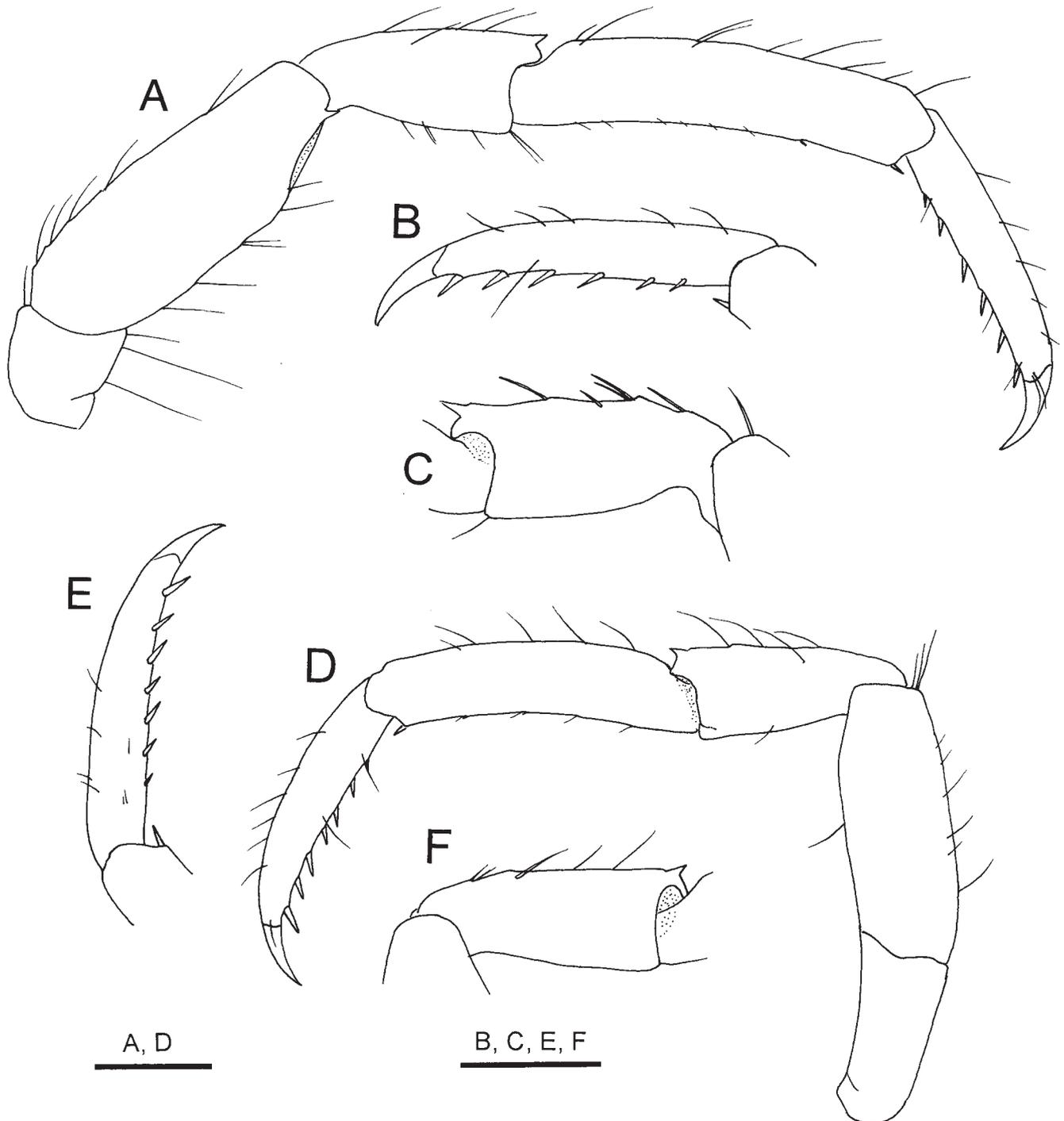


Fig. 4. *Pagurixus spiniferore*, new species, male (sl 1.4 mm), holotype, NMCR 39060, PANGLAO 2004, stn 23. A, right second pereopod, lateral view; B, same, dactylus, mesial view; C, same, carpus, mesial view; D, left third pereopod, lateral view; E, same, dactylus, mesial view; F, same, carpus, mesial view. Scale bars = 0.5 mm.

or nearly smooth (third; Fig. 4F). Meri with sparse setae on smooth dorsal and ventral margins; lateral surfaces nearly smooth; ventrolateral distal margins each with one small spine (second) or unarmed (third).

