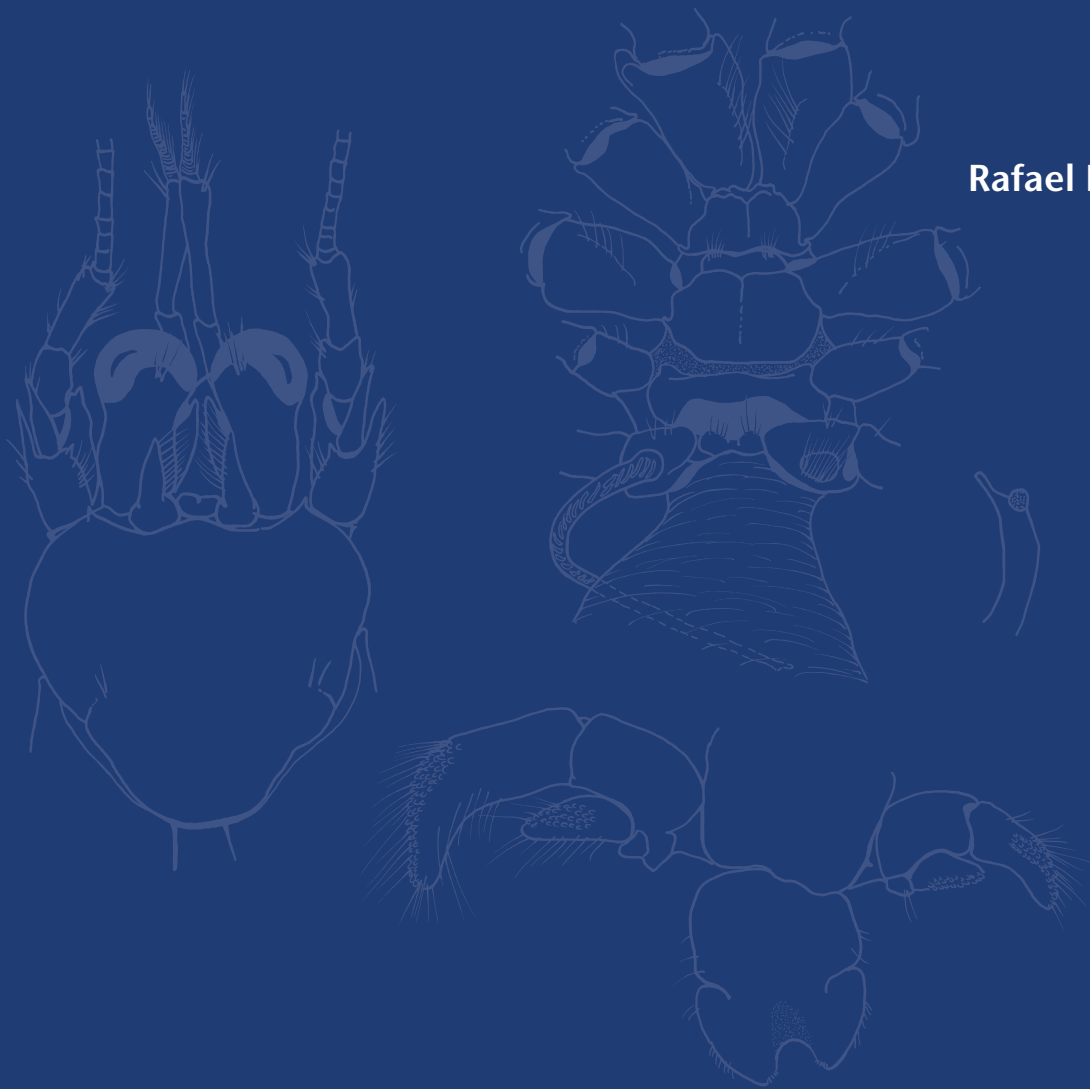


Two new species and new records of *Catapagurus*
A. Milne-Edwards, 1880 (Crustacea, Decapoda,
Anomura, Paguridae) from the southwestern Pacific

Rafael LEMAITRE



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Catapagurus poupini n. sp., holotype male 3.0 mm, Marquesas, Hiva Oa island, MUSORSTOM 9; stn CP1212, MNHN-IU-2022-4536.

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Two new species and new records of *Catapagurus* A. Milne-Edwards, 1880 (Crustacea, Decapoda, Anomura, Paguridae) from the southwestern Pacific

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ABSTRACT

Two new species of the genus *Catapagurus* A. Milne-Edwards, 1880, *C. poupini* n. sp. and *C. thysanodactylus* n. sp., from the western pacific are fully described and compared with their morphological closest congeners. The horizontal distribution of two others species is considerably expanded eastward to the Fiji Islands, for *C. franklinae* McLaughlin, 2004 (previously known from the Coral and Tasman Seas, and New Caledonia); and for *C. tanimbarensis* McLaughlin, 1997, previously known from the Kai and Tanimbar Islands and Indonesia.

RÉSUMÉ

Deux nouvelles espèces et nouveaux signalements de *Catapagurus* A. Milne-Edwards, 1880 (Crustacea, Decapoda, Anomura, Paguridae) du sud-ouest du Pacifique.

Deux nouvelles espèces du genre *Catapagurus* A. Milne-Edwards, 1880 du Pacifique occidental sont décrites. La répartition horizontale de deux autres espèces est, par ailleurs, considérablement étendue vers l'est : jusqu'aux îles Fidji pour *C. franklinae* McLaughlin, 2004, connu auparavant de la mer de Corail, de la mer de Tasman et de Nouvelle-Calédonie ; et pour *C. tanimbarensis* McLaughlin, 1997, connu auparavant des îles Kei et Tanimbar et d'Indonésie.

KEY WORDS

Paguridae,
Catapagurus,
new records,
new species.

MOTS CLÉS

Paguridae,
Catapagurus,
signalements nouveaux,
espèces nouvelles.

INTRODUCTION

Among the 88 genera currently in the family Paguridae Latreille, 1802, *Catapagurus* A. Milne-Edwards, 1880 is one of 56 (63.6%) of the genera in the family in which the males of the species are characterized by having sexual tubes that exhibit a remarkable variety of shapes and symmetry. Before Asakura's (2001) revision of *Catapagurus*, only 11 species of this genus were known from the world. Asakura's study added eight new species which at the time he placed in the reinstated genus *Hemipagurus* Smith, 1881, and subsequently eight more have been described in various studies (McLaughlin 2002, 2004; Komai & Osawa 2009; Nucci & de Melo 2012; Komai & Rahayu 2021; Komai *et al.* 2022).

An examination of selected samples of *Catapagurus* collected in the Western and Central South Pacific during French expeditions sponsored by the Muséum national d'Histoire naturelle, Paris (MNHN) and that were being studied by the late Patsy A. McLaughlin (see obituary in Lemaitre 2012), revealed the existence of two more new species that are herein described. With the description of these two new species, the genus now contains 30 species and now ranks second among the genera with species having sexual tubes only to *Catapaguroides* A. Milne-Edwards & Bouvier, 1892 which contains 32 species. In addition, the studied samples contain specimens of *C. franklinae* McLaughlin, 2004 and *C. tanimbarensis* McLaughlin, 1997 from localities much eastward than previously known.

MATERIAL AND METHODS

The studied specimens remain deposited in the MNHN. Measurements of specimen size (+ 0.1 mm) are of shield length, from the tip of rostrum to posterior midpoint of the shield. General terminology follows McLaughlin (2003), except for the use of "pleon" in lieu of "abdomen" in accord with Schram & Koenemann (2004), and thoracic sternites which are referred to only by the pereopod pairs between which they are ventrally positioned as per Felder *et al.* (2019).

ABBREVIATIONS

ovig ovigerous;
stn station.

Institutions

MNHN Muséum national d'Histoire naturelle, Paris,
USNM National Museum of Natural History, Smithsonian
 Institution, Washington D.C.

SYSTEMATICS

Family PAGURIDAE Latreille, 1802
Genus *Catapagurus* A. Milne-Edwards, 1880

Catapagurus poupini n. sp.
(Figs 1-3)

[urn:lsid:zoobank.org:act:76D5F6D5-9A08-4C40-A18D-0EC451E1938C](https://doi.org/10.21203/rs.3.rs-2765665/v1)

TYPE MATERIAL. — **Holotype**, Marquesas Archipelago • ♂ 3.0 mm; Hiva Oa island; MUSORSTOM 9; stn CP1212; 09°49.9'S,

139°02.2'W; 50-80 m depth; shell sands with segment of *Halimeda*; 29.VIII.1997; MNHN-IU-2022-4536.

Paratypes. Marquesas Archipelago • 2 ♂ 3.0-3.1 mm; Hiva Oa Island; N.O. *Alis*, MUSORSTOM 9; stn CP1215; 49-62 m depth; 09°49.5'S, 140°02.2'W; 29.VIII.1997; Bouchet, Dayrat, Richer de Forges legs; MNHN-IU-2022-4537 • 1 ♂ 2.6 mm, 2 ovig. ♀ 2.5 mm, 2.6 mm; same data as for preceding; USNM 1441354 • 5 ♂ 2.1-2.7 mm; Hiva Oa Island; N.O. *Alis*, MUSORSTOM 9; stn CP1237; 95-305 m depth; 09°42'S, 139°04'W; 31.VIII.1997; Bouchet, Dayrat, Richer de Forges legs; MNHN-IU-2022-4538 • 5 ♂ 2.1-2.8 mm; same data as for preceding; USNM 1441353.

