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Lamoha hystrix, a new species of deep-water porter crab (Crustacea: Decapoda: Brachyura: Homolidae) from the central Pacific

Peter K. L. Ng

Department of Biological Sciences, National University of Singapore, Kent Ridge, Singapore 119260, Republic of Singapore

Abstract.—A new species of deep-water porter crab, *Lamoha hystrix* (Homolidae), is described from Canton Island (Phoenix Island group) in the central Pacific. *Lamoha hystrix* appears to be most closely allied to *L. longipes* (Alcock & Anderson, 1899), *L. murotoensis* (Sakai, 1979) and *L. inflata* (Guinot & Richer de Forges, 1981) from the Indian Ocean, Japanese and central Pacific waters respectively, but can easily be distinguished from them by its proportionately longer ambulatory legs and the presence of spines on the dorsal margin of the merus of the fifth ambulatory leg.

Recently, a series of homolid specimens collected from various parts of the Pacific and deposited in the Bernice P. Bishop Museum (BPBM), Honolulu, were examined. Among this material was an interesting specimen of the genus *Lamoha* Ng, 1998, from Canton Island, Phoenix Island group, which could not be referred to any known species. The genus is a replacement name proposed by Ng (1998) for *Hypsophrys* Wood-Mason & Alcock, 1891, who showed that the latter name was preoccupied by *Hypsophrys* Agassiz, 1859, a genus of freshwater fish. In the family revision by Guinot & Richer de Forges (1995), eight species of *Lamoha* (as *Hypsophrys*) were recognized from the Indo-Pacific and Atlantic Oceans.

Lamoha hystrix, new species, is here described. The terminology used follows Guinot & Richer de Forges (1995). The abbreviations P1–5 refer to the pereiopods (P1, cheliped, and P2–5, first to fourth ambulatory legs); M, Pr, and D are for merus, propodus, and dactylus respectively.

Taxonomic Account

Genus *Lamoha* Ng, 1998

Hypsophrys Wood-Mason & Alcock, 1891: 269 (preoccupied by *Hypsophrys* Agassiz, 1859:408) (see Ng 1998 for a discussion on the correct authorship for *Hypsophrys* Wood-Mason & Alcock, 1891).

Lamoha Ng, 1988:121.

Type species.—*Hypsophrys superciliosa* Wood-Mason & Alcock, 1891, by original designation.

Lamoha hystrix, new species
Figs. 1–3

Material examined.—Holotype, ovigerous female, carapace width 38.7 mm, carapace length (tip of rostrum to posterior carapace margin) 48.9 mm, BPBM 511810, Canton (Kanton) Island, ca. 2°50′S 171°40′W, Phoenix Island Group, east of Kiribati, southwest of Hawaii, ca. 305–366, coll. T. Morin, Jun 1979.

Diagnosis.—Carapace longitudinally rect-

Fig. 1. *Lanoha hystrix*, new species. Holotype female, carapace width 38.7 mm, carapace length 48.9 mm, BPBM 511810. A, overall dorsal view; B, frontal view, C, left cheliped.

