

A NEW SPECIES OF *EUCALLIAX* MANNING & FELDER, 1991 (DECAPODA: CALLIANASSIDAE) FROM THE PHILIPPINES

Peter C. Dworschak

Dritte Zoologische Abteilung, Naturhistorisches Museum, Burgring 7, A 1010 Wien, Austria

Email: Peter.Dworschak@nhm-wien.ac.at

ABSTRACT. – *Eucalliax panglaoensis*, new species, is described from intertidal and shallow sublittoral sediments at Panglao, Bohol, Philippines. *Eucalliax panglaoensis*, new species, differs from all other congeners by having a transverse carina with a row of cuspidate setae on the telson and a notched uropodal endopod. The new species is further characterised by a variable shape of the rostrum, subequal chelipeds with the carpus of both bearing distal spines, variable spination on the mesial margin of the carpus, an operculiform third maxilliped without an exopod and a median spine on the superior border of the merus in several specimens. In the female, first two pleopods show a mesial extension on the basipod in adult individuals.

KEY WORDS. – *Eucalliax*, new species, Panglao, Philippines, burrowing shrimp.

INTRODUCTION

The international Panglao Marine Biodiversity Project in May-July 2004 consisted in an extensive sampling of molluscs and decapod crustaceans around the island of Panglao, southwest of Bohol, Philippines. The special task of the author during this survey was the collection of thalassinidean shrimp and their associated decapod and mollusc fauna with the aid of a yabby pump.

This sampling of thalassinideans revealed numerous new records and several undescribed species, one of which is here described.

MATERIAL AND METHODS

Specimens from intertidal sediments were extracted with a stainless steel yabby pump (Emro, Caloundra, QLD); for subtidal sediments an improvised PVC pump of similar design was employed while using SCUBA. Shrimps were chilled on ice before they were fixed in 70% or 96% ethanol. Animals were partly coloured with Chlorazole Black E (Sigma Aldrich, CAS-Nr. 1937-37-7), measured with a calibrated eyepiece, examined and illustrated with the aid of a stereo microscope (Nikon SMZ-10A) equipped with a drawing tube. A compound microscope (Leitz Diaplan) was used to investigate mouthparts and pleopods.

The types have been deposited in the National Museum of the Philippines, Manila (NMCR), the Zoological Reference Collection at the National University of Singapore (ZRC),

the Muséum National d'Histoire Naturelle, Paris (MNHN) and the Naturhistorisches Museum Wien, Austria (NHMW). Size is expressed as total length (tl in mm) from the tip of the rostrum to the end of the telson and as carapace length (cl in mm) from the tip of the rostrum to the posterior median edge of the carapace. Other abbreviations used include: A1, first antenna (antennule); A2, second antenna; Mxp2, second maxilliped; Mxp3, third maxilliped; coll., collector.

TAXONOMY

Eucalliax panglaoensis, new species (Figs. 1-7)

Material examined. – Holotype - male (tl 46, cl 10.4, dissected) (NMCR 27000), Philippines, Bohol, Panglao Is., Alona Beach (M1: 09°32.9'N 123°46.6'E), intertidal, coll. P. Dworschak, 5 Jun.2004 (PD25).

Allotype – female (tl 40, cl 9.3) (NHMW 20922), same data as holotype (PD23).

Paratypes – 1 male (tl 20, cl 4.4) (ZRC 2006.0104), same location as holotype, coll. J. Lai, 16 Jun.2004 (PD126); 1 female (tl 31, cl 7.9, major cheliped missing) (MNHN Th-1502), same location as holotype, coll. P. K. L. Ng, 3 Jul.2004; 1 female (tl 34, cl 8.1, major cheliped missing) (ZRC 2006.0105), same data as MNHN Th-1502; 1 female (tl 36, cl 8.4) (NHMW 20923), same data as MNHN Th-1502; 1 female (tl 34, cl 8.3, major cheliped missing) (ZRC 2006.0106), same data as MNHN Th-1502; 1 male (tl 30, cl 7.7) (NHMW 20924), same data as MNHN Th-1502; 1 male (tl 16, cl 3.9) (NHMW 20925), Philippines, Bohol, Panglao Is., Doljo Point (M5[M8]: 09°35.5'N 123°43.3'E), mixed intertidal platform, coll.

P. Dworschak, 3 Jun.2004 (PD14); 1 female (tl 16, cl 3.7) (NHMW 20926), Philippines, Bohol, Panglao Is., Sungcolan Bay (M11: 09°38.3'N 123°49.6'E), intertidal sand, coll. P. Dworschak, 7 Jun.2004 (PD35); 1 female (tl 30, cl 7.1, minor cheliped missing) (MNHN Th-1503), same location as NHMW 20925, coll. P. Dworschak, 8 Jun.2004 (PD48); 1 male (tl 19 cl 4.3) (MNHN Th-1504), same data as MNHN Th-1503 (PD49); 1 exuvia (cl 8.8) (MNHN Th-1505), Philippines, Bohol, Panglao Is., Sungcolan Bay (R26: 09°38.4'N 123°49.1'E), sand 4 m, coll. P. Dworschak, 9 Jun.2004 (PD66); 1 male (tl 19, cl 5.1) (ZRC 2006.0108), Philippines, Bohol, Panglao Is., outside Lagoon near Pontod Islet (R29: 09°33.5'N 123°42.6'E), sand 3-4 m, coll. P. Dworschak, 7 Jun.2004 (PD46).

Non-type material – 2 detached chelipeds (ZRC 2006.0107), same data as MNHN Th-1503 (PD49).

Diagnosis. – Carapace lacking dorsal oval. Antennal peduncles overreaching antennular peduncles. Chelipeds unequal in size and shape in large males, almost equal in size and similar in shape in females and small males, with acute teeth at distal corners of carpus; merus with distal upper spine. Telson 1.6 times as broad as long, with transverse carina beset with cuspidate setae, uropodal endopod with concave posterior border.

Description of holotype. – Dorsally, carapace slightly shorter than abdominal somites 1 and 2 combined (Fig. 1a, b). Frontal margin of carapace with narrow triangular rostrum; rostrum acute terminally, flanked by deeply excavated shoulders forming anteriorly produced prominences lateral to margins of eyestalks; rostrum extending to 1/2 visible length of eyestalks in dorsal view, ventrally bearing few setae. Lateral projections of carapace with setae dorsally. Carapace lacking distinct dorsal oval, cardiac prominence, and dorsal carina. Cervical groove distinct, disjunct near linea thalassinica. Linea thalassinica strong, parallel to midline of carapace. Weak hepatic boss in anterior 1/3 of carapace ventral to linea thalassinica. Cardiac suture in middle posterior half of carapace well defined, incomplete across midline of carapace, extending anteroventrally to ventral margin of carapace. Subantennular region of epistome bearing dense tuft of long setae.