OTHER MATERIAL EXAMINED. — **Marquesas Archipelago** • 7 ♂ 1.9-3.0 mm, 1 ♀ 3.0 mm, 5 ovig ♀ 2.4-2.8 mm, [most dismembered]; Hiva Oa Island; N.O. *Alis*; MUSORSTOM 9; stn CP1212; 09°49.9'S, 139°02.2'W; 50-80 m depth; 29.VIII.1997; Bouchet, Dayrat, Richer de Forges legs; USNM 1445847.

ETYMOLOGY. — The specific epithet, *poupini*, is given to acknowledge the important contributions to our knowledge of tropical Pacific and Indian Ocean decapods by Dr Joseph Poupin (École navale, Brest, France).

DISTRIBUTION. — At present known only from the Marquesas Archipelago; 50-305 m.

HABITAT. — Housing unrecorded, probably empty gastropod shells; on shell sands with segments of *Halimeda* algae.

DESCRIPTION OF HOLOTYPE

Shield (Fig. 1A)

Broader than long; anterior margin between rostral lobe and lateral projections concave; anterolateral margins sloping; posterior margin roundly truncate; dorsal surface slightly convex, smooth, with few sparse tufts of moderate short setae. Rostral lobe broadly rounded, not reaching level of lateral projections. Lateral projections broadly triangular, terminating in sharp spine. Carapace lateral lobes narrow, reaching slightly beyond midlength of shield. Posterior carapace with poorly calcified median plate; cardiac sulci distinctly calcified, reaching posterior margin. Branchiostegites unarmed.

Ocular peduncles (Fig. 1A)

Short, stout, 0.6-0.7 length of shield, broadened distally, corneal diameter 0.5-0.6 of peduncular length; ocular acicles, slender, terminally acute, reaching mid-length of ocular peduncles, mesial margins each with fringe of long setae, separated basally by twice basal width of one acicle.

Antennular peduncles (Fig. 1A)

Overreaching distal corneal margins by 0.2-0.5 length of penultimate segments; dorsolateral surfaces and dorsolateral distal angles of ultimate segments each with few long setae; penultimate segment glabrous; basal segment with spine at ventromesial distal angle.

Antennal peduncles (Fig. 1A)

Overreaching distal corneal margins by nearly entire length of ultimate (fifth) segments; fifth and fourth segments each with few scattered setae; third segment with ventrodistal angle produced, with blunt terminal spine; second segment with dorsolateral distal angle produced, terminating in strong spine,

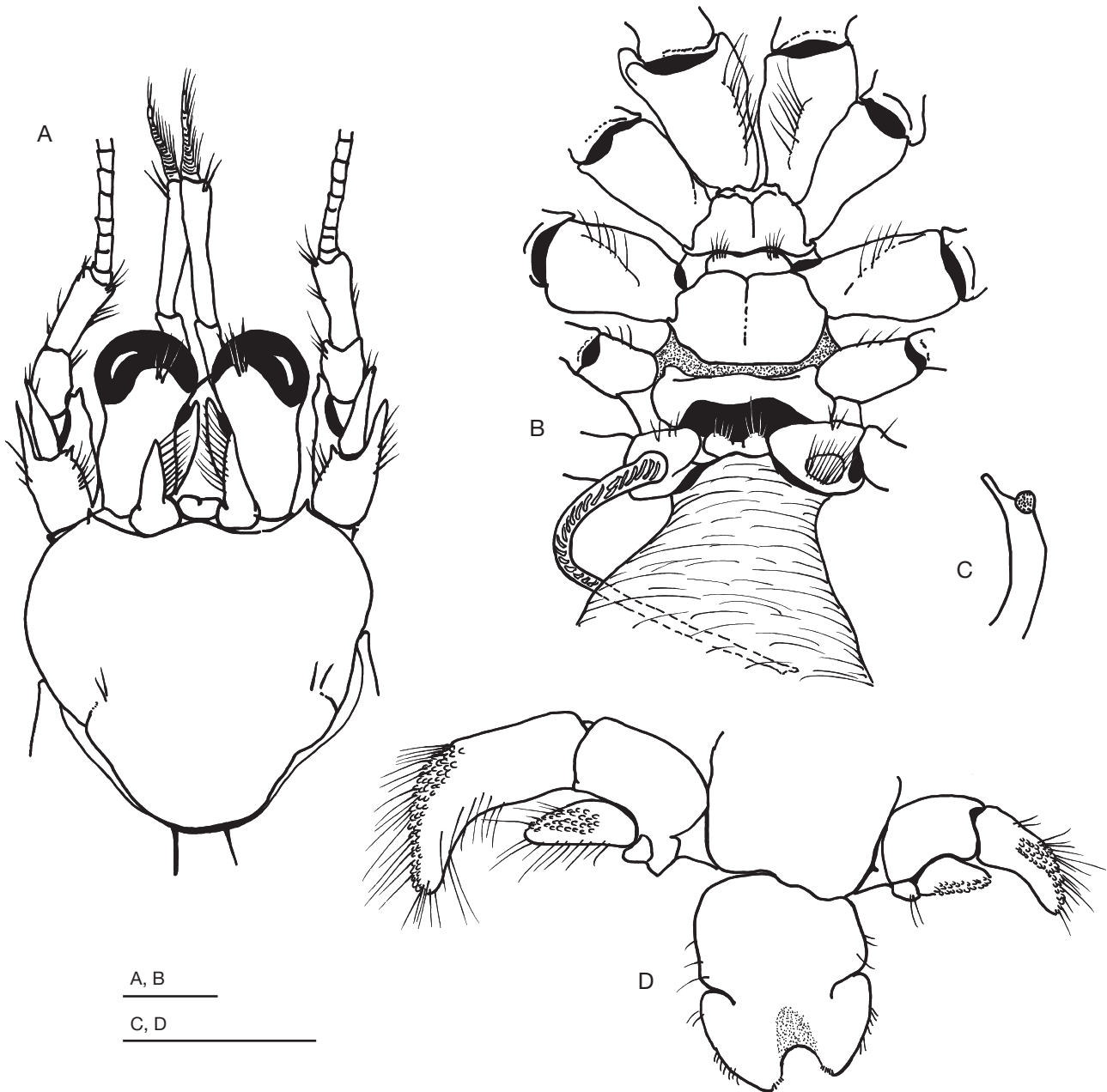


FIG. 1. — *Catapagurus poupini* n. sp., holotype male 3.0 mm, Marquesas, Hiva Oa island, MUSORSTOM 9; stn CP1212, [MNHN-IU-2022-4536](#): **A**, shield and cephalic appendages, dorsal; **B**, sternite, coxae of pereopods 1-5, and sexual tube, ventral; **C**, tip of sexual tube; **D**, uropods and telson, dorsal. Scale bars: A, B, 0.5 mm; C, D, 1.0 mm.

dorsomesial distal angle with small spine; first segment with small spine on lateral face and at ventrodistal margin. Antennal acicles strong, reaching approximately mid-length of corneas, with few distal setae; mesial and lateral faces unarmed. Antennal flagella reaching to distal end of right chela; flagella naked.

Mouthparts

Not dissected. Third maxilliped with basis bearing four spine-like teeth; ischium crista dentata with six teeth (two spine-like proximally, four reduced and rounded distally), and prominent accessory tooth; merus with small dorsodistal spine.

Chelipeds (Fig. 2)

Distinctly dissimilar, sparsely setose; left considerably slenderer than right; fingers bearing moderately long setae and denser than on rest of chelipeds, slightly crossed at tips, each terminating in small, blunt corneous claw.

Right cheliped (Fig. 2A, B) moderately stout, exceeding left cheliped in distal extension by more than length of dactyl of right. Dactyl approximately 0.6 times as long as palm, with moderately long setae; dorsal surface convex, with scattered minute granules; dorsomesial margin not delimited, rounded and minutely granular; ventral and dorsal surfaces similar;

