

Crustacea Decapoda: *Chelonika macrochela*, a new genus and new species of pandalid shrimp (Caridea) from New Caledonian waters

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ABSTRACT

A new genus and species of Pandalidae, *Chelonika macrochela*, is described and figured. The species was collected in New Caledonian waters, at a depth between 144 and 155 m.

RÉSUMÉ

Crustacea Decapoda : *Chelonika macrochela*, genre et espèce nouveaux appartenant à la famille des Pandalidae (Caridea) et provenant des eaux néo-calédoniennes.

Un genre et une espèce nouveaux d'une crevette appartenant à la famille des Pandalidae, *Chelonika macrochela*, sont décrits. L'espèce a été récoltée en Nouvelle-Calédonie, à une profondeur comprise entre 144 et 155 m.

INTRODUCTION

Among the caridean shrimp collected by the MUSORSTOM cruises in New Caledonian waters, one specimen of a pandalid shrimp with a large chela on the second pereopod was found. Such large chelae on the second pereopods are not known within the family Pandalidae. For this reason, a new genus is erected.

Genus *CHELONIKA* nov.

DEFINITION. — Rostrum long, slender, immovably connected to the carapace, with immovable dorsal and ventral teeth. Carapace without longitudinal carinae, with antennal spine and pterygostomial tooth. Abdomen with

pleura of first four somites rounded, pleura of fifth somite acutely pointed. Eyes well developed, pigmented, cornea broader than eyestalk; dorsal ocellus present. Posterior lobe of scaphognathite rounded. Second maxilliped with terminal segment wider than long. Third maxilliped with exopod. Epipods and arthrobranchs present on first four pairs of pereopods. First pair of pereopods without chelae; dactylus formed by a small, distal spine. Second pereopod with multiarticulate carpus; chela large. Ambulatory pereopods long and slender; dactyli with spines on flexor margin.

TYPE SPECIES. — *Chelonika macrochela* sp. nov., by monotypy.

ETYMOLOGY. — Combination of the greek word *chela*, meaning pincer, and the last part of the pandalid genus *Plesionika*. Gender : feminine.

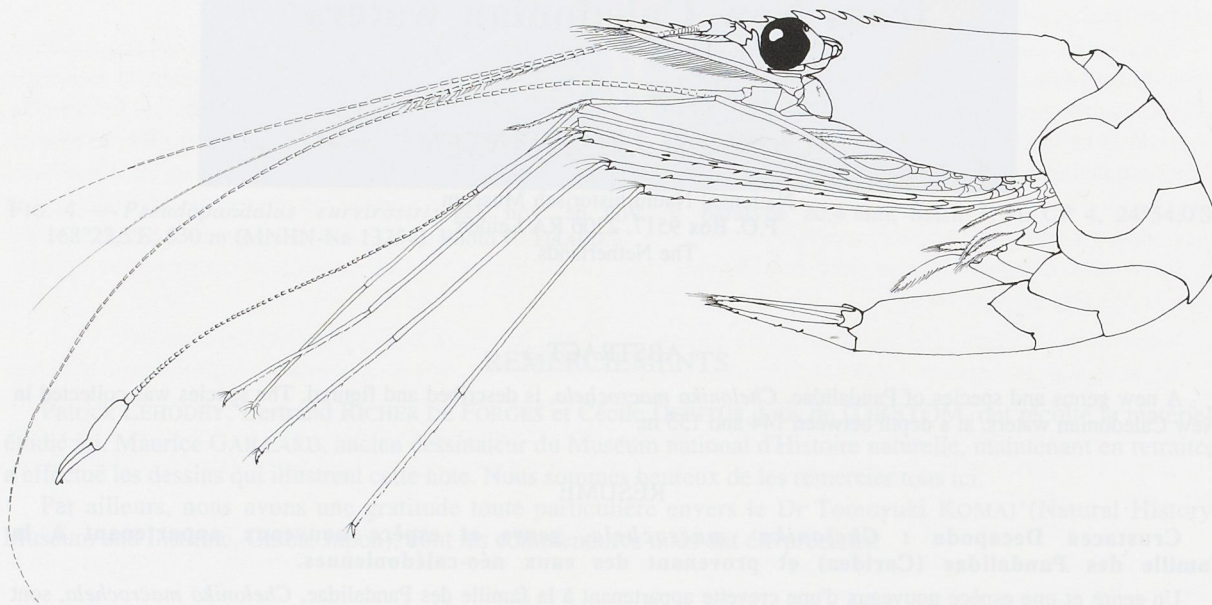


FIG. 1. — *Chelonika macrochela* sp. nov., holotype, ♀ cl. 7.3 mm, New Caledonia (MNHN-B 12966).