Eyestalks (Figs. 1c, d) dorsally flattened, slightly curved ventrally, length 2.7 times width, in dorsal view reaching beyond basal antennal article; mesial surfaces broadly triangular, flattened so eyestalks abutt closely at midline in proximal 3/4; lateral margin parallel to midline in proximal half, distal margin tapering dorsolaterally to outward directing tip; pigmented region distinct in distal 1/3 of dorsolateral surface, few setae on lateral surface posterior to cornea.

Antennular peduncle shorter than antennal peduncle (Figs. 1b, e, f); basal article laterally and ventrally inflated; second article 1.3 times longer than basal article with tuft of setae dorsally near distal end, third article about 1/2 length of second; second and third articles with ventrolateral row of long, ventrally directed setae, continued onto ventral ramus of flagellum; rami of flagellum about equal length, near 5 times length of third article of peduncle; dorsal ramus with sparse short setae, subterminal articles of dorsal ramus heavier

than those of ventral ramus, bearing thick line of ventral aesthetascs (Fig. 1e).

Antennal peduncle 1.4 times length of antennular peduncle (Fig. 1f); basal article with dorsolateral carina bearing regular line of fine setae above laterally produced excretory pore; second article with deep, diagonal ventrolateral furrow, distally with field of long setae below ventrolateral suture and another on dorsolateral surface, acute, articulated dorsal scale at joint with third article; third article elongate, longer than fourth or combined length of first two, fourth article narrower than third; flagellum sparsely setose, extending posteriorly to middle of pleonite 1.

Mandible (Fig. 2a, b) with large, terminally setose, 3-segmented palp, third article of palp terminally rounded; incisor process with well defined teeth on cutting margin, mesial surface with lip giving rise to molar process proximal to incisor teeth; paragnath uncalcified, set against proximal surface of molar process.

First maxilla (Fig. 2c) with endopodal palp long, narrow, terminal article deflected proximally at articulation; proximal endite densely setose on straight margin, terminally with dense field of setae; distal endite elongate, terminally truncate and armed with stiff bristles.

Second maxilla (Fig. 2d) with endopod narrowed at distal end, terminus directed mesially, first and second endites each longitudinally subdivided, exopod forming large, broad, scaphognathite.

First maxilliped (Fig. 2e) with endopod reduced, minute; proximal endite triangular; distal endite elongate, lateral surface and all margins heavily setose, mesial surface concave; exopod triangular, no transverse suture; distal part broad, with long marginal setation at its mesial end, proximal part with field of mesially directed setae near mesial end; epipod large, broad, subdivided by weak transverse suture, anterior end tapered, angular.

Second maxilliped (Fig. 2f) with long endopod; endopodal merus straight, slightly heavier in proximal half than in distal, inferior margin with dense fringe of long, close-set setae; carpus short; propodus heavy, weakly arcuate, length 2 times width, less than 1/2 length of merus; dactylus short, about 1/3 length of propodus, superior margin arcuate, tip with dense serrate setae; exopod as long as endopodal merus and carpus combined, fringed marginally by long setae, subdivided by transverse suture at 1/3 length; epipod small, uniramous, arthrobranch (not shown) greatly reduced.

Third maxilliped (Fig. 2g, h) without exopod; endopod with long dense setation on mesial margin; endopodal ischium subtriangular, slightly longer than broad, proximomesial lip rounded, mesial surface with medial longitudinally oriented elevation bearing well-defined curved row of 10 sharp teeth; merus subquadrate, broader than long; carpus strongly flexed in proximal third with setose lobe on inferior margin; propodus large, subquadrate, as broad as long; dactylus broad