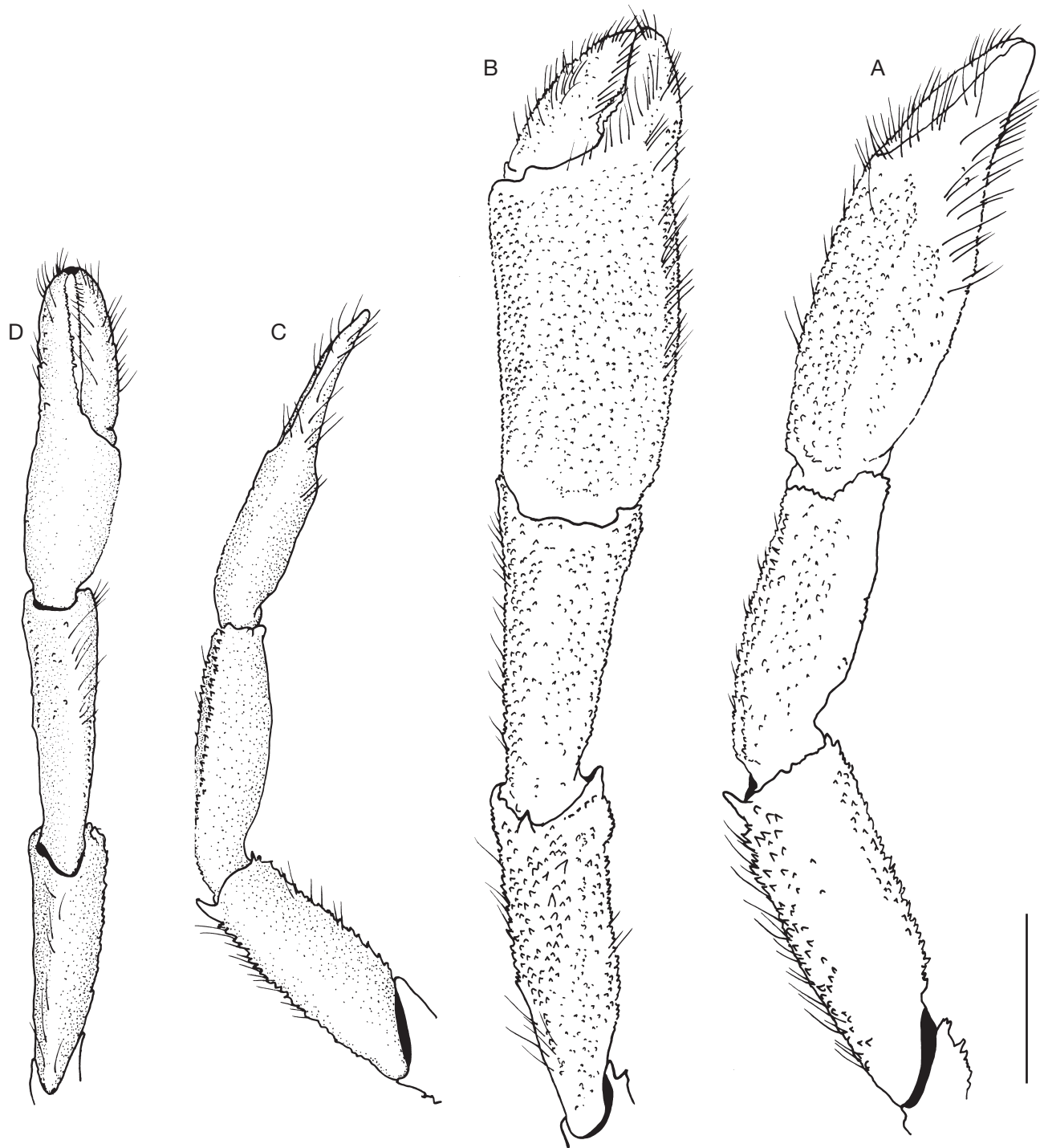


FIG. 2. — *Catapagurus poupini* n. sp., holotype male 3.0 mm, Marquesas, Hiva Oa island, MUSORSTOM 9; stn CP1212, [MNHN-IU-2022-4536](#): **A**, right cheliped, dorsal; **B**, same, lateral; **C**, left cheliped, dorsal; **D**, same, lateral. Scale bar: 1.0 mm.

cutting edge sinuous, armed with minute blunt teeth, distally forming a broadly rounded tooth, and sharp proximal tooth. Palm approximately as long as carpus; fixed finger with minutely granular surfaces (denser on lateral margin), cutting edge armed with minute blunt teeth, forming low, rounded tooth proximally; dorsal and ventral surfaces convex, dorsal surface with minute blunt to sharp granulation (stronger on

dorsolateral and dorsomesial surfaces), dorsomesial and dorsolateral margins not delimited; ventral surface weakly granular. Carpus approximately equal to length of merus; dorsal, lateral and mesial surfaces distinctly granular, dorsolateral margin faintly delimited by small blunt spines proximally and small sharp spines distally, dorsomesial margin delimited by row of small spines increasing slightly in size distally; ventral surface

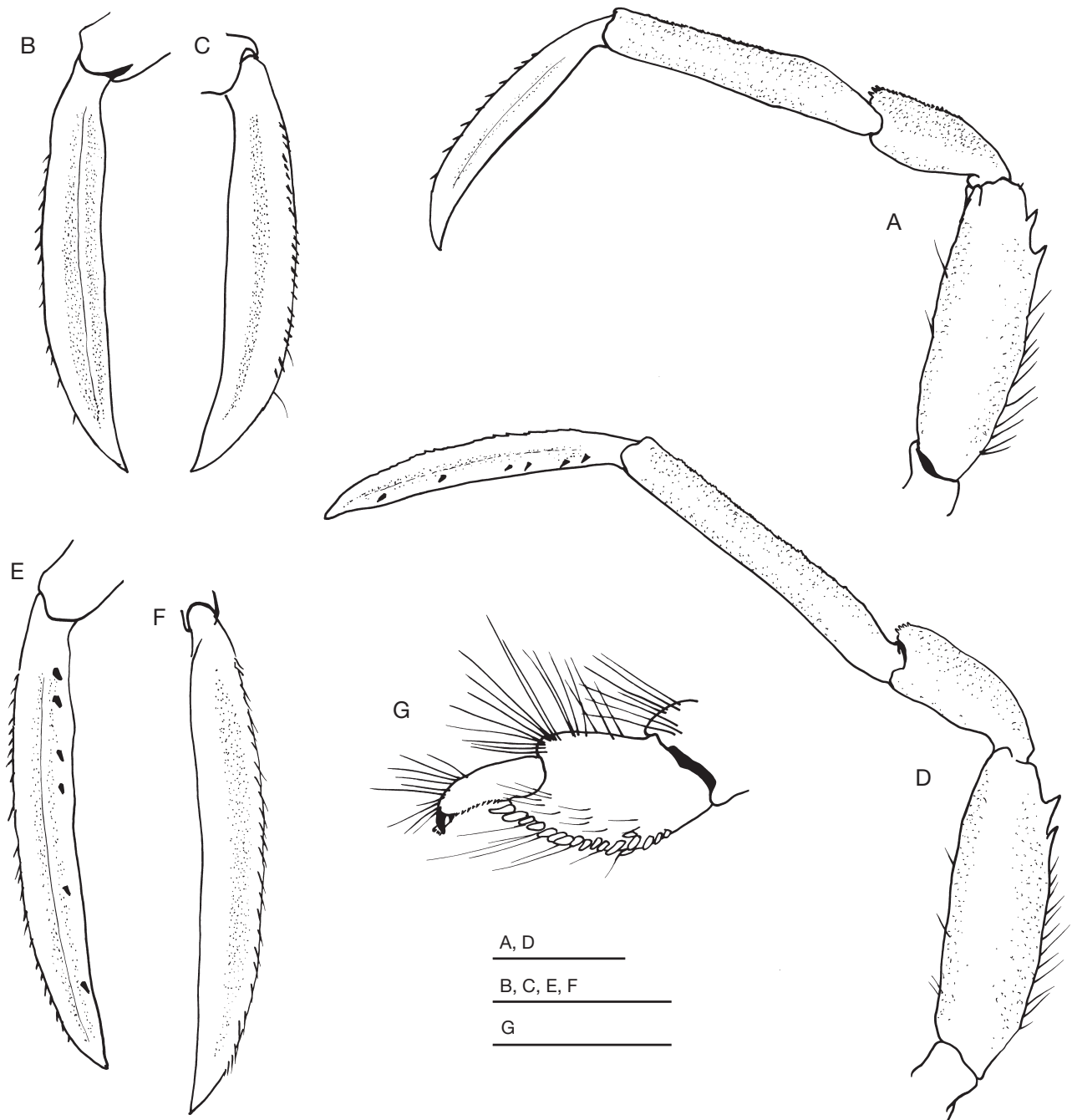


FIG. 3. — *Catapagurus poupini* n. sp., holotype male 3.0 mm, Marquesas, Hiva Oa island, MUSORSTOM 9; stn CP1212, [MNHN-IU-2022-4536](#): **A**, left pereopod 2, lateral; **B**, dactyl of same, lateral; **C**, same, mesial; **D**, left pereopod 3, lateral; **E**, dactyl of same, lateral; **F**, same, mesial; **G**, propodus and dactyl of left pereopod 4, lateral. Scale bars: A, D, 3.0 mm; B, C, E, F, 3.0 mm; G, 1.0 mm.

weakly granular. Merus triangular in cross-section; dorsal, lateral and mesial surfaces with granules or small spines stronger than on carpus, with distinct dorsodistal spine; ventrolateral and ventromesial margins well delimited by granules or small spines; ventral surface weakly granular. Ischium row of small spines on ventrolateral margin. Coxa unarmed.

Left cheliped (Fig. 2C, D). Distinctly shorter than right, reaching when fully extended approximately midlength of right

palm, sparsely setose; fingers crossing at tips when closed, each terminating in sharp, inwardly curved corneous claw. Dactyl approximately 1.2 times as long as palm; dorsal, mesial, and ventral surfaces granular and with few scattered moderately long setae; cutting edge with row of small corneous teeth. Palm approximately 0.6 times as long as carpus; dorsal surface weakly convex; surfaces all bluntly to sharply granular, with scattered setae most abundant on fixed finger; fixed finger

lateral margin with few blunt or sharp small tubercles, cutting edge with small corneous teeth. Carpus slightly longer than merus, surfaces all minutely granular; dorsomesial margin weakly defined, rounded; dorsolateral margin delimited by row of small acute spines increasing somewhat in size distally. Merus triangular in cross-section, with row of few stiff bristles on dorsal margin; surfaces minutely granular; dorsodistal unarmed. Ischium with blunt dorsal spine, ventrolateral margin with row of few small spines. Coxa unarmed.