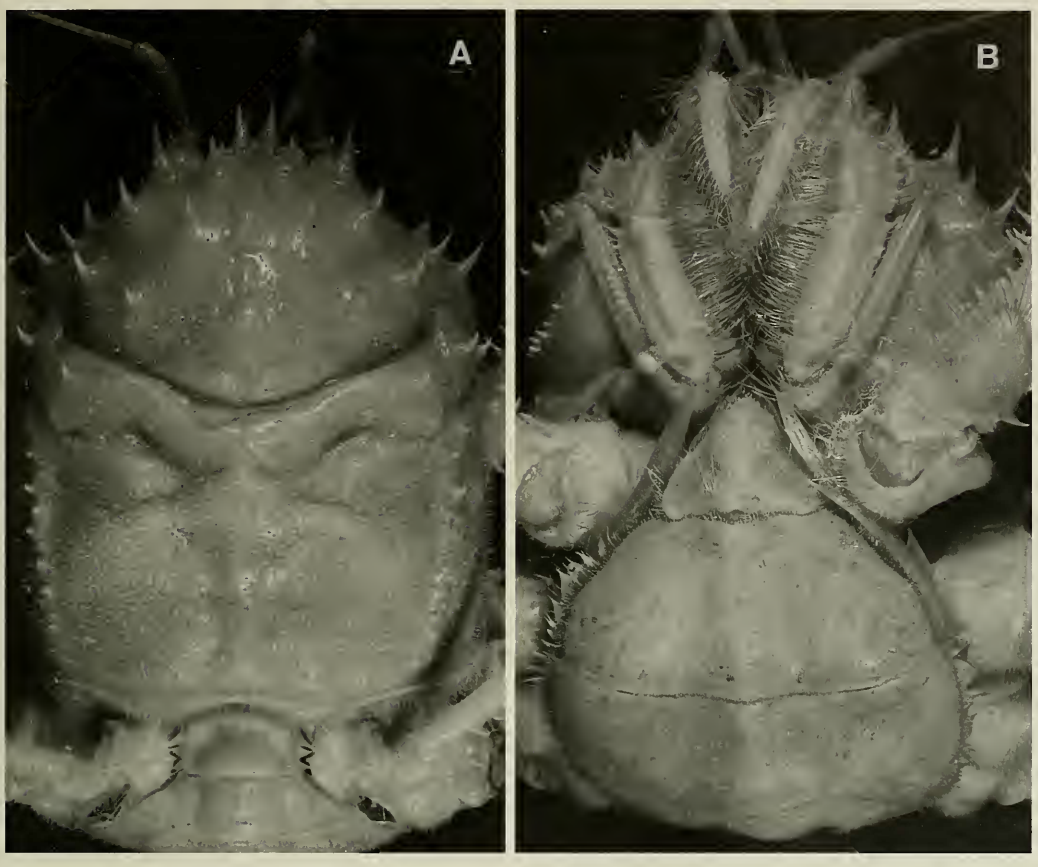

Fig. 2. *Lamoha hystrix*, new species. Holotype female, carapace width 38.7 mm, carapace length 48.9 mm, BPBM 511810. A, carapace, dorsal view; B, abdomen.

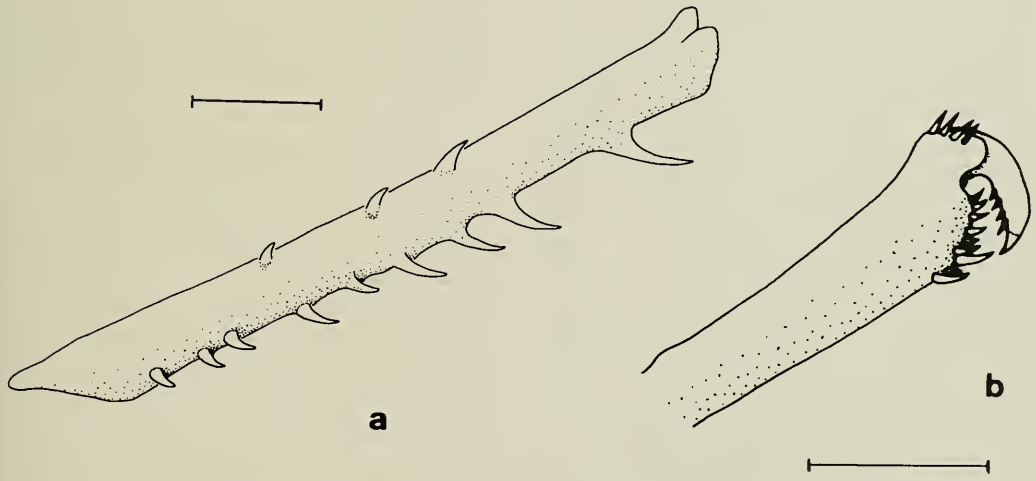

Fig. 3. *Lamoha hystrix*, new species. Holotype female, carapace width 38.7 mm, carapace length 48.9 mm, BPBM 511810. a, right merus of fifth ambulatory leg; b, subchelate structure on right fifth ambulatory leg. Scales = 5.0 mm.

angular (length to width ratio 1.26); rostrum bifurcated, with relatively elongate base; posterolateral margin with row of granules; protogastric region with 4 spines; mesogastric region with 1 spine; metagastric region granulated; subhepatic region with 2 lateral spines and 5 other spines on surface; P2–4 elongate, M2–4 relatively wide, with 14–18, 19–20, 18 dorsal spines respectively; P5 with 3 dorsal spines and 8–9 ventral spines; Pr4 with 6–7 spines; subchelate margin of propodus of P5 with 9–10 spines.