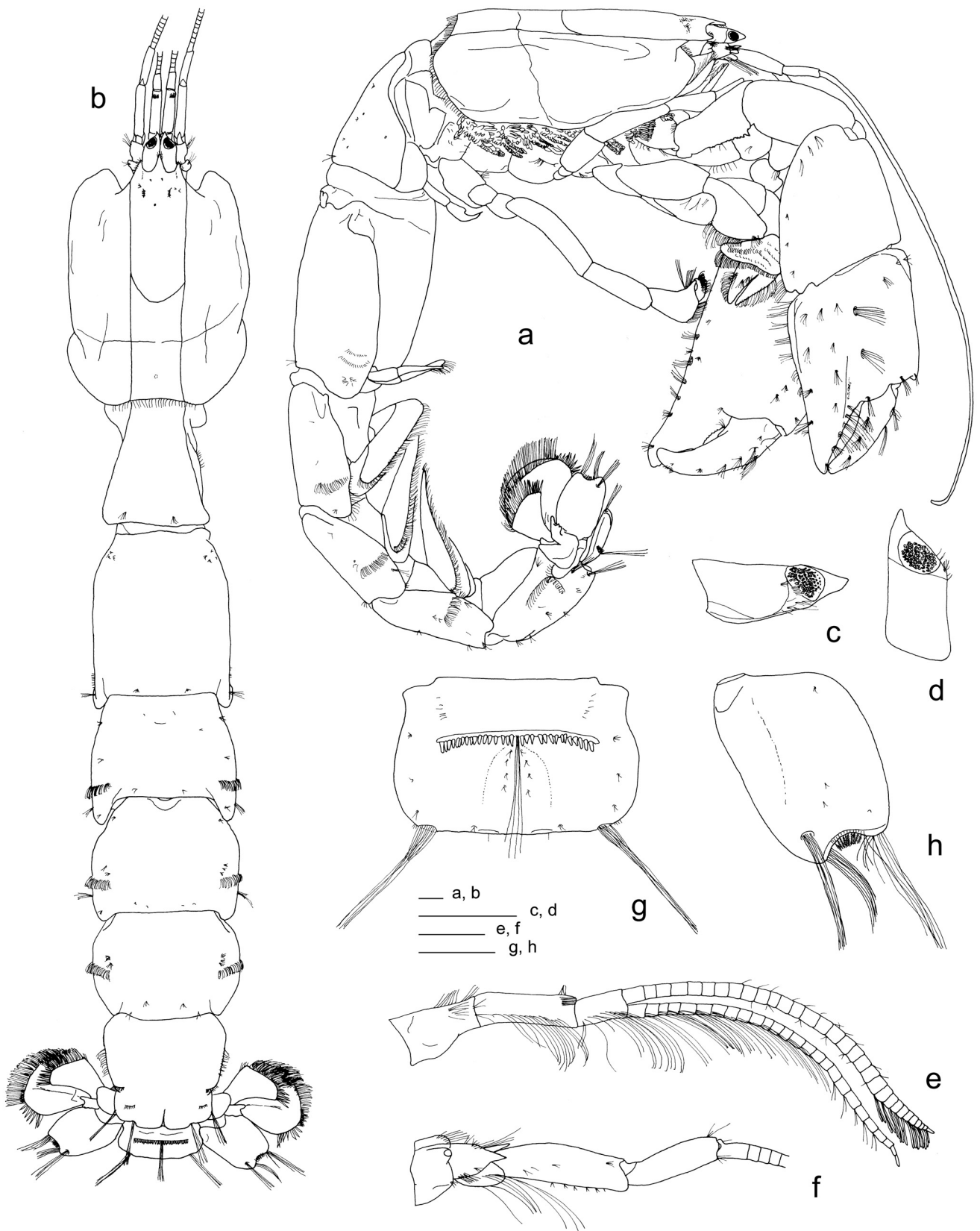


Fig. 1. *Eucalliax panglaensis*, new species, male holotype, Panglao, Bohol, Philippines, NMCR 27000: a, lateral view; b, dorsal view; c, lateral aspect of right eyestalk; d, same, dorsal aspect; e, right first antenna in lateral view; f, right second antenna in lateral view; g, dorsal aspect of telson; h, dorsal aspect of uropodal endopod. Scale bars = 1 mm.

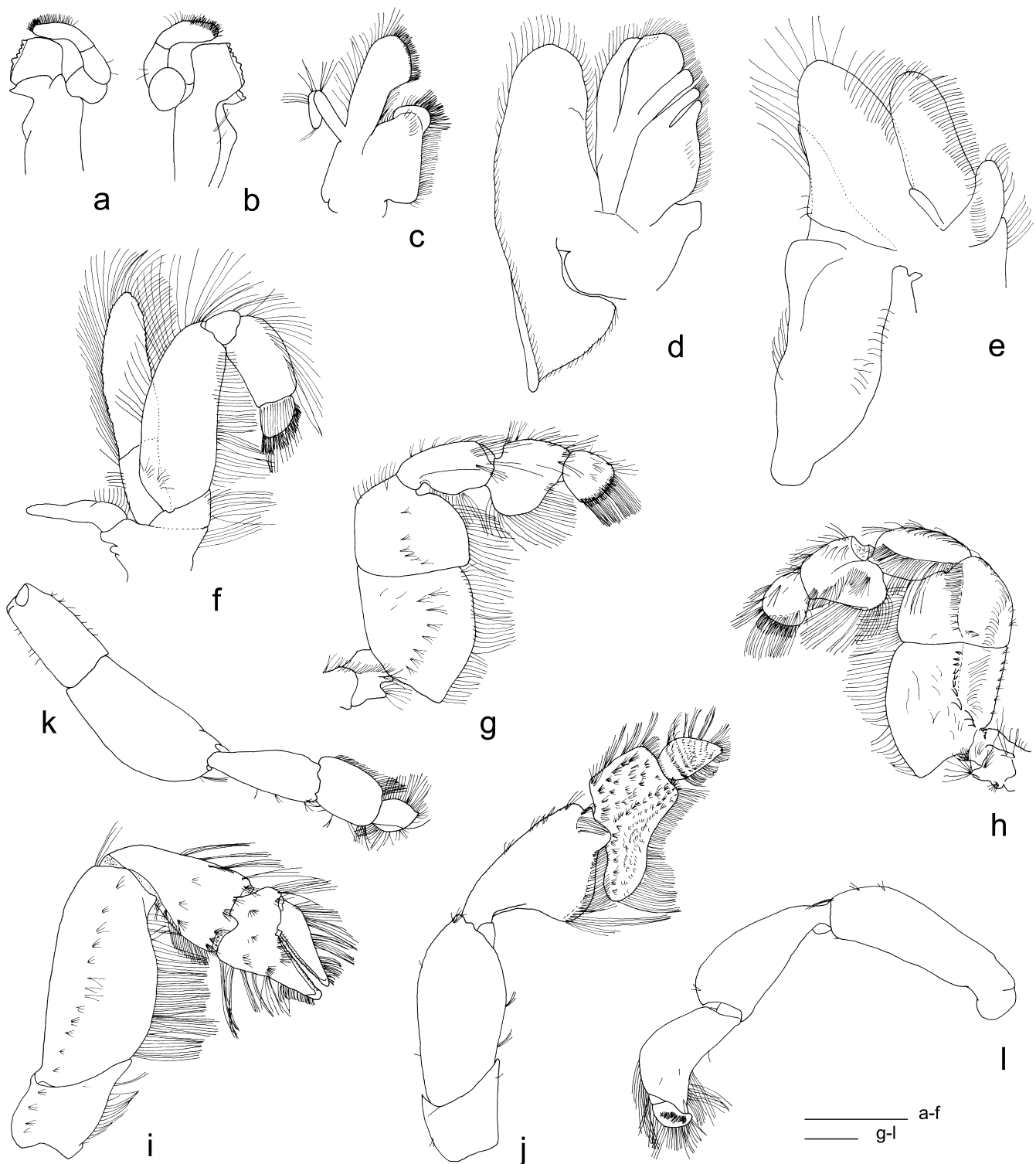


Fig. 2. *Eucalliax panglaoensis*, new species, male holotype, Panglao, Bohol, Philippines, NMCR 27000, right appendages; a, h, mesial surface; b-g, i-j, l, lateral surface: a,b, mandible, excluding paragnaths; c, first maxilla; d, second maxilla; e, first maxilliped; f, second maxilliped; g, h, third maxilliped; i, second pereopod; j, third pereopod; k, fourth pereopod; l, fifth pereopod. Scale bars = 1 mm.

terminally, as long as broad, fringed with very dense field of close-set, stiff serrated setae on broad terminal margin.

Branchial formula includes exopods and epipods as described for first, second and third maxillipeds above; branchiae limited to single rudimentary arthrobranch on second maxilliped, pair of arthrobranchs on third maxilliped, and pair of arthrobranchs on each of the first through fourth pereopods.