Ambulatory legs (Fig. 3)

Pereopods 2 and 3 similar except pereopod 2 somewhat shorter. Dactyls weakly blade-shaped; in dorsal view slightly twisted inwardly, in lateral view somewhat arched ventrally; approximately 1.1 times as long as of propodi, each terminating in sharp corneous claw; dorsal margins with one row of short bristle-like setae, ventral margins unarmed; lateral faces with weak median longitudinal groove, lateral face of pereopod 2 (Fig. 3A-C) unarmed, lateral face of pereopod 3 (Fig. 3D-F) with one row of six short stout corneous spinules on ventral half; mesial faces weakly concave. Propodi with all surfaces, dorsal and ventral margins, minutely granular or with scattered setae. Carpi with all surfaces minutely granular, dorsodistal margins each with one row of few minute blunt spines. Meri with surfaces minutely granulated; dorsal margins each with moderately long setae proximally, armed distally with a row of distinct spines (rows of two spines on each meri on left side, and a row of 3-5 spines on meri of right side).

Pereopod 4 (Fig. 3G)

With preungual process at base of claw; dactyl terminating in short, curved corneous claw; propodal rasp consisting of one row of ovate scales. Sternite of third pereopods (Fig. 1B) with short anterior lobe having distal margin subdivided by shallow u-shaped sinus into two setose lobes.

Male pereopod 5, sexual tube, and pleopods (Fig. 1B,C)

With coxae (Fig. 1B) roughly symmetrical; right coxa with sexual tube, left with gonopore obscured by fringe of setae; sexual tube (Fig. 1B, C) long, slender, semitransparent, directed outward and curving over dorsal portion of pleon, terminally bilobed (one low lobe, and one slender, elongated lobe), spermatophores visible inside sexual tube; coxa of left with gonopore surrounded by dense fringe of setae. Male with three weakly developed left pleopods 3-5, pleopods 3 and 4 with rudimentary internal rami, pleopod 5 uniramous.

Females

With pleopods 2-5 (pleopods 2-4 ovigerous).

Uropods (Fig. 1D)

Asymmetrical; right protopod slightly produced posteriorly; exopods with moderately developed rasps.

Telson (Fig. 1D)

Slightly asymmetrical, longer than broad, with distinct deep lateral indentations. Posterior lobes subtriangular, separated

into two lobes by distinct, deep, U-shaped median cleft, outer margins broadly rounded with few short setae, apex of lobes with minute short bristles, inner margins unarmed.

Color

Unknown.

REMARKS

Among the 14 species of *Catapagurus* that have blade-shaped dactyls on pereopods 2 and 3, this new species is most similar to three of those species in having weakly blade-shaped dactyls. Those three species are: *C. fimbriatus* Komai & Rahayu, 2021, *C. insolitus* Komai & Osawa, 2009, and *C. tenuilamina* Komai, Miller & Malay, 2022. However, that is where the similarity ends as there are a number albeit subtle characters that set *C. poupini* n. sp. apart from those other three.

This new species differs from *Catapagurus fimbriatus* as follows: shape of shield (barely broader than long in the new species vs distinctly broader than long in *C. fimbriatus*); shape of cornea (roughly as broad as long in the new species vs distinctly broader than long in *C. fimbriatus*); teeth on cutting edge of dactyl of right chela (armed with minute blunt teeth proximally and a distal rounded tooth in the new species vs having two unequal prominent blunt teeth in *C. fimbriatus*); development of rasp on propodus of pereopod 4 (consisting of a long row of small scales in the new species vs a short row of relatively large scales in *C. fimbriatus*); presence/absence of male gonopore on left coxa (present in the new species vs absent in *C. fimbriatus*); and, telson lateral indentations and shape of posterior lobes (with distinct lateral indentations, and U-shaped median cleft separating terminally blunt posterior lobes in the new species vs wide trapezoidal median cleft separating terminally acute posterior lobes in *C. fimbriatus*).

This new species differs from *Catapagurus insolitus* as follows: the shape and armature of antennal acicles (slender and unarmed mesially in the new species vs stout and armed with distinct spines mesially in *C. insolitus*); length of pereopod 4 preungual process (short and barely exceeding dactyl claw in the new species vs long and distinctly exceeding dactyl claw in *C. insolitus*); and, telson posterior lobes (separated by deep U-shaped median cleft in the new species vs separated by a subrectangular median cleft in *C. insolitus*).

This new species differs from *Catapagurus tenuilamina* as follows: length of pereopod 4 preungual process (short and barely exceeding dactyl claw in the new species vs long and distinctly exceeding dactyl claw in *C. tenuilamina*); teeth on cutting edge of dactyl of right chela (armed with minute blunt teeth proximally and a distal rounded tooth in the new species vs one large blunt subtriangular tooth proximally and low round teeth distally in *C. tenuilamina*); armature of ventromesial margin of dactyl of pereopods 2 and 3 (with one row of about six minute corneous spinules in the new species vs with one row of about 20 minute spinules in *C. tenuilamina*); presence/absence of male gonopore on left coxa (present in the new species vs absent in *C. tenuilamina*); and terminal shape of sexual tube (bilobed with one low lobe slender, elongated vs bilobed with both lobes short and rounded in *C. tenuilamina*).

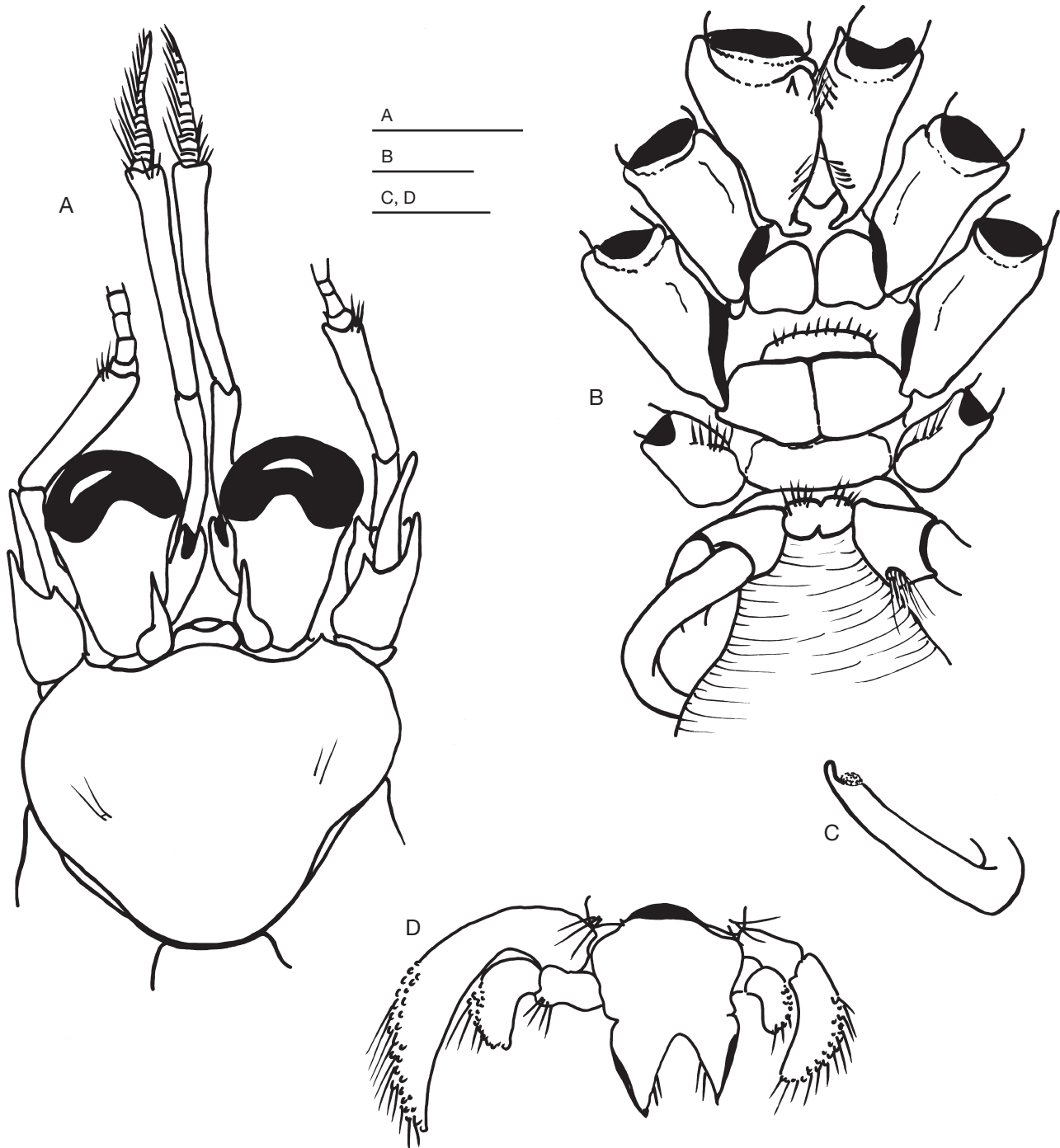


FIG. 4. — *Catapagurus thysanodactylus* n. sp., holotype male 3.0 mm, Philippines, Panglao Island, off San Isidro, PANGLAO 2004; stn T10, [MNHN-IU-2022-4539](#): **A**, shield and cephalic appendages, dorsal; **B**, sternite, coxae of pereopods 1-5, and sexual tube, ventral; **C**, tip of sexual tube; **D**, uropods and telson, dorsal. Scale bars: A, 1.0 mm; B-D, 0.5 mm.