SYSTEMATIC POSITION. — The present specimen falls within the diagnosis of the family Pandalidae Haworth, 1825, given by CHACE (1985 : 9). At present, 19 genera are recognized (following CHACE's (1985) synonymy of *Parapandalus* with *Plesionika*) : *Anachlorocurtis* Hayashi, 1975; *Austropandalus* Holthuis, 1952; *Bitias* Fransen, 1990; *Chlorocurtis* Kemp, 1925; *Chlorotocella* Balss, 1914; *Chlorotocus* A. Milne Edwards, 1882; *Dichelopandalus* Caullery, 1896; *Dorodotes* Bate, 1888; *Heterocarpus* A. Milne Edwards, 1881; *Miropandalus* Bruce, 1983; *Notopandalus* Yaldwyn, 1960; *Pandalina* Calman, 1899; *Pandalopsis* Bate, 1888; *Pandalus* Leach, 1814; *Pantomus* A. Milne Edwards, 1883; *Peripandalus* de Man, 1917; *Plesionika* Bate, 1888; *Proctetes* Bate, 1888; and *Stylopandalus* Coutière, 1905. In HOLTHUIS' account of the recent caridean genera (HOLTHUIS, 1993 : 261-263), the present specimen keys out with the genus *Plesionika* Bate, 1888. CHRISTOFFERSON (1989) performed a manual cladistic analysis on 21 genera of the presumably monophyletic taxon Pandaloidae, which consists of both the families Pandalidae and Thalassocarididae Bate, 1888. CHRISTOFFERSON suspects the genus *Plesionika*, which comprises about 84 species, to be paraphyletic or polyphyletic. It could well be that *Chelonika* will turn out to be an ingroup of the '*Plesionika*' assemblage. More definite conclusions on the systematic position of *Chelonika* awaits a phylogenetic analysis of the '*Plesionika*' assemblage.

Almost certainly an apomorphic character in *Chelonika* is the presence of the extremely large chela in the second pereiopod. This character does not occur in any of the 19 genera of the family Pandalidae. The non-chelate form of first pereiopod does not occur in *Plesionika*. In *Plesionika* the dactylus is more developed, emerging subdistally to form a 'chela' with the distal tip of the propodus. Nor is the short squarish stylocerite known in *Plesionika*, most species of which have the stylocerite about as long as the basal segment of the antennular peduncle and the distal part acute.

Chelonika macrochela sp. nov.

Fig. 1-7

MATERIAL EXAMINED. — New Caledonia. BATHUS 2 : st. DW 753, 22°21.5'S 166°14.6'E; 144-155 m, 15.05. 1993, B. RICHER DE FORGES coll. : 1 ♀ cl. 7.3 mm (MNHN-B 12966).

TYPES. — The unique female is the holotype.

DESCRIPTION. — Rostrum slightly overreaching antennal scale, sabre-like, immovably connected to carapace; dorsal lamina slightly elevated proximally; 10 dorsal fixed teeth present; proximal 7 teeth evenly spaced, 3 proximal teeth postorbital; distal third of lamina with 3 small teeth. Ventral lamina with 5 small teeth in distal 2/5. Antennal spine robust. Pterygostomian tooth distinct.