First pereopods with major and minor cheliped strongly developed, slightly unequal in size, dissimilar in dentition of fixed fingers. Major cheliped (Fig. 3a-c) strongly calcified; ischium stout, superior margin almost straight, flexor margin with spines increasing in size distally, length about 2 times distal breadth; merus stout, length about 2 times breadth at midlength, superior margin distally with blunt spine; carpus broad, broadest distally, inferior margin arcuate and keeled, terminating in spine, anterior border with blunt spine below insertion with the propodus, shallow excavation on the lateral face ventral to hinge, superior margin straight with keel terminating in acute spine distally; propodus heavy, length (including fixed finger) about 1.8 times height, inner surface of palm smooth; superior and inferior propodal margins keeled, keel of inferior mesially directed, becoming ill-defined beyond midlength and absent on fixed finger, tufts of setae on inner face below superior margin and above inferior margin, two large tufts of setae on outer face at midline; fixed finger thick, prehensile margin armed with one well separated rounded tooth in midlength, distal 1/3 microserrate, otherwise unarmed, terminating in rounded tip; weak unarmed excavation extending from below the articulation with the dactylus to below the tooth on mesial face; dactylus heavy, curved, line of 6 setose punctae on mesial side of superior margin, lateral face with 4 setose punctae along inferior border, tip strongly curved posterio-mesially.

Minor cheliped (Fig. 3d-f) slightly smaller in size than major, dissimilar in shape, ischium and merus as broad and long, carpus longer but less high, propodus 0.8 times the length and 0.9 height of these articles in the major cheliped; no triangular tooth on cutting edge of fixed finger, field of small tubercles on outer face of propodus below insertion of dactylus delimited by short furrow, inferior and superior keel on propodus margin prominent, superior terminating in large blunt tooth above insertion with the dactylus; dactylus less robust than in major cheliped.

Second pereopod (Fig. 2i) chelate, most of inferior margins of ischium and merus lined with evenly spaced long setae, similar setae restricted primarily to distal patches on inferior margin in carpus, inferior margin of propodus with similar setal patches, which are long proximally, progressively more reduced in length and stiffened distally, subterminally becoming dense patch of short, stiff bristles; prehensile margins of both fingers corneous, finely microserrate along straight edge over most of length, microserration terminating distally in corneous tips of fingers; superior margin of dactylus straight, with patches of stiff, arched bristles becoming increasingly reduced in length, close-set, and more arched distally.

Third pereopod (Fig. 2j) ischium short, half length of merus; merus length about 2 times width, inferior margin weakly sinuous, with two tufts of setae; carpus broadly flared distally to produce strong inferior lobe, width there about 3/4 length, inferior lobe terminally with field of long arched setae, diminishing in length toward articulation with propodus; propodus with strong proximally directed lobe on inferior margin, lobe terminally with field of long arched setae diminishing distally along margin, becoming close-set shorter bristles slightly longer at distal extreme, superior margin with tufts of long arched setae, patterned tufts of lighter setae on outer face of article; dactylus tear-shaped, length about 1.5 times width, terminating in narrow corneous tip hooked toward lateral side, inferior margin sinuous, lateral face crossed by fields of short, slightly hooked setae, longest near superior margin, with separate, dense field of slightly heavier short weakly hooked setae along lower extreme of lateral face and inferior margin.

Fourth pereopod (Fig. 2k) not subchelate, inferodistal corner of propodus rounded without evidence of fixed finger; dense setation on outer surface of both propodus and tear-shaped dactylus divided into upper and lower fields, setae slightly stronger in lower fields of both, densest on dactylus, especially on and near inferior margin; mesial surface of propodus with single large very long seta originating from near superior margin and reaching distally well beyond tip of dactylus.

Fifth pereopod (Fig. 2l) minutely chelate, opposable surfaces of propodus and minute dactylus excavate, spooned, terminally rounded, forming beak-like chela obscured by dense fields of setation on distal 1/2 of propodus and superior surface of dactylus.

Abdomen long (Fig. 1a); dorsal length ratio (along midline) of first to sixth abdominal somites 1.0: 1.35: 0.82: 0.88: 0.88: 0.88. First somite narrowed anteriorly, pleuron triangular with rounded ventral margin. Posterior half ventrally without pair of conspicuous ovoid plates of thickened integument. Second somite with concave anterior margin, posterior margin expanded posterolaterally, with two setal rows near the posterior margin. Third to fifth somites each distinctly shorter than second somite; pleura each with tuft of short setae midlaterally and on posteroventral margin. Sixth somite subrectangular in dorsal view, slightly narrowed posteriorly, with lateral constriction in posterior 1/3, ventral margin of pleurite with short setae, posterior margin with two tufts of long setae each in the middle of each side and on posterolateral margin.

First male pleopod uniramous (Fig. 3g, h), composed of two articles, total length 3/4 that of second pleopod, proximal article same length as distal article, long setae distally, terminal article with lateral, anteriorly directed, hook-shaped, apical process and a medial subapical process.

Second male pleopod biramous, with appendix interna (Fig. 3i); dense setation largely restricted to distal extreme of exopod, distal lobe of endopod and appendix masculina; appendix masculina markedly overreaching distal lobe of endopod, bearing small appendix interna with cincinnuli.