Catapagurus thysanodactylus n. sp.
(Figs 4-6)

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TYPE MATERIAL. — **Holotype**. Philippines • ♂ 3.0 mm; Panglao Island, off San Isidro; PANGLAO 2004; stn T10; 09°33.4′N, 123°49.6′E; 117-124 m depth; 15.VI.2004; mud and fine sand; 15.VI.2004; [MNHN-IU-2022-4539](#).

Paratypes. Philippines • ♂ 1.6 mm; same station as holotype; [MNHN-IU-2022-4545](#) • 7 ♂ 1.9-2.4 mm, 6 ovig ♀ 1.8-2.3 mm; between Panglao and Pamilacan islands; PANGLAO 2004; stn T27; 09°33.4′N, 123°51.0′E; 106-137 m depth; fine sand and mud with echinoderms; 25.VI.2004; [MNHN-IU-2022-4540](#).

ETYMOLOGY. — The specific epithet is from the Greek *thysanos*, meaning fringe, in reference to the fringe of setae present on the dactyls of pereopods 2 and 3.

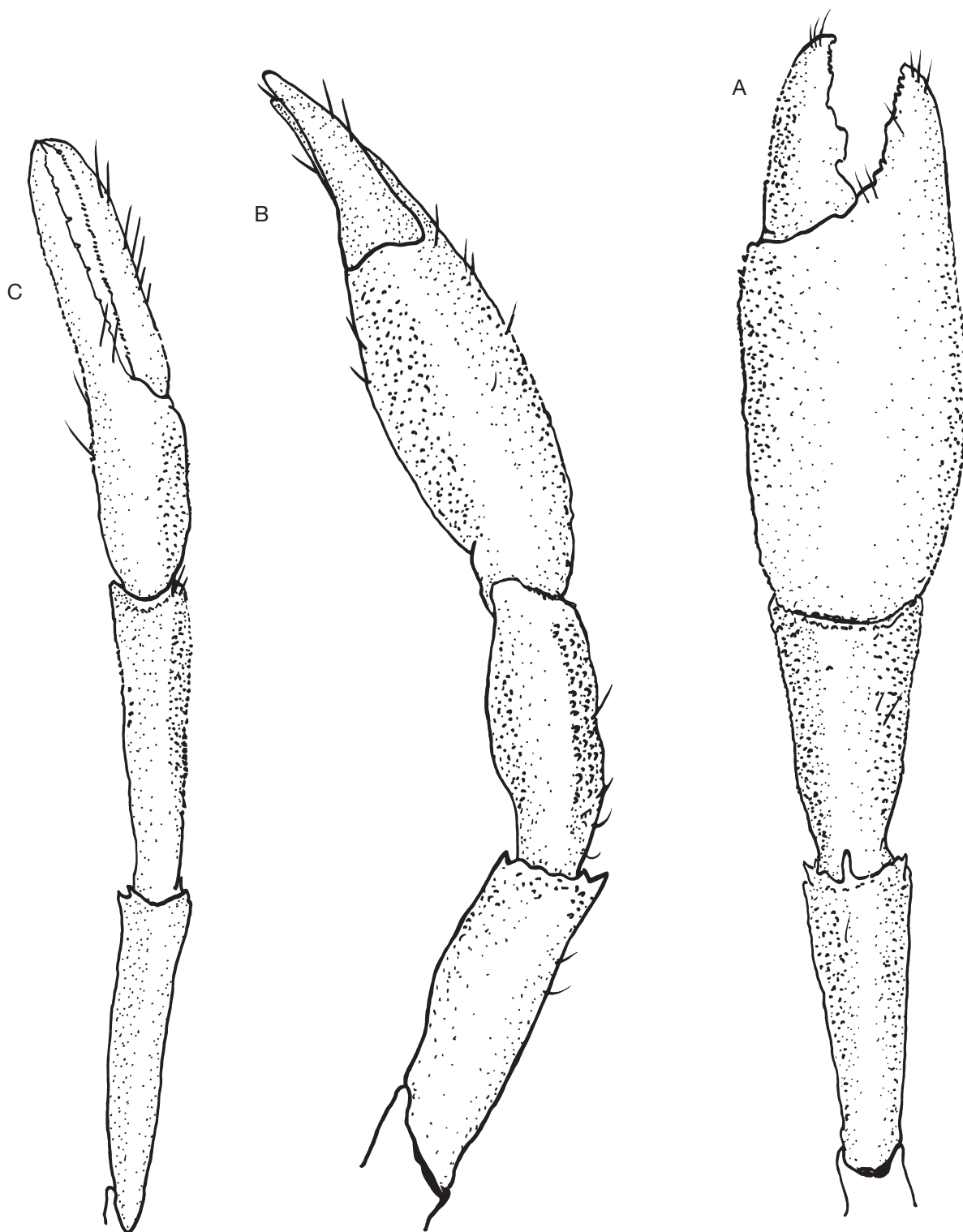


FIG. 5. — *Catapagurus thysanodactylus* n. sp., holotype male 3.0 mm, Philippines, Panglao Island, off San Isidro, PANGLAO 2004; stn T10, [MNHN-IU-2022-4539](#): **A**, right cheliped, dorsal; **B**, same, mesial; **C**, left cheliped, dorsal. Scale bar: 1.0 mm.

DISTRIBUTION. — Known so far from south of Panglao Island, central Philippines; depth: 106-137 m.

HABITAT. — Housing unrecorded, probably empty gastropod shells; on fine sand and mud, with echinoderms.

DESCRIPTION OF HOLOTYPE

Shield (Fig. 4A)

Slightly broader than long; anterior margin between rostral lobe and lateral projections weakly concave; anterolateral margins sloping; posterior margin roundly truncate; dorsal surface

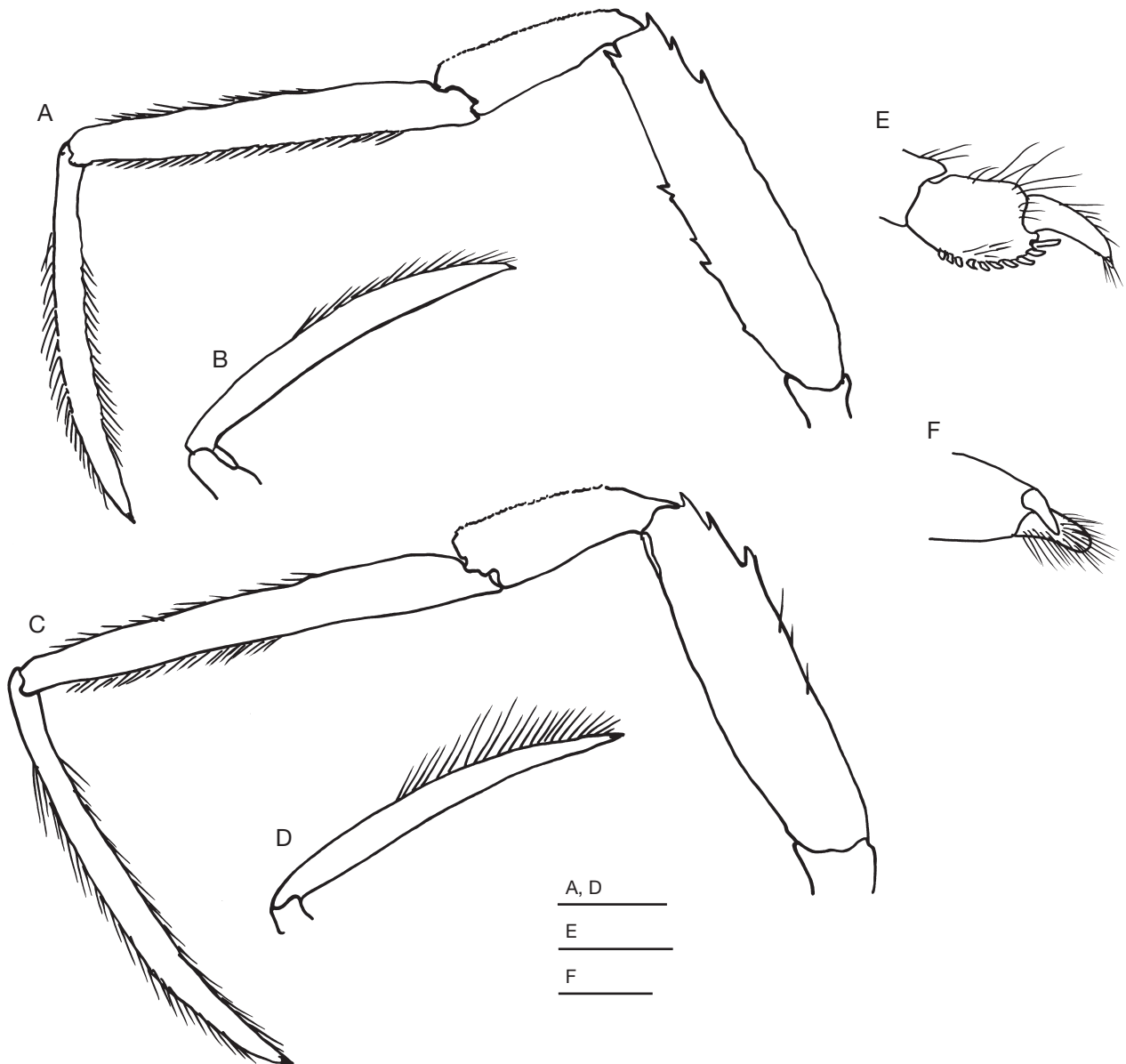


FIG. 6. — *Catapagurus thysanodactylus* n. sp., holotype male 3.0 mm, Philippines, Panglao Island, off San Isidro, PANGLAO 2004; stn T10, [MNHN-IU-2022-4539](#): **A**, left pereopod 2, lateral; **B**, dactyl of same, mesial; **C**, left pereopod 3, lateral; **D**, dactyl of same, mesial; **E**, propodus and dactyl of right pereopod 4, lateral; **F**, tip of dactyl of same with preungual process, lateral. Scale bars: A–D, 1.0 mm; E, 0.5 mm; F, 1.0 mm.

