

A new crab species of the genus *Arcotheres* Manning, 1993, from Thailand (Crustacea, Brachyura, Pinnotheridae)

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ABSTRACT

Arcotheres guinotae n. sp., is described from a single female collected from an unspecified locality in Thailand. This species, as well as *A. similis* (Bürger, 1885), *A. spinidactylus* (Gordon, 1936) n. comb., *A. tivelae* (Gordon, 1936) n. comb., and *A. alcocki* (Rathbun, 1910) n. comb., constitute a subgroup within this genus which is distinguished by the dactylus of the third maxilliped not reaching the tip of its propodus and the dactylus of the fourth walking leg being longer than that of the third walking leg. *Arcotheres guinotae* n. sp. differs from all the above species in the acute and sinuous anterolateral margin, the fourth walking dactylus is longer than that of the third and setae on the ventral margin of the fourth walking dactylus are longer than those of its dorsal margin.

KEY WORDS

Crustacea,
Decapoda,
Brachyura,
Arcotheres guinotae n. sp.,
Thailand,
new species.

RÉSUMÉ

Une nouvelle espèce de crabe du genre *Arcotheres* Manning, 1993, de Thaïlande (Crustacea, Brachyura, Pinnotheridae).

Arcotheres guinotae n. sp., est décrite d'un seul spécimen femelle récolté dans une localité non spécifiée en Thaïlande. Cette espèce, ainsi que *A. similis* (Bürger, 1885), *A. spinidactylus* (Gordon, 1936) n. comb., *A. tivelae* (Gordon, 1936) n. comb. et *A. alcocki* (Rathbun, 1910) n. comb., constituent un sous-groupe dans ce genre qui se distingue en ce que le dactyle du troisième maxillipède n'atteint pas le bout de son propodus et le dactylus de la quatrième patte marcheuse est plus long que celui de la troisième. *Arcotheres guinotae* n. sp. diffère de toutes les espèces précédentes par sa marge antérolatérale de la carapace tranchante et sinueuse, le dactyle de la quatrième patte marcheuse plus long que la troisième et des soies sur la marge ventrale du dactyle de la quatrième patte marcheuse plus longues que celles de sa marge dorsale.

MOTS CLÉS

Crustacea,
Decapoda,
Brachyura,
Arcotheres guinotae n. sp.,
Thaïlande,
nouvelle espèce.

INTRODUCTION

The genus *Arcotheres* Manning, 1993, includes several Indo-West Pacific crabs symbiotic with bivalves. The genus is characterized by its subhexagonal carapace, dactyli of the walking legs (wl) three to four longer than those of wl1-2, and wl3 asymmetrical in length and shape. Recently Campos & Manning (in press) rediagnosed *Arcotheres*, corrected the authorship and date of publication for this genus and included within it the following species, all described by Bürger (1895): *A. arcophilus* (Bürger, 1895) (Ubay, Philippine Islands; Indonesia; Malaysia), *A. consors* (Bürger, 1895) (Palau Islands and Indonesia), *A. exiguus* (Bürger, 1895) (Samar Island, Philippine Islands), *A. latissimus* (Bürger, 1895) (Indo-Malayan Seas; Siglap, Singapore; Manila, Philippine Islands; Hakata Bay, Japan), *A. modiolicola* (Bürger, 1895) (southwest India; Singapore; Malaysia; Philippine Islands), *A. nudifrons* (Bürger, 1895) (Lapinig, Philippine Islands), *A. palaensis* (Bürger, 1895) (Palau Islands; Ubay and Burias, Philippine Islands; Indonesia; and Malaysia), *A. rhombifer* (Bürger, 1895) (Ubay, Philippine Islands), *A. rotundatus* (Bürger, 1895) (Burias, Philippine Islands), and *A. similis* (Bürger, 1895) (Singapore; Malaysia; Ubay, Philippine Islands; Cape Jaubert, Australia) (Schmitt *et al.* 1973). The study of an adult female collected by the late Raoul Serène and deposited in the Muséum national d'Histoire naturelle, Paris, France, showed that it was a new species that is herein described and illustrated. In addition, the analyses of published descriptions and illustrations of three other Indo-West Pacific species, *Pinnotheres spinidactylus* Gordon, 1936, *P. tivelae* Gordon, 1936, and *P. alcocki* Rathbun, 1910 (see Gordon 1936) led me to the conclusion that they should be excluded from *Pinnotheres* and included within *Arcotheres* as well.

ABBREVIATIONS

cw	carapace width;
cl	carapace length;
mxp3	third maxilliped;
wl	walking legs;
MNHN-B	Muséum national d'Histoire naturelle, Paris, Brachyura.