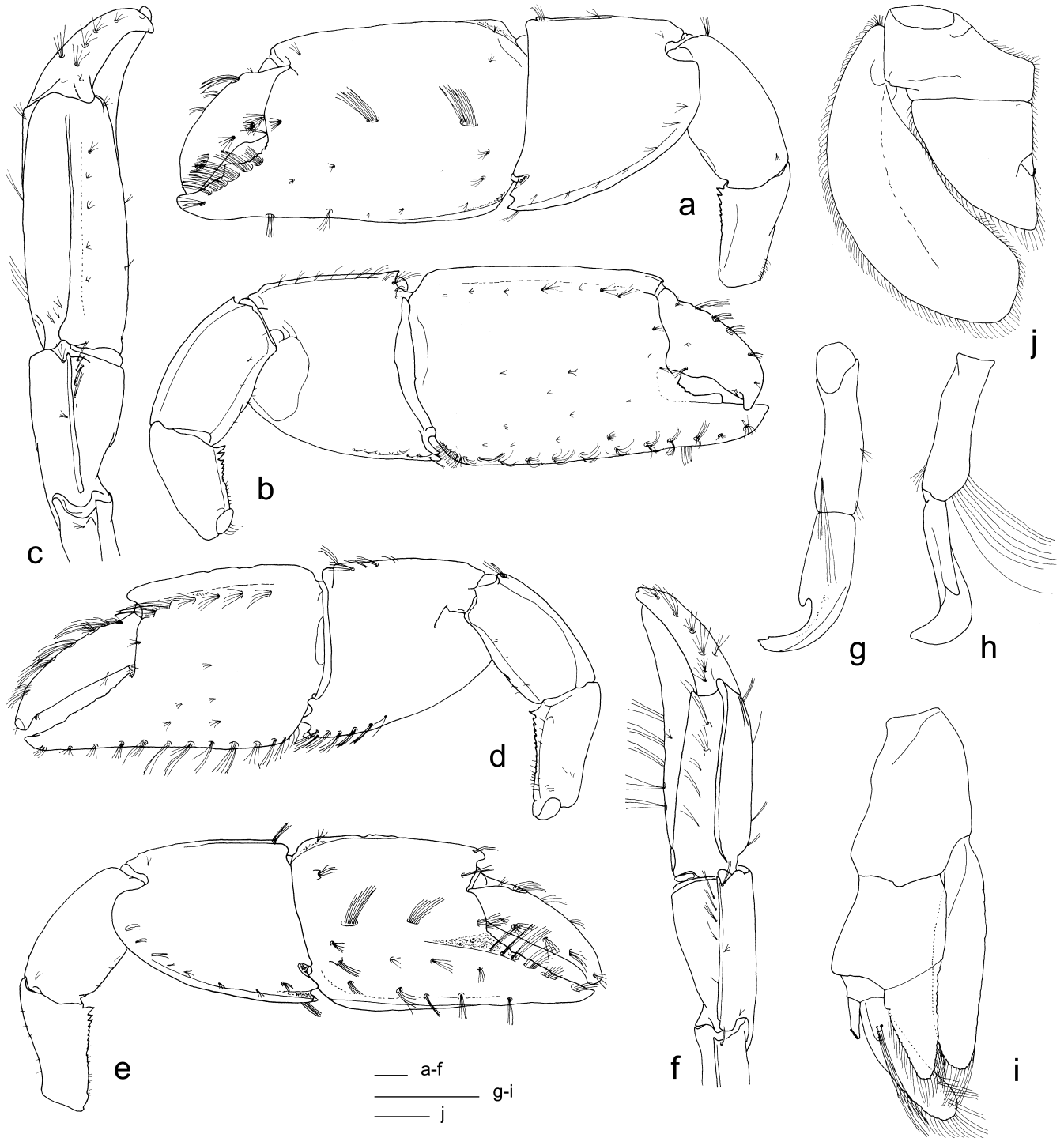


Fig. 3. *Eucalliax panglaoensis*, new species, male holotype, Panglao, Bohol, Philippines, NMCR 27000; a, e, lateral surface; b, d, g, mesial surface; c, f, dorsal aspect; h, j, anterior surface; i, posterior surface; a-c, major cheliped; d-f, minor cheliped; g, h, right first pleopod; i, second pleopod; j, third pleopod. Scale bars = 1 mm.

Third to fifth pleopod pairs (Fig. 3j) forming large, posteriorly cupped fans when cross-linked by hooked setae of appendices internae on opposed margins of endopods; endopod of each subtriangular. Appendices internae stubby, movably articulated to mesial margin of endopod.

Telson (Figs. 1g) about 1.6 times as broad as long, broadest at 2/3 length, posterolateral margin rounded, each bearing tuft of long posterolaterally directed setae, dorsal surface with transverse carina bearing 32 cuspidate setae broken by single tuft of long setae at midline.

Uropod with endopod 1.5 times as long as broad (Fig. 1h), overreaching telson, dorsal surface with tufts of long setae

posteriorly, posterior margin concave, with short plumose setae in the middle of concavity and tuft of long setae at each end; exopod with anterodorsal plate falling short of distal endopod margin, distal edge of plate lined with short, thick spiniform setae grading to thinner longer setae of exopod margin and long, stiff, spiniform setae at posterodistal corner of plate, distal margin of exopod with dense fringe of setation grading to large spiniform setae of posterodistal margin.

Description of allotype. – Body and appendages generally similar to that of male holotype with the following exemptions:

Mxp3 merus with small spine on superior margin (Fig. 4g).