slightly convex, smooth, with sparse tufts of moderate short setae. Rostral lobe broadly rounded, reaching about level of lateral projections. Lateral projections broadly triangular, terminating in small, sharp spine. Carapace lateral lobes narrow, reaching slightly beyond midlength of shield. Posterior carapace with poorly calcified median plate; cardiac sulci distinctly calcified, reaching posterior margin. Branchiostegites unarmed.

Ocular peduncles (Fig. 4A)

Short, stout, 0.6 to 0.7 length of shield, broadened distally; cornea dilated, diameter approximately 0.7 of peduncular length; ocular acicles, slender, terminally acute, reaching approximately mid-length of ocular peduncles, naked, separated basally by twice basal width of acicle.

Antennular peduncles (Fig. 4A)

Overreaching distal corneal margins by approximately half lengths of penultimate segments; dorsolateral surfaces and dorsolateral distal angles of ultimate segments naked or with few short setae; penultimate segment glabrous; basal segment with spine at ventromesial distal angle.

Antennal peduncles (Fig. 4A)

Overreaching distal corneal margins by nearly full lengths of ultimate (fifth) segments; fifth and fourth segments naked or scattered short setae; third segment with ventrodistal angle produced, with blunt terminal spine; second segment with dorsolateral distal angle produced, terminating in strong spine, dorsomesial distal angle with small spine; first segment unarmed.

Antennal acicles strong, weakly curved outward, reaching or slightly overreaching distal margins of corneas, with few distal setae; mesial and lateral faces unarmed. Antennal flagella reaching distal end of right chela; flagella naked or with scattered short setae each less than one flagellar article in length.

Mouthparts

Not dissected. Third maxilliped with basis bearing one spine-like tooth; ischium crista dentata with 6-8 teeth slightly increasing in size distally, and prominent accessory tooth; merus with blunt dorsodistal angle.

Chelipeds (Fig. 5)

Distinctly dissimilar, sparsely setose; left considerably slenderer than right; fingers with scattered setae, each terminating in small, blunt corneous claw crossed when fingers closed.

Right cheliped (Fig. 5A, B) elongate, exceeding left cheliped in distal extension by approximately half length of right dactyl. Dactyl approximately 0.6 length of palm; dorsal surface convex, mostly with scattered minute granules except for denser granulation on dorsomesial surface; mesial margin not delimited, rounded and minutely granular; ventral surface similar to dorsal; cutting edge armed with two larger, unequal calcareous teeth proximally, otherwise with small, closely-set, irregular calcareous teeth distally. Palm approximately 1.3 times as long as carpus; fixed finger with inconspicuous granular surfaces, cutting edge armed with one small calcareous tooth medially, and serrated small teeth distally; dorsal and ventral surfaces convex, glabrous, dorsomesial and dorsolateral margins not delimited; ventral surface weakly granular. Carpus slightly shorter than merus; dorsal, lateral and mesial surfaces minutely granular, dorsolateral and dorsomesial margins faintly delimited by minute granules; ventral surface weakly granular. Merus triangular in cross-section; dorsal, lateral and mesial surfaces with minute granules, with sharp dorsodistal spine; lateral and mesial surfaces smooth or at most with scattered minute granules; ventral surface granular. Ischium with one row of small spines on ventrolateral margin. Coxa unarmed.

Left cheliped (Fig. 5C) approximately same length as right when fully extended, sparsely setose; fingers crossing at tips when closed, each terminating in sharp, inwardly curved corneous claw. Dactyl approximately 1.5 times as long as palm; dorsal, mesial, and ventral surfaces nearly smooth or finely granular, with few scattered setae; cutting edge with one row of minute, closely set corneous teeth. Palm approximately 0.6 times as long as carpus; dorsal surface weakly convex; surfaces all finely granular (granules more conspicuous on dorsomesial surface), with scattered setae; fixed finger with surfaces minutely granular, cutting edge with more or less evenly and well-spaced minute calcareous teeth. Carpus slightly shorter than merus, surfaces minutely granular (granules more conspicuous on dorsomesial surface); dorsomesial margin weakly defined, rounded; dorsolateral margin weakly delimited. Merus triangular in cross-section, surfaces minutely granular; dorsodistal angle unarmed. Ischium unarmed. Coxa unarmed.

Ambulatory legs (Fig. 6A-D)

Pereopods 2 and 3 similar except pereopod 2 somewhat shorter. Dactyls slender, not blade-shaped; in lateral view slightly curving ventrally on distal one-third; subequal in length to propodi, each terminating in sharp corneous claw; dorsal and ventral margins each with fringe of short setae, ventromesial margins unarmed; lateral and mesial faces smooth. Propodi with surfaces smooth, with one row of short setae on dorsal and ventral margins. Carpi surfaces minutely granular, denser on dorsal surfaces; with blunt dorsodistal angle. Meri with surfaces smooth; dorsal margin with three conspicuous spines on distal third, sparsely setose; ventral margins with two or three minute spines medially (pereopod 2) or unarmed (pereopod 3).

Pereopod 4 (Fig. 6E, F)

With distinctly developed preungual process at base of claw (Fig. 6F); dactyl terminating in short, curved corneous claw; propodal rasp consisting of one row of ovate scales. Sternite of third pereopods (Fig. 4B) with anterior lobe broadly subovate, setose distally.

Male pereopod 5, sexual tube, and pleopods (Fig. 4B, C)

Male pereopod 5 with coxae (Fig. 4B) roughly symmetrical; right coxa with sexual tube, left with gonopore obscured by fringe of setae; sexual tube (Fig. 4B, C) long, slender, semi-transparent, directed outward and curving over dorsal portion of pleon, terminating in curved finger-like tip. Male with three weakly developed left pleopods 3-5, pleopods 3 and 4 with rudimentary internal rami, pleopod 5 uniramous.

Females

With pleopods 2-5 (pleopods 2-4 ovigerous).

Uropods (Fig. 4D)

Asymmetrical; exopods with moderately developed rasps.

Telson (Fig. 4D)

Longer than broad, with distinct deep lateral indentations; posterior lobes acutely subtriangular, separated into two lobes by distinct, deep V-shaped median cleft, outer margins nearly straight; posterior lobes each terminating in sharp spine, inner margins with row of two or three bristle-like setae.

Color

Unknown.

REMARKS

Among the species of *Catapagurus* that do not have blade-like dactyls on the P2 and P3, this new species is morphological more similar to *C. danida* McLaughlin, 2002. In this new species: the anterolateral projections each has a weak spine, whereas in *C. danida* the spine is larger; the cornea are dilated, whereas those of *C. danida* are at most slightly dilated; the dorsal surfaces of propodus and palm of the chelipeds are virtually smooth, whereas there are distinct spinules in *C. danida*; the sinus separating the posterior lobes of the telson is V-shaped, whereas it is U-shaped in *C. danida*.