Fourth pereopods (Fig. 2C) subequal and similar. Dactyli moderately broad, straight, terminating in small corneous claw, with tuft of short setae distally. Propodi with sparse setae on dorsal margins; mesial faces nearly flat or slightly convex, with few short setae; propodal rasp of single row of corneous scales. Carpi without prominent tufts of setae on mesial faces.

Coxae of fifth pereopods slightly unequal in male (Fig. 2E); right coxa with prominent tuft of setae overreaching lateral margin of left coxa; no development of posteromesial protrusion apparent; papilla-like protrusion of vas deferens present. Left coxa with gonopore mesially encircled by short setae; papilla-like protrusion of vas deference seen.

Anterior lobe of sixth thoracic sternite (Fig. 2D) roundly subrectangular, slightly skewed, with row of short to long setae on anterior margin. Eighth thoracic sternite (Fig. 2E) composed of two distinctly unequal, closely set, rounded lobes; each lobe bearing some short setae laterally to anteriorly.

Telson (Fig. 2F) with terminal margins oblique, with 3 (left) or 4 (right) spinules.

Colouration in life. — Not known.

Distribution. — So far known only from the type locality, Balicasag, Bohol, the Philippines, 20–25 m.

Remarks. — *Pagurixus spiniferore*, new species, is referred to the *P. anceps* species group because of the absence of setal rows on the ventral surface of the ultimate segment of the antennular peduncle. Currently, the following 15 species is known in this informal species group: *P. acanthocarpus* Komai & Okuno, 2009, *P. amsa* Morgan, 1993, *P. anceps*, *P. aurantiaca* Komai, 2010, *P. dissimilis* Osawa & Komai, 2007, *P. fasciatus* Komai & Myorin, 2005, *P. hectori* (Filhol, 1883), *P. haigae* Komai & Osawa, 2007, *P. handrecki* Gunn & Morgan, 1992, *P. jerviensis* McLaughlin & Haig, 1984, *P. kermadescensis* de Saint Laurent & McLaughlin, 2000, *P. longipes*, *P. nanus* Komai & Takada, 2006, *P. patiae* Komai, 2006, and *P. stenops* Morgan, 1993. When male is concerned, the new species is immediately distinguished from these 15 species by the armature of the right cheliped. In *P. spiniferore*, the dorsolateral and dorsomesial margins of the palm bear a row of small spines or spiniform tubercles respectively; the palm is armed with a conspicuous proximal spine on the midline. In other species, the dorsolateral and dorsomesial margins of the palm of the right cheliped are not delimited or are carinate at most. Furthermore, the presence of spines on the dorsodistal margin of the carpus of the right cheliped differentiates the new species from all but *P. handrecki*. The carpus of the second pereopod bears a low protuberance on the dorsal margin proximal to the midlength in the new species.

In all but *P. acanthocarpus*, *P. aurantiaca*, *P. dissimilis* and *P. nanus*, the carpus of the second pereopod is unarmed on the dorsal margin. In *P. acanthocarpus*, the carpus of the second pereopod bears usually a row of small spines other than the dorsodistal spine; in *P. aurantiaca*, *P. dissimilis* and *P. nanus*, there is one tiny spine on the dorsal margin of the carpus of the second pereopod located proximal to the midlength.

Etymology. — From the combination of the Latin, *spinifer* (= spinous) and *ore* (edge), referring to the spinose dorsolateral and dorsomesial margins of the right chela in this new species. Used as a noun in apposition.

ACKNOWLEDGEMENTS

The “PANGLAO 2004” Marine Biodiversity Project was a collaboration between Muséum national d’Histoire naturelle, Paris (Principal Investigator, Philippe Bouchet) and University of San Carlos, Cebu City (Principal Investigator, Danilo Largo). The “PANGLAO 2004” was supported by the Total Foundation for Biodiversity and the Sea, the French Ministry of Foreign Affairs, and the ASEAN Regional Center for Biodiversity Conservation (ARCBC). The Philippines Bureau of Fisheries and Aquatic Resources (BFAR) is acknowledged for issuing a research permit on the material collected by the “PANGLAO 2004”.

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