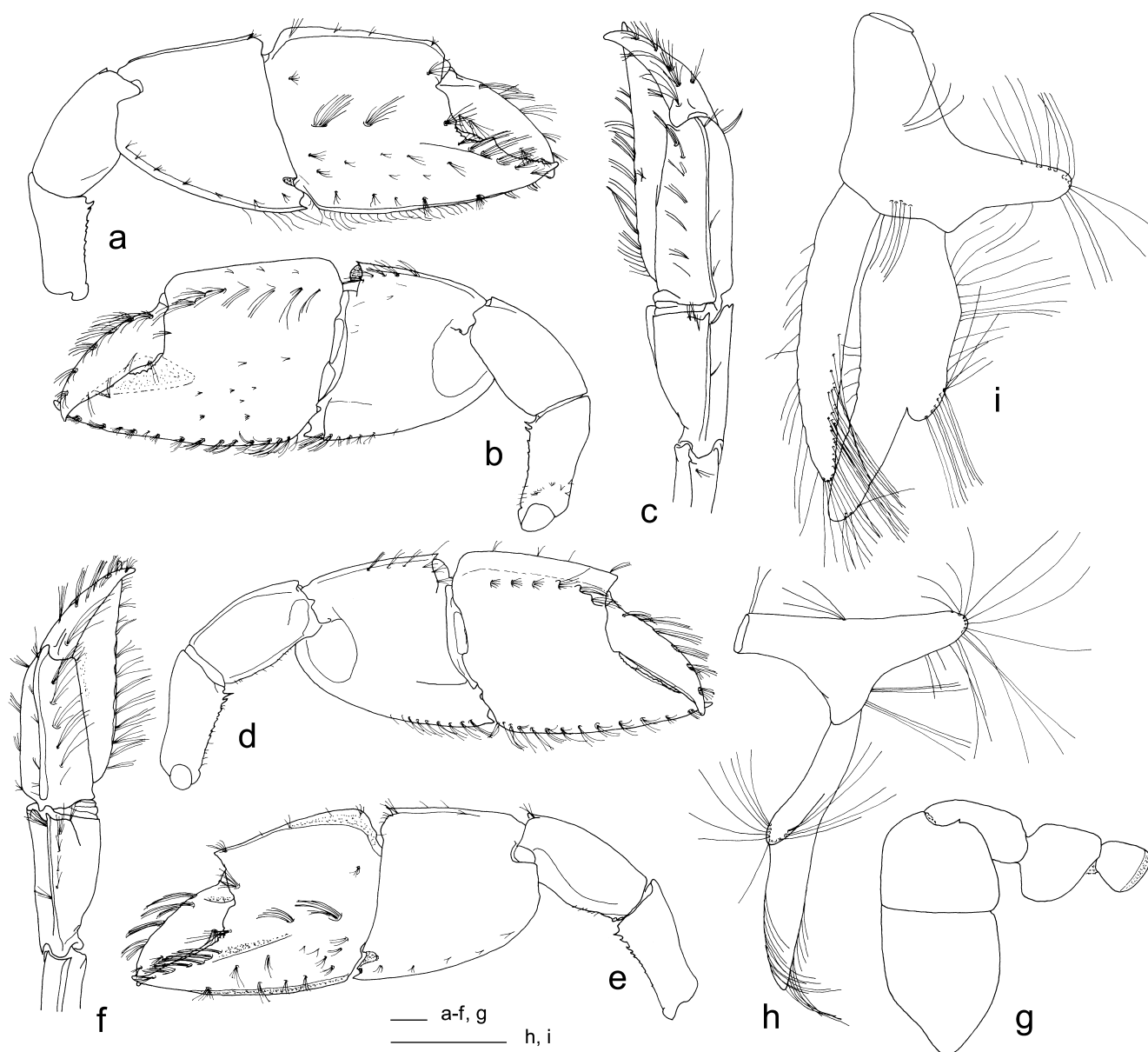


Fig. 4. *Eucalliax panglaoensis*, new species, female allotype, Panglao, Bohol, Philippines, NHMW 20922; a, e, g, lateral surface; b, d, mesial surface; c, f, dorsal aspect; i, h, anterior surface; a-c, major cheliped; d-f, minor cheliped; g, third maxilliped (setae not shown); h, first pleopod; i, second pleopod. Scale bars = 1 mm.

Major and minor cheliped in female allotype of similar size and shape between the right and the left (Fig. 4a-f), major with sharp triangular tooth on cutting edge of fixed finger. Spines on upper border of merus, carpus and propodus (in minor) more acute, keels on inferior and superior margins of carpus and propodus more prominent than in these articles of the male holotype's chelipeds.

First pleopod of female (Fig. 4h) uniramous, composed of two articles, second articulated at midlength of first, thus appearing T-shaped, proximal article about 0.8 times length of distal article, long setae distally, terminal article with long setae on broad shoulder at midlength and short setae distally.

Second pleopod of female (Fig. 4i) biramous, basipod with rounded mesially directed extension, without appendix interna on endopod; long setae on mesial extension of basipod and endopod, exopod shorter than endopod.

Variations. – The rostrum varies from almost absent (Fig. 5a), broadly triangular (Fig. 6j) to a prominent spine reaching to 1/3 to 1/2 the length of the eyestalks (Figs 1a, b, 6a), while the lateral projections vary from almost absent (Fig. 6b, j) to half or the same length as the rostral spine (Fig. 1a, b). The shape of the eyestalks varies from elongated with diverging tips (Fig. 6a) to closely abutted with rounded tips (Fig. 6b, j). Corneas are distal and relatively large, occupying up to half the length of the eyestalks in small specimens (Fig. 6j), whereas the corneas of larger specimens occupy only 0.9 times eyestalk width and 0.5 times eyestalk length, respectively, and are situated more laterally (Figs 1c, d, 6a).

A spine on the upper border of Mxp3 merus is present in 5 specimens (2 males, 3 females, including the allotype), this spine is absent in the remaining 8 complete specimens (4 males, 4 females, including the holotype).

Two females (NHMW 20923, ZRC 2006.0106) show a large anteriorly directed spine proximally on the superior margin of the carpus and a distinct ridge near the lower articulation with the propodus at the mesial face in both major and minor chelipeds (Fig. 5b-g). Distal to this spine is a deep conical depression. On the outer face of the carpus are short incisions at the height of both hinges with the propodus, the superior distal margin shows a dentition and the spines at the inferior distal margin are separated by deep excavations. Less distinct spines on the mesial superior margin of the carpus were present in three other specimens (1 male, 2 females).

Other variations appear related to sex and growth. Generally, chelipeds of females (Figs 4a-f and 5b-g) and small males are almost equal in size (Figs. 6c-f), whereas the chelipeds become slightly unequal in large males (Figs. 3a-f). The relation between carapace length and palm length is shown in Fig. 7. Major chelipeds are characterised by the presence of a triangular tooth on the cutting edge of the fixed finger and a rounded upper corner of the propodus. The minor chelipeds lack the tooth on the cutting edge and have the upper propodus corner acute. In the smallest male (NHMW 20925, tl 16 mm), both major and minor cheliped have a tooth on the cutting edge (Fig. 6c, f). Seven individuals (2 males, 5 females) have the major cheliped on the right side, six (4 males, 2 females) on the left side. Male pleopods 1 are chelate