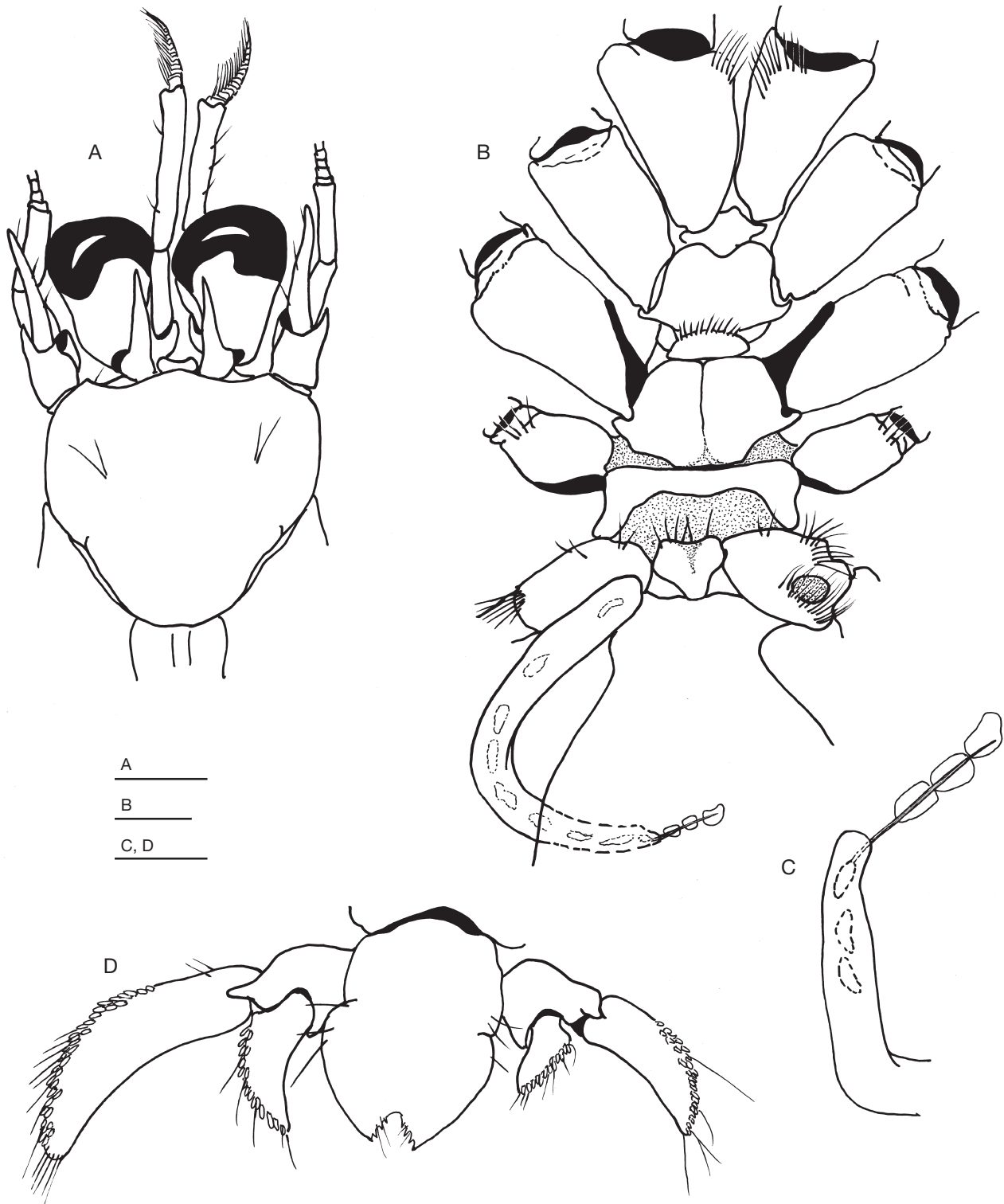


FIG. 7. — *Catapagurus franklinae* McLaughlin, 2004, male 2.7 mm, Fiji Islands, BORDAU 1, stn CP1460, [MNHN-IU-2022-4541](#): **A**, shield and cephalic appendages, dorsal; **B**, sternite, coxae of pereopods 1-5, and sexual tube, ventral; **C**, tip of sexual tube showing spermatophores; **D**, uropods and telson, dorsal. Scale bars: A, 1.0 mm; B-D, 0.5 mm.

Catapagurus franklinae McLaughlin, 2004
(Figs 7-9)

Catapagurus franklinae McLaughlin, 2004: 3, figs 1, 2, type locality: off Tully, Queensland, Australia. — McLaughlin *et al.* 2010: 28.

MATERIAL EXAMINED. — **Fiji Islands** • ♂ 2.7 mm; BORDAU 1; stn CP1460; [18°47.06'S, 178°47.29'W](#); 750-767 m depth; 6.III.1999; [MNHN-IU-2022-4541](#) • 1 ovig ♀ 2.4 mm; same stn data as for preceding; [MNHN-IU-2022-4542](#) • 1 ovig ♀ 2.1 mm; stn DW1485; [19°03'S, 178°30'W](#); 700-707 m depth; 10.III.1999; [MNHN-IU-2022-4543](#).

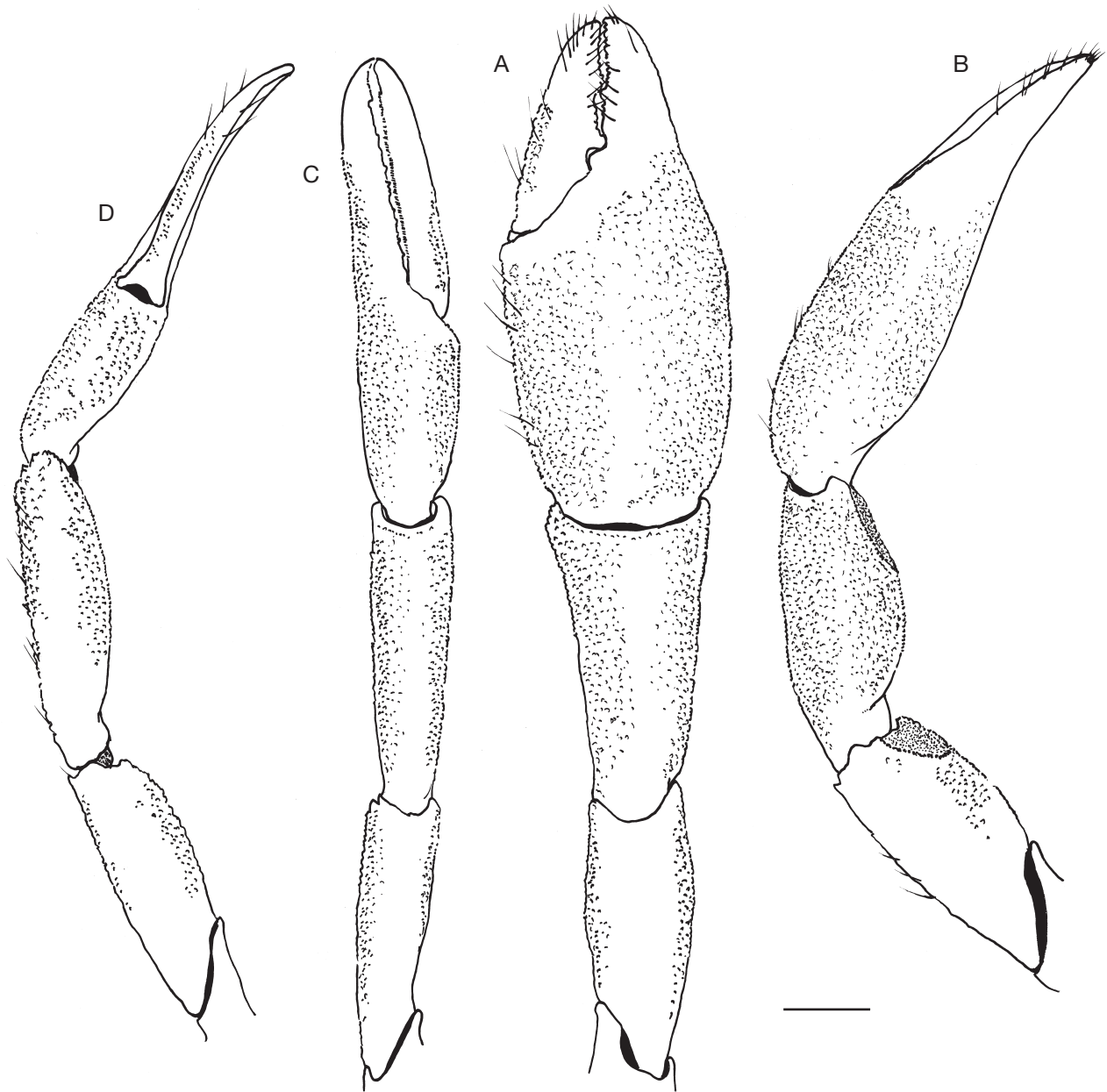


FIG. 8. — *Catapagurus franklinae* McLaughlin, 2004, male 2.7 mm, Fiji Islands, BORDAU 1, stn CP1460, [MNHN-IU-2022-4541](#): **A**, right cheliped, dorsal; **B**, same, lateral; **C**, left cheliped, dorsal; **D**, same, mesial. Scale bar: 1.0 mm.

Solomon Islands • 2 ♂ 1.9 mm, 2.2 mm, 7 ♀ 1.9–3.1 mm, 4 ovig ♀ 1.9–2.4 mm; SALOMON 2, N.O. *Alis*; stn CP2228; [06°35'S, 156°11'E](#); 609–625 m depth; 28.X.2004; Bouchet, Warén & Samadi-IRD legs; [MNHN-IU-2025-2548](#) • 1 ♀ 2.8 mm; N.O. *Alis*, SALOMON 2; stn CP2244; [07°45'S, 156°27'E](#); 554–586 m depth; 1.XI.2004; Bouchet, Warén & Samadi-IRD legs; USNM 1445863 • 2 ♂ 2.6, 3.4 mm, 3 ovig ♀ 2.2–3.2 mm; same data as for preceding; USNM 1445864 • 1 ♂ 3.1 mm, 1 ♀ 2.2 mm, 1 ovig ♀ 2.1 mm; N.O. *Alis*, SALOMON 2; stn CP2245; [07°43'S, 156°26'E](#); 582–609 m depth; 1.XI.2004; Bouchet, Warén & Samadi-IRD legs; [MNHN-IU-2025-2549](#).
Vanuatu • 2 ♂ 2.7, 3.5 mm, 1 ♀ 3.1 mm SE Malekula, N.O. *Alis*, BOA1; stn CP2465; [16°43'S, 167°59'E](#); 770–799 m depth; 13.IX.2005; Samadi-IRD legs; USNM 1441475 • 1 ovig ♀ 3.0 mm, SE Malekula; N.O. “*Alis*”, BOA1; stn CP2466; [16°44'S, 167°59'E](#); 786–800 m depth; 13.IX.2005; Samadi-IRD legs; [MNHN-IU-2025-2550](#).