Description of holotype female.—Carapace longitudinally rectangular, regions well defined (Figs. 1A, 2A). Entire carapace and pereiopod surfaces with short, stiff, simple setae. Rostrum well developed, base relatively elongate, distal part bifurcated with 2 sharp spines. Pseudorostral spines as long as rostral spines, sharp. Supraorbital spines very long (Figs. 1A, 2A). Anterolateral margin with 2 lateral and 2 subdorsal spines. Posterolateral margin gently convex, lined with a row of small sharp and rounded granules along "linea homolica" (Fig. 2A). Protogastric region with 3 large and 1 small (inner posterior) spines. Mesogastric region with 1 short, sharp spine. Metagastric region granulated but without spines. Branchial regions covered with fine granules. Subhepatic region with 2 lateral spines, 1 small submarginal spine, 1 subdorsal spine and 3 subventral spines (Figs. 1B, 2A). Posterior part of pterygostomial region covered with granules and spinules. Gastro-cervical groove deep, contiguous medially. Branchio-cardiac groove deep (Fig. 2A). Basal antennal article with 1 inner spine. Antennular peduncle with 1 sharp spine. Posterior carapace margin sinuous, median part concave. Main proepistomal spine long, sharp; lateral spines distinctly shorter (Fig. 1B). Merus of third maxilliped with group of 2–3 spines medially, rest of margin with scattered spines and spinules; ischium with outer margin anterior ⅓ of outer margin spinate, with distinct granulated longitudinal median ridge; exopod slender, reaching to mid-point of outer margin of merus, proximal half with granule-lined longitudinal median ridge.

P1 (chelipeds) subequal, elongate, slender (Fig. 1A). Carpus with 3–4 sharp, curved spines on inner distal margin; outer surfaces of chelae with several rows of spinules, spines and granules, those along outer surface flatter or blunter, without any trace of pigmented spot (Fig. 1C). Fingers elongate, distal part curving inwards, dactylus with strong longitudinal ridge and sulcus, distal one-third of dactylus and cutting margins pigmented dark brown in preservative, cutting edges smooth, blade-like (Fig. 1C). P2 and 3 longest (Fig. 1A). Rest of armature on pereiopods as follows: M5 with 3 dorsal and single row of 8–9 ventral spines (Fig. 3a); M4 with 18 dorsal and 2 rows of ventral spines (posterior row with 17–18 spines, anterior row with 21 spines); M3 with 19–20 dorsal spines and 2 rows of ventral spines (posterior row with 19–23 spines, anterior row with 28 spines); M2 with 14–18 dorsal spines and 2 rows of ventral spines (posterior row with 16–21 spines, anterior row with 19–26 spines); M1 with 14 dorsal spines (with 1 distally positioned) and 2 rows of ventral spines (posterior row with 12–13 spines, anterior row with 15–17 spines); Pr4 with 6–7 spines of which 2 are distally positioned, movable and bracketing base of dactylus; D3 and D4 with 19 spines on ventral margin; D2 with 16–18 spines on ventral margin. Dorsal armature of all pereiopods with median spines largest; spines on ventral armature of pereiopods progressively larger towards distal end, with numerous granules of varying sizes at proximal surface which makes counting of exact number of spines difficult; rows of spines on ventral margins not linear but uneven, especially along proximal part; all spines curving outwards. Dactylus and distal part of propodus of P5 forming subchelate structure; anterior tip of propodus with 4–5 movable spines; subchelate margin of propodus with 9–10 spines; ventral margin of dactylus with 4 movable spines (Fig. 3b). Basis-ischium of

P1 with 1 sharp dorsal spine and several smaller spines and granules; those of P2–4 with 2 dorsal spines bracketing merus; that of P5 with 1 median dorsal spine. Coxa of P1 with 1 sharp on inner dorsal angle and 1 large granule on outer dorsal angle; those of P2–4 with 2 sharp spines on dorsal margin bracketing basis-ischium; that on P5 without spines or spinules.

Abdomen covering entire thoracic sternum; telson triangular, with distal part of lateral margins concave (Fig. 2B).