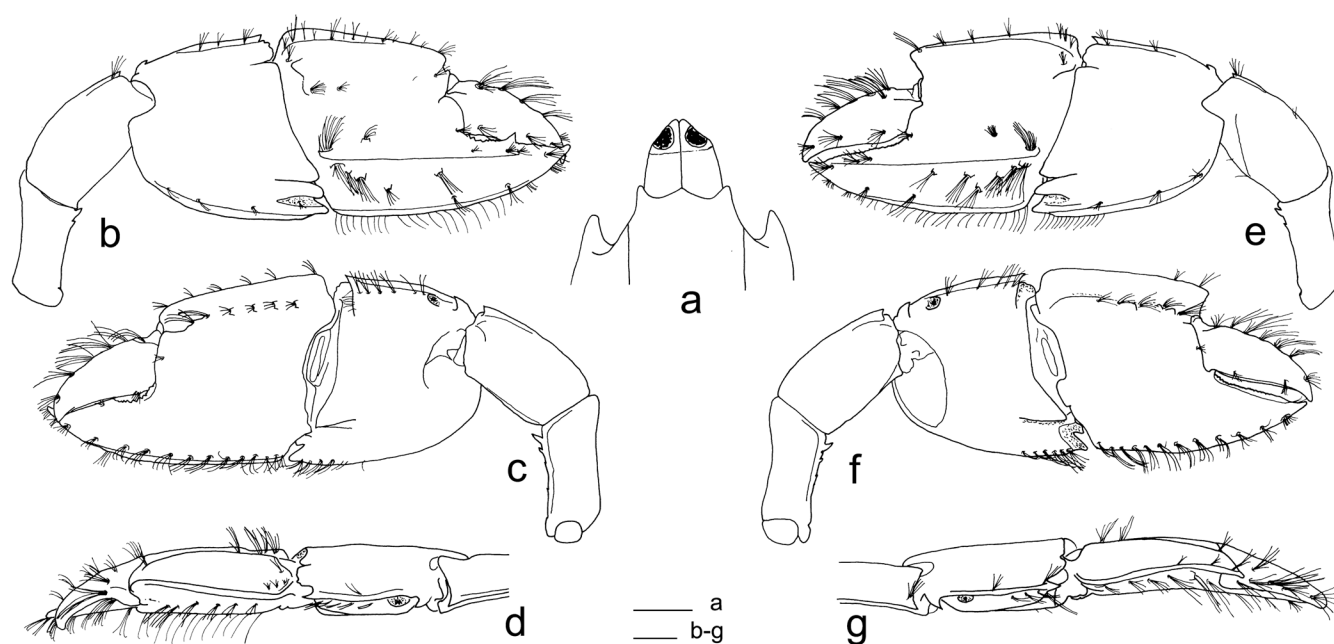


Fig. 5. *Eucalliax panglaoensis*, new species, female paratype, Panglao, Bohol, Philippines, NHMW 20922; a, dorsal aspect; b, e, lateral surface; c, f, mesial surface; d, g, dorsal aspect; a, front and eyestalks (setae not shown); b-d, major cheliped; e-g, minor cheliped. Scale bars = 1 mm.

(as shown for the holotype in Fig. 3g, h) only in large specimens (> 30 mm tl), small ones (16 to 19 mm tl) have a simple (Fig. 6k) to slightly bilobed second article. The second pleopod of the smallest male shows a small appendix masculina which is shorter than the appendix interna (Fig. 6l, m) lacking cincinnuli. Similarly, female pleopods 1 and 2 are simple in the smallest specimen (NHMW 20926, tl 16 mm) (Fig. 6g, h) and show the mesial extensions of the basipod only in larger specimens. A distinct appendix interna with 5 cincinnuli is present on the second pleopod only in this small female (Fig. 6h, i), whereas it is missing in all other females. The number of cuspidate setae on the telson carina ranges from 20 in small specimens to 26, 32 and 34 in larger individuals.

Size. – Of the 13 complete specimens, the holotype is the largest (tl ca 47 mm, cl 10.4 mm), the allotype measures in tl ca 40 mm and in cl 9.3 mm, the paratypes range in size from 16 to 36 mm tl and from 3.4 to 8.4 mm cl respectively.

Colour (from notes and colour photographs of live specimens). – Pale, carapace, abdominal somites 1, 3 to 6 and tailfan white, abdominal somite 2 translucent, chelipeds white or slightly pink in small specimens.

Known range and habitat. – Known only from the type locality, Panglao Island, Bohol, Philippines. Here, it occurs in the intertidal of sandy beaches (Alona Beach, Doljo Beach, Sungcolan), but also in shallow (3 to 4 m) sublittoral sediments (Sungcolan Bay, Lagoon outside). Its burrow openings in the sublittoral are characterised by flat (ca 1 cm high) grey mounds (diameter at their base ca 10 to 15 cm).

Etymology. – Named after the type locality.

Remarks. – Four genera of the Eucalliinae Manning & Felder, 1991 have been established so far: *Calliax* de Saint Laurent, 1973; *Eucalliiax* Manning & Felder, 1991; *Paraglypturus* Türkay & Sakai, 1995; and *Calliaxina* Ngoc-