New Hebrides Arc • 1 ♀ 2.1 mm; Hunter and Matthew Islands; VOLSMAR; stn DW09; [22°23'S, 171°42'E](#); 275–300 m depth; 1.VI.1989; USNM1441480 • 1 ovig ♀ 2.1 mm; Mount Vauban; N.O. “*Alis*”, VOLSMAR; stn DW16; [22°25'S, 171°41'E](#); 420–500 m depth; 3.VI.1989; B. Richer de Forges-IRD legs; [MNHN-IU-2025-2551](#).

DISTRIBUTION. — Coral and Tasman Seas, and New Caledonia (McLaughlin 2004) to Solomon and Fiji Islands; depth 285–969 m.

HABITAT. — Has been found living inside calcareous worm tubes, or small shells with or without anemone growing on them (McLaughlin 2004).

Color
Unknown.

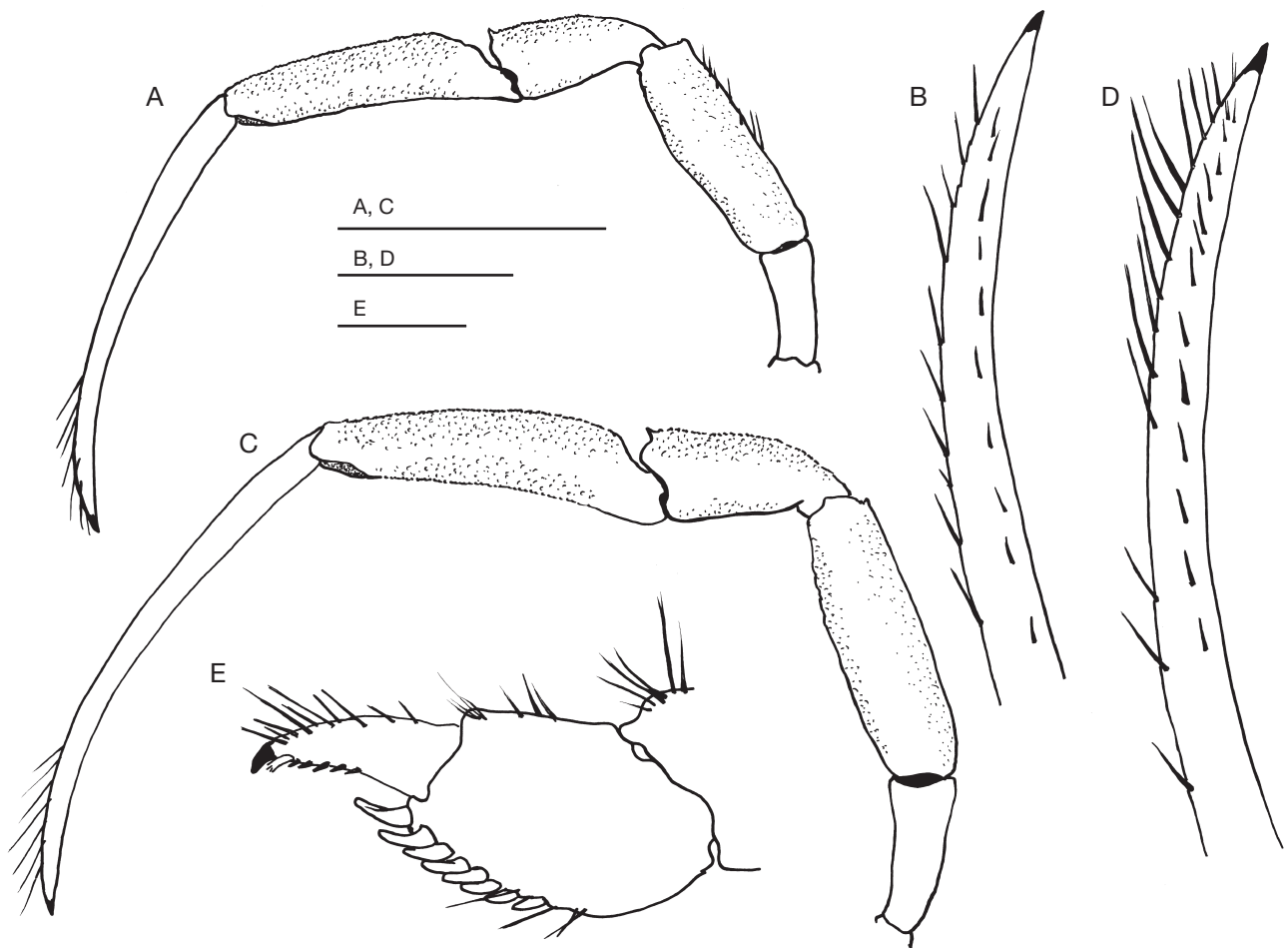


FIG. 9. — *Catapagurus franklinae* McLaughlin, 2004, male 2.7 mm, Fiji Islands, BORDAU 1, stn CP1460, [MNHN-IU-2022-4541](#): **A**, left pereopod 2, lateral; **B**, distal half of dactyl of same, mesial; **C**, left pereopod 3, lateral; **D**, distal half of dactyl of same, mesial; **E**, propodus and dactyl of left pereopod 4, lateral. Scale bars: A, C, 2.0 mm; B, D, 0.5 mm; E, 0.2 mm.

REMARKS

Previously known from the Coral and Tasman Seas and New Caledonia (McLaughlin 2004), the range is herein extended to approximately 900 km eastward to the Fiji Islands, including the Solomon Islands and Vanuatu.

The morphological variations documented in this species by McLaughlin (2004) have all been observed in the material herein reported, which are mostly related to size or growth of the specimens. Most evident in the material examined during this study is the influence of size and growth of the specimens on the dorsal armature of the meri of the second and third pereopods, which can diminish in sharpness and strength with increasing size. In contrast, the sexual tubes of specimen tend to be longer in smaller specimens where the tube can extend entirely over the dorsal surface of the pleon, whereas in larger males the tube usually partially curves over the pleon. The shape and armature of the telson can also vary significantly, with the posterior lobes separated by a narrow V-shaped cleft, or in some specimens by a broad U-shaped cleft.

Catapagurus tanimbarensis McLaughlin, 1997

Catapagurus tanimbarensis McLaughlin, 1997: 498, figs 18a-m, 39c-d. — McLaughlin *et al.* 2010: 28.

Hemipagurus tanimbarensis – Asakura 2001: 824, tbl 1., 884, fig. 37F, H.

NEW MATERIAL. — **Solomon Islands** • 1 ovig ♀ 1.9 mm; West Bay; SOLOMON 2; stn DW2169; [09°01'S](#), [159°06'E](#); 100–200 m depth; 21.X.2004; [MNHN-IU-2022-4544](#).

DISTRIBUTION. — Kai and Tanimbar Islands in eastern Indonesia to the Solomon Islands in the southwestern Pacific; depth: 100 to 301 m.

HABITAT. — Has been found living in shell of *Natica* sp. (McLaughlin 1997).

COLOR
Unknown.

REMARKS

This species was previously known only from the Kai and Tanimbar Islands, Indonesia (McLaughlin 1997). The current record extends the range of this species approximately 3200 km eastwards to the Solomon Islands.

Acknowledgements

The material of *Catapagurus* used here was being worked on by Dr Patsy A. McLaughlin shortly before her death on April of 2011. The specimens were found by the author in her personal laboratory and were part of a major review of *Catapagurus* which she regrettably never lived to finish. She had recognized several new species while working on the material, much of it collected during French expeditions led by the MNHN (VOLSMAR (<https://doi.org/10.17600/89005011>); SALOMON 2 (<https://doi.org/10.17600/4100090>); BOA 1 (<https://doi.org/10.17600/5100060>); BORDAU 1 (<https://doi.org/10.17600/99100020>); MUSORSTOM 9 (<https://doi.org/10.17600/97100020>) to the Western Pacific, all of which has been returned to that Museum. The PANGLAO Marine Biodiversity Project including the cruise PANGLAO 2024, was a joint project of MNHN, Paris (PI: Philippe Bouchet) and University of San Carlos, Cebu City (PI: Danilo Largo), funded by grants from the Total Foundation, the French Ministry of Foreign Affairs, and the Asean Regional Center for Biodiversity Conservation (ARCB), and operating under a permit from the Philippine Bureau of Fisheries and Aquatic Resources (BFAR). Unfortunately, it was difficult to reconcile the numerous specimens and labels with her manuscript notes and observations left scattered in her laboratory, except for the specimens of the two new species described herein. It seemed appropriate to maintain the specific epithets she had chosen for these two new species, even though she never wrote descriptions or prepared illustrations. The author did not want to leave the work unfinished, and thanks her posthumously. The staff of the MNHN is thanked for the always cordial help in allowing the author to keep the material until the descriptions could be prepared and published, and for supplying expedition information. Rose Gullledge prepared the digital plates. The comments and suggestions by the reviewers are most appreciated and helped improve this manuscript.

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