SYSTEMATICS

Family PINNOTHERIDAE De Haan, 1833
Subfamily PINNOTHERINAE De Haan, 1833

Genus *Arcotheres* Manning, 1993

TYPE SPECIES. — *Pinnotheres palaensis* Bürger, 1895, by designation by Rathbun (1918: 62).

HOSTS. — Mollusca, Bivalvia.

DISTRIBUTION. — Indo-West Pacific.

DIAGNOSIS. — (After Campos & Manning in press). Carapace subhexagonal, anterolateral margin acute, posterior margin concave. Mxp3 with ischium and merus indistinguishably fused; exopod with 3-segmented flagellum; palp 3-segmented; propodus longer than carpus; digitiform dactylus inserted medially on ventral margin of propodus, may extend or slightly overreaching apex of propodus. Wl3 asymmetrical in length, either left or right is longer. Dactyli of wl dissimilar, those of wl3-4 longer than wl1-2. Abdomen of six somites and telson well-separated in both sexes.

REMARKS

A morphological analysis of *Pinnotheres spinidactylus* Gordon, 1936 (Siglap, Singapore; Moreton Bay, Queensland, Australia), *P. tivelae* Gordon, 1936 (Muscat, Arabia) and *P. alcocki* Rathbun, 1910 (Mergui archipelago, Philippine Islands, and Indonesia) (see Gordon 1936) led me to believe that these species should be excluded from *Pinnotheres* Bosc, 1802 and included within *Arcotheres* instead. The features of these species agree well with the above diagnosis of *Arcotheres*. In particular, they have a subhexagonal carapace, acute anterolateral margins, wl3 asymmetrical and longer than the others, and the dactyli of wl dissimilar, those of wl3-4 being longer than those of wl1-2. The genus *Pinnotheres sensu stricto* in contrast, has a suborbicular carapace and wl2 asymmetrical and longer than the others (Manning 1993).

Arcotheres guinotae n. sp.
(Figs 1; 2)

TYPE MATERIAL. — 1 ♀, Thailand, cw 6.4 mm, cl 5.8 mm, in the bivalve *Barbatia* sp. Raoul Serène coll. (MNHN-B9498).

TYPE LOCALITY. — Thailand.