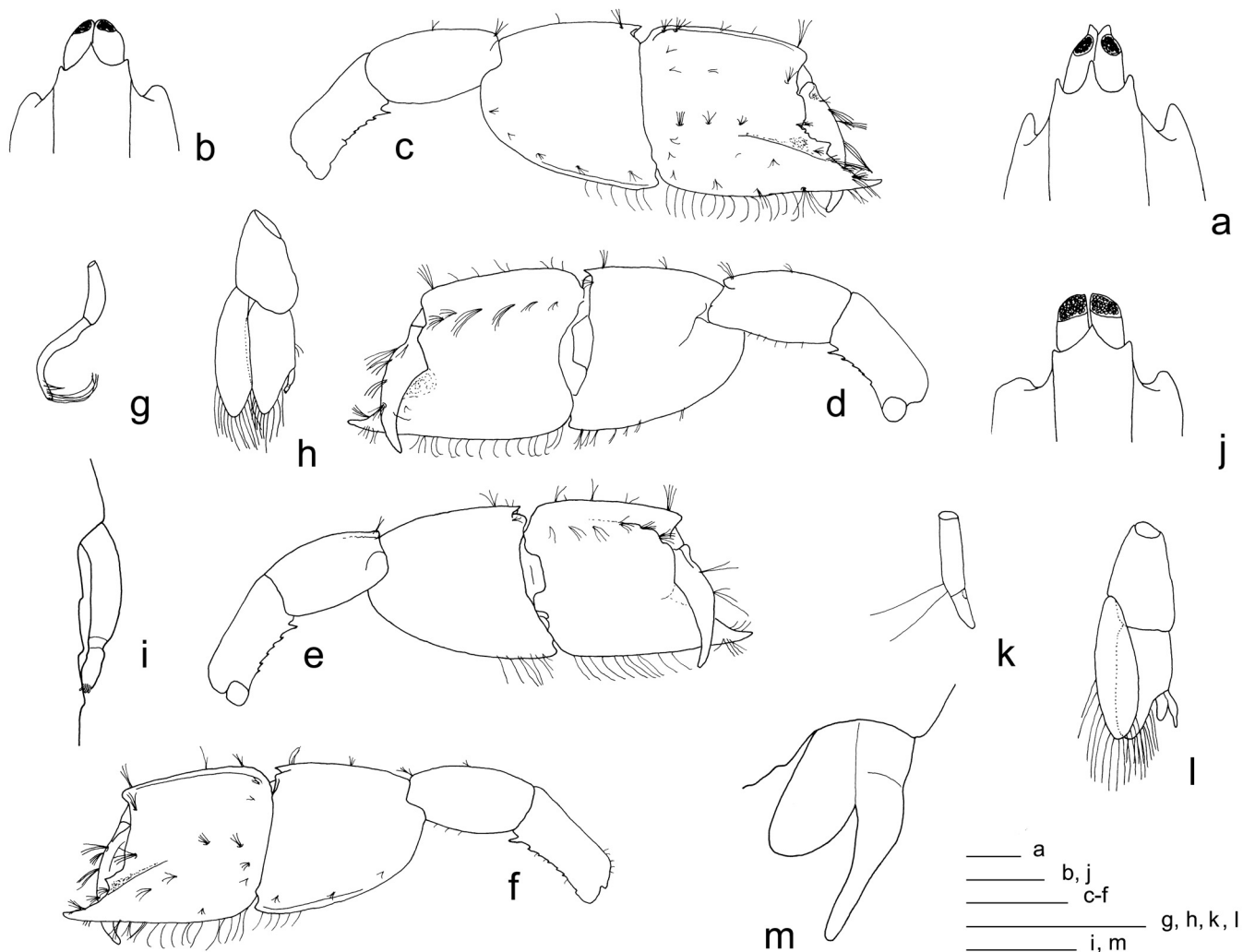


Fig. 6. *Eucalliiax panglaoensis*, new species, Panglao, Bohol, Philippines, female paratype, ZRC 2006.0105 (a); female paratype, NHMW 20926 (b-h); male paratype, NHMW 20925 (i-k); a-b, j, dorsal aspect; c, f, lateral surface; d, e, mesial surface; g-i, k-m, anterior surface; a, b, j, front and eyestalks; c-d, major cheliped, e-f, minor cheliped; g, k, first pleopod; h, l, second pleopod; i, m, same, detail of appendix interna (setation omitted). Scale bars: a-h, j-l = 1 mm; i, m = 0.1 mm.

Ho, 2003. Sakai (1999) synonymised *Eucalliax* with *Calliax*. Ngoc-Ho (2003), however, confirmed the validity of the former. The latter author distinguished the genera mainly on basis of a prominent exopod on Mxp3 (present in *Paraglypturus* and *Calliaxina*, absent in *Calliax* and *Eucalliax*). The new species is here placed into the genus *Eucalliax* because 1) it lacks an exopod on Mxp3 which is operculiform, 2) has a reduced arthrobranch on Mxp2, 3) has the A1 peduncle distinctly shorter than the A2 peduncle, 4) has the telson more than 1.5 times as wide as long, 5) has uropods which are much longer than the telson, and 6) has almost equal chelipeds, the minor not showing a long dactylus and a short fixed finger separated by a wide gap, typical for *Calliax* (Ngoc-Ho, 2003: 490, fig. 17E). Recently, Sakai (2005: 197) synonymised again *Eucalliax* and also *Calliaxina* with *Calliax*. For the former, however, he argued that the type species, *Callianassa quadracuta* Biffar, 1970 lacks a dorsal carina, a character which was not included in the diagnosis of the genus *Eucalliax* by Manning & Felder (1991). I therefore follow here Manning & Felder (1991) and Ngoc-Ho (2003) rather than Sakai (1999, 2005).

Eucalliax panglaoensis, new species, is similar to *E. aequimana* (Baker, 1907), *E. bulimba* (Poore & Griffin, 1979) and *E. kensleyi* (Dworschak, 2005) with respect to the front of the carapace, which is, however, variable. Such a variation in the shape of the rostrum has been reported also for *E. aequimana* (Baker, 1907) by Poore & Griffin (1979). The new species shares with *E. quadracuta* (Biffar, 1970) a similar shape of the chelipeds, which have spines on the distal borders of the carpus, and the absence of an appendix interna on the second pleopod in adult females whereas the appendix is present in all other members of *Eucalliax* for which females were available. A transverse carina on the telson occurs also in *E. aequimana* (Baker, 1907), *E. jonesi* (Heard, 1989) and *E. mcilhennyi* Felder & Manning, 1994. In these three species, however, the carina is simple, whereas it is beset with

cuspidate setae in the new species. *Eucalliax panglaoensis*, new species, is also unique in having mesially extended basipods of the first pleopod in adult females. This extension is only slightly developed in two other congeners, *E. quadracuta* (Biffar, 1970) and *E. ceareaensis* (Rodrigues & Manning, 1992) (Biffar, 1970: fig. 2n, o; Rodrigues & Manning, 1992: fig. 2u, v).

Eucalliax panglaoensis, new species, shows a great variability in the shape of the front, in the spination of the chelipeds and also in the spination of the third maxilliped. Most specimens were collected from a single location (Alona Beach), where the population included individuals with or without a spine on the superior margin of Mxp3 and others with or without spines on the upper mesial margin of the carpus of the cheliped in arbitrary combinations. Remarkable is also the absence of an appendix interna on the second female pleopod in adult individuals whereas it is present in the smallest female. It thus appears that this appendix is lost with growth and sexual maturation of females.

ACKNOWLEDGEMENTS

The material described herein was collected during the Panglao Biodiversity Project 2004, which was made feasible through grants from the Total Foundation for Biodiversity and the Sea, the French Ministry of Foreign Affairs, and the ASEAN Regional Centre for Biodiversity Conservation (ARCBC). The Philippines Bureau of Fisheries and Aquatic Resources (BFAR) is acknowledged for issuing a research permit. The author thanks the Principal Investigators, Dr Philippe Bouchet (Muséum National d'Histoire Naturelle, Paris, France) and Dr Danilo Largo (University of San Carlos, Cebu, Philippines) for the invitation to participate in the field work. The author is grateful to Drs Peter K. L. Ng and Swee-Hee Tan (Department of Biological Sciences, National University of Singapore, Singapore) for the opportunity to study the thalassinidean shrimps collected during the Panglao project. The manuscript benefited from the constructive comments of Drs Darryl Felder and Nguyen Ngoc-Ho.

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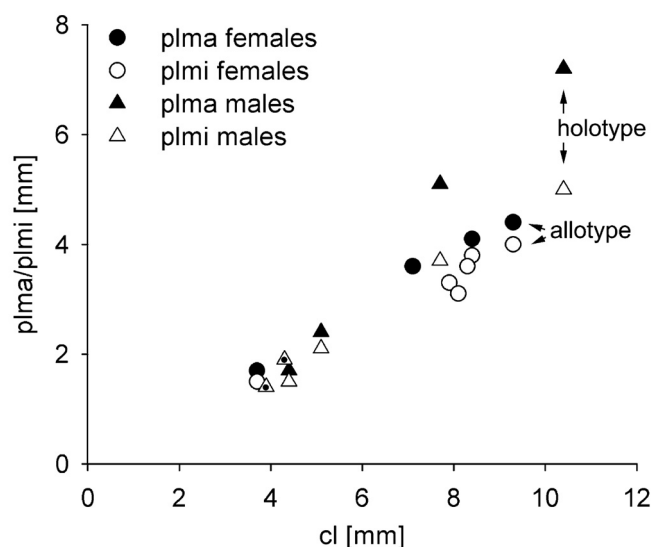


Fig. 7. *Eucalliax panglaoensis*, new species, all available specimens; palm length of major (plma, filled symbols) and minor (plmi, open symbols) in relation to carapace length. Open triangles with dots indicate overlapping symbols where plma=plmi.

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