Remarks.—Lamoha hystrix, new species, appears to be closest to *L. longipes* (Alcock & Anderson, 1899) (Indian Ocean), *L. murotoensis* (Sakai, 1979) (Japan, Taiwan, and Madagascar and Seychelles with doubt) and *L. inflata* (Guinot & Richer de Forges, 1981) (Loyalty Islands, Samoa and Tuamotu). This group of species is essentially defined by the form of the frontal and supraorbital margins, the proepistome possessing a distinct vertical spine and the propodus of Pr5 being very short with the propodal finger of the subchelate process very low (Guinot & Richer de Forges, 1995: 444). In addition, all four species have similar fourth ambulatory meri which are armed with spines along the ventral margin. None of these species, however, have the dorsal margin of the merus armed with spines as in *L. hystrix*. The spines on the dorsal margin of the fourth leg in *L. hystrix* are relatively small but very distinct (Fig. 3a).

The carapace features of *L. hystrix* appear to be closest to *L. longipes* with regards to the posterolateral margin lined with small granules. In addition to the earlier mentioned presence of spines on the dorsal margin of the fourth ambulatory leg, *L. hystrix*, can easily be separated from *L. longipes* by the its proportionately longer ambulatory meri (M4 length to maximum width ratio 8.1 in *L. hystrix*, 7.5–7.6 in *L. longipes*), larger number of spines on the ambulatory meri (e.g., M4 with 18 in *L. hystrix*, 13–14 dorsal spines in *L. longipes*), presence of spines on the ventral margin of Pr4 (absent in *L. longipes*) (cf. Alcock 1901: pl. 6 fig. 25), and the larger number of teeth on the subchelate margin of the propodus of P5 (9–10 spines in *L. hystrix*, 6 in *L. longipes*) (cf. Williams 1974:489, fig. 8). The outer surface of the female chela also lacks a dark spot.

A note on *L. longipes* is relevant here. The carapace proportions for the various reported specimens of *L. longipes* seem different, although this may be a result of difference in sizes. The specimen (apparently a male 39.4 by 30.6 mm, carapace length to width) figured by Alcock (1901: pl. 6 fig. 25) has a carapace length to width ratio of 1.29. Alcock (1901:69) also mentions a large ovigerous female measuring 38.0 by 30.0 mm (ratio 1.27). The female specimen of *L. longipes* from the Seychelles examined and figured by Guinot & Richer de Forges (1995:447, fig. 56a, b), however, measures 33.2 by 29.0 mm, and has a length to width ratio of 1.14, that is, the carapace is more squarish. The spines on the protogastric and mesogastric regions of this specimen also appear to be lower and more scattered, with the rostral base very short, compared to the material described and illustrated by Alcock & Anderson (1899:6), Alcock (1899:15, pl. 1 fig. 1; 1901:69, pl. 6 fig. 25) and Doflein (1904: pl. 11 fig. 1, 2; pl. 50 fig. 4; pl. 51 fig. 1; pl. 52 figs. 1–5). Whether this material is really *L. longipes* cannot be ascertained as only one specimen from the Seychelles was obtained. In any case, Guinot & Richer de Forges (1995:447) had referred the specimen to the species with reservations. The carapace proportions of *L. hystrix*, new species (length to width ratio 1.26) are comparable with those of *L. longipes* sensu stricto.

The positions and strengths of the spines on the gastric region of *L. hystrix*, new species, are very similar to that on *L. murotoensis*, but *L. murotoensis* is easily separated by the strong longitudinal ridge on its posterolateral margin. *Lamoha inflata* is a

very distinctive species with the gastric carapace regions unarmed.

In addition to *L. murotoensis* and *L. inflata*, three other species are known from the Pacific, i.e., *L. williamsi* (Takeda, 1980) (Kyushu-Palau Ridge), *L. personata* (Guinot & Richer de Forges, 1981) (Polynesia, Vanuatu, Samoa, Kiribati, Australia), and *L. futuna* (Guinot & Richer de Forges, 1995) (Wallis and Futuna Islands) (Guinot & Richer de Forges 1995). These species, however, differ markedly from *L. hystrix* in a multitude of pereiopod and carapace features (Guinot & Richer de Forges 1995).

According to the collection data on the specimen of *Lamoha hystrix*, new species, it was caught in a trap baited with mullet set in the afternoon and left for 24 hours between 305 to 366 metres. The colour in life was recorded as "rose-pink". The ecology and habits of the species is not known, but is probably similar to that of other Pacific *Lamoha* species (Guinot et al. 1995).

Etymology.—The species is named after the porcupine (*Hystrix*) because of its spiny carapace and legs. The name is used as a noun in apposition.

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