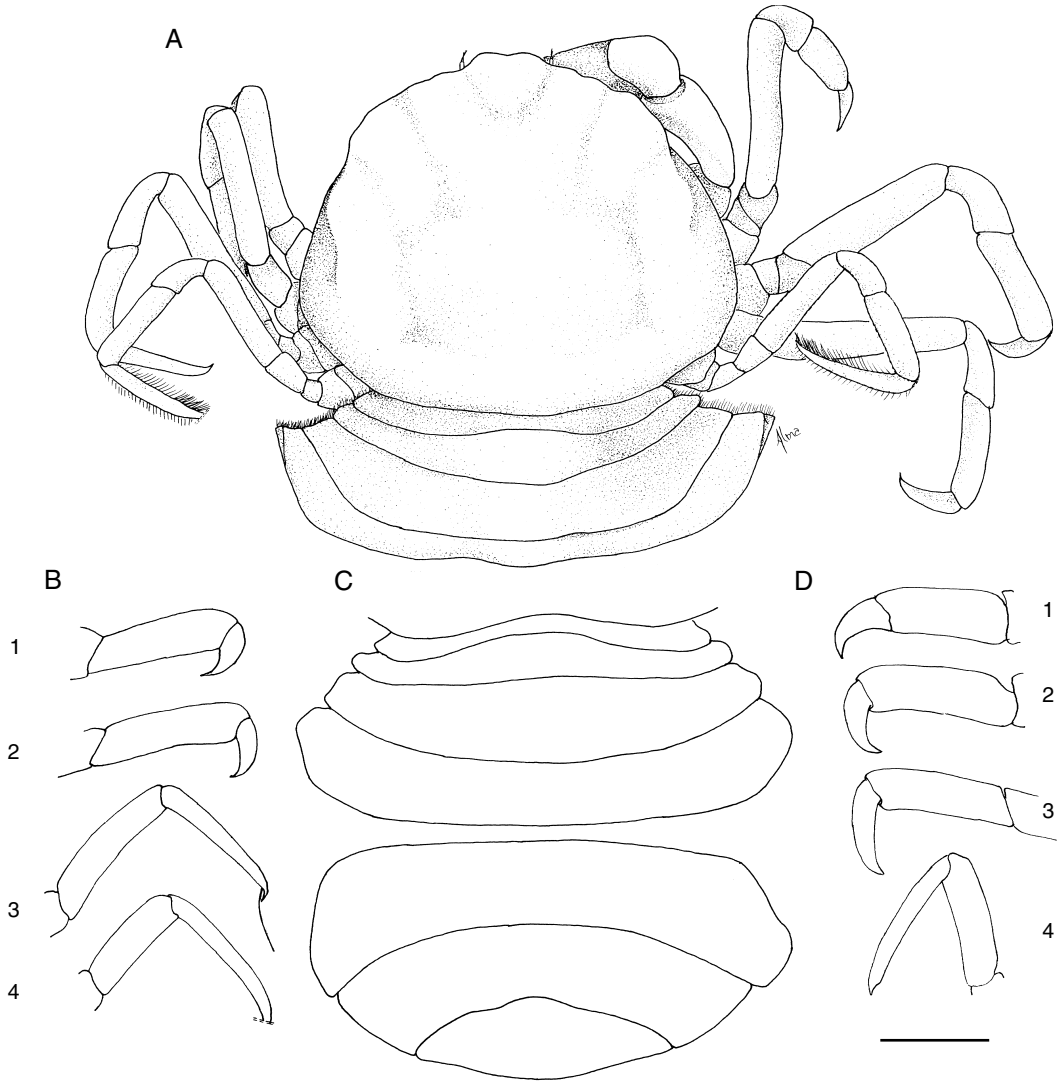


FIG. 1. — *Arcotheres guinotae* n. sp., holotype ♀, cw 6.4 mm, cl 5.8 mm; **A**, dorsal view; **B**, **D**, 1-4, inner view of left and right propodi and dactyli of wl respectively; **C**, abdomen. Scale bar: A, 1.74 mm; B, D, 1.16 mm; C, 1.52 mm.

ETYMOLOGY. — This species is named in honor of Madame Danièle Guinot, MNHN, for her contributions to brachyuran systematics and support of my pinnotherid studies.

DESCRIPTION

Carapace subhexagonal, regions moderately defined, sharp anterolateral margins produced distally; front little produced, slightly emarginate,

posterior margin slightly curved. Eyes pigmented, not visible dorsally, oval orbits with irregular margin. Antennules folded obliquely; antennular cavities little larger than orbits. Antennae of six segments, basal segment wide, with a prominent tubercle, distal segment setose, scarcely overreaching dorsal margin of oculo-antennular cavities. Epistome and labium separated, margin of first sternite emarginated.

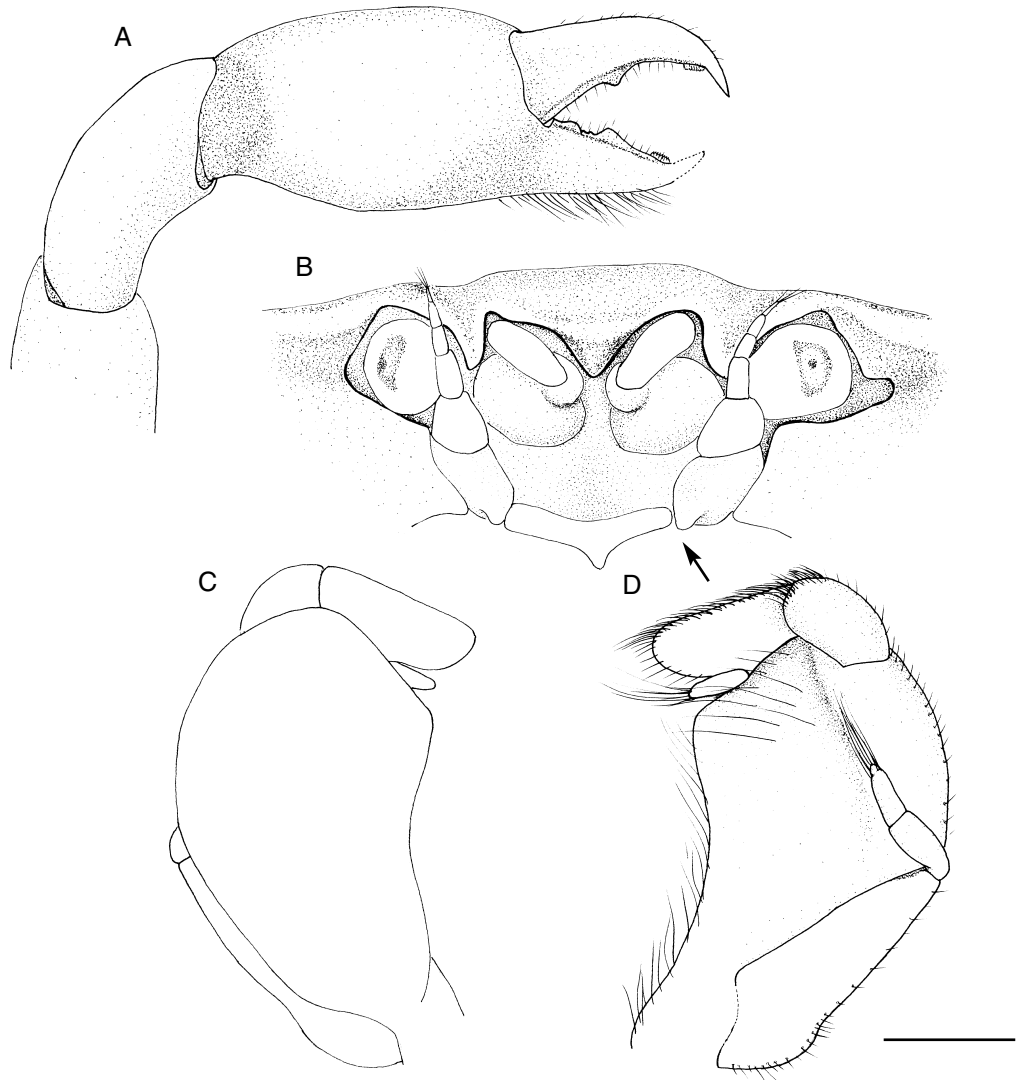


FIG. 2. — *Arcotheres guinotae* n. sp., holotype ♀, cw 6.4 mm, cl 5.8 mm; **A**, cheliped, inner view; **B**, frontal view; **C**, **D** outer and inner view of mxp3. Arrow indicates the antennal tubercle. Scale bar: A, 0.67 mm; B, 0.45 mm; C, D, 0.326 mm.

Mxp3 obliquely placed in buccal cavity, ischium and merus indistinguishably fused, dorsal margin wide, curved, with short setae; ventral margin forms an angle, with long, slender setae. Palp of three segments, carpus subtrapezoidal, dorso-lateral margin curved, spatulate propodus longer than carpus, obliquely sub-truncated, both segments with a dorsal fringe of setae; digitiform dactylus distally setose, inserted medially in a

notch on ventral margin of propodus, distally not overreaching tip of propodus and angle of ventral angle of merus. Exopod with a 3-segmented flagellum, minute distal segment inconspicuously articulated.

Chelipeds stouter than wl, merus slightly longer than trapezoidal carpus, chela globose, dorsal and ventral margin gently convex, outer surface of palm slightly convex, inner surface very convex;

pollex conical, cutting edge proximally with two broadly, triangular teeth, separated by a denticulate notch in which subtruncated tooth of curved dactylus fits; both fingers with a distal row of spiniform tubercles and setae.

W1 asymmetrical in length; those of left side longer; w1-2 similar in shape, w2 longer, margins from merus to propodus without setae, propodi longer than carpi, curved lengthwise, conical dactylus fits about three times in its respective propodus, curved at tip, margins with scattered setae; w3 markedly asymmetrical, with scattered setae on margins, shorter leg almost similar in shape and relative length to those segments of w1-2, longer leg relatively slender, carpus and propodus more curved, sword-shaped dactylus, which is as long as propodus, ends in a small, curved tip; w4 more slender than those of w1-3, segments similar to those of w3, but dactylus proportionally longer, curved; dactylus of w4 with more setae on margins, those of ventral margin longer than those of dorsal margin. Relative length of w1 3>2>1>4.

Abdomen extremely wide, with six somites and telson well-separated, margin with tomentum, length and width of abdominal somites increasing from somite 1 to 5, then diminishing towards telson.

REMARKS

Arcotheres guinotae n. sp., *A. similis* (Bürger, 1895), *A. spinidactylus* (Gordon, 1936) n. comb., *A. tivelae* (Gordon, 1936) n. comb., and *A. alcoccki* (Rathbun, 1910) n. comb. constitute a subgroup of species within the genus *Arcotheres* that can be recognized by the dactylus of mxp3 not reaching the tip of its propodus and the dactylus of w4 being longer than that of w3. *Arcotheres guinotae* n. sp. differs from *A. similis* and *A. spinidactylus* because setae on the ventral margin of the dactylus of w4 are longer than those of its dorsal margin, instead of short and subequal setae on the dorsal and ventral margin of the

dactylus of w4 which is observed in the later two species; and from *A. tivelae* and *A. alcoccki* due the dactylus of w4 in these species being shorter than its respective propodus instead of dactylus longer than propodus as observed in *A. guinotae* n. sp. In addition, the acute and sinuous anterolateral margin of the carapace in *A. guinotae* n. sp., is not observed in all other known congeners.

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