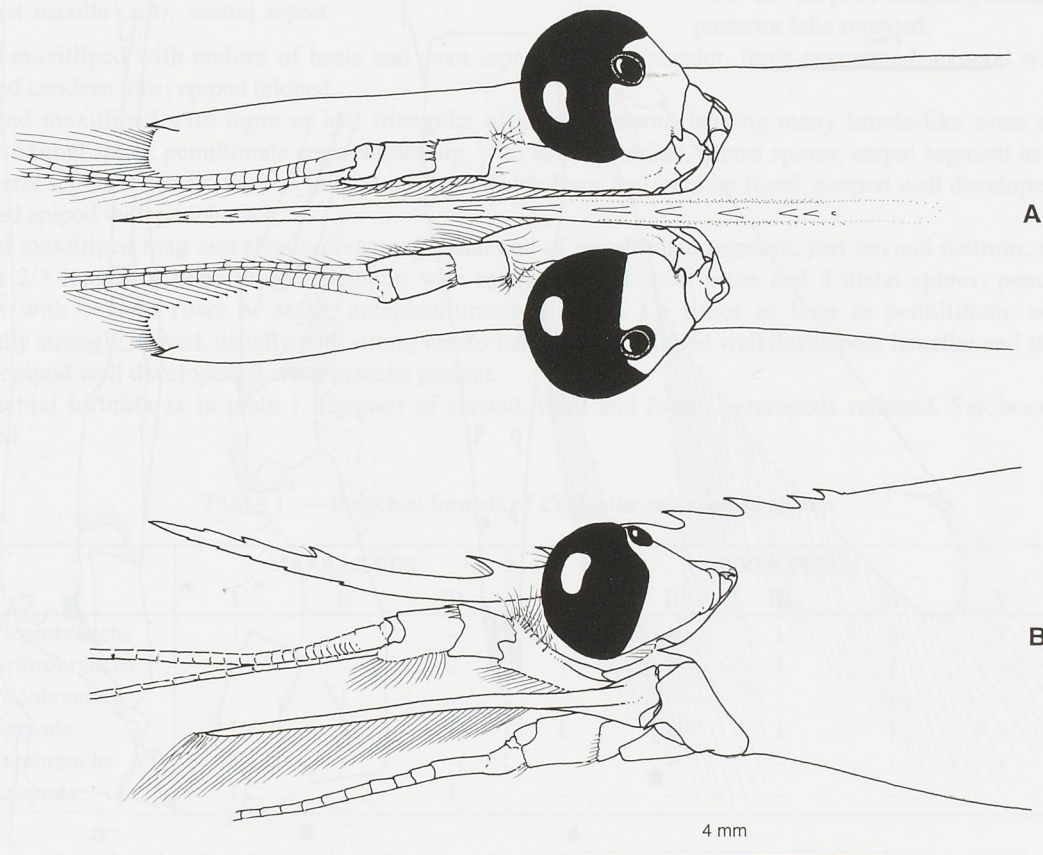


FIG. 2. — *Chelonika macrochela* sp. nov., holotype, ♀ cl. 7.3 mm, New Caledonia (MNHN-B 12966) : **A**, anterior region, dorsal aspect; **B**, anterior region, lateral aspect.

Abdomen with third somite rounded posteriorly, unarmed, without median carina. Pleura of anterior four somites rounded, fifth with sharp posteroventral tooth and slightly convex ventral margin. Sixth abdominal somite about 2.5 times as long as fifth. Telson about 0.8 times as long as sixth abdominal somite; with four pairs of dorsolateral spines; posterior margin of telson with three pairs of spines, lateral pair as long as dorsolateral spines, intermediate pair longest, median pair about half length of intermediate pair. Uropods as long as telson. Exopod with movable distolateral spine.

Tegumental scales not found.

Eye pyriform. Ocellus well developed.

Basal segment of antennular peduncle without ventromesial tooth. Stylocerite squarish, almost half as long as basal segment; distolateral angle acute; lateral margin slightly convex. Penultimate and ultimate segment slightly longer than wide; penultimate segment with 4-5 dorso-distal spines. Flagella long, slender and uniramous; basal third of outer flagellum with aesthetascs.

Scaphocerite twice as long as antennal peduncle, 5 times as long as median width; distolateral tooth reaching distal margin of lamina; lateral margin sinuous. Basal segment with strong distoventral tooth. Penultimate and ultimate segments each about twice as long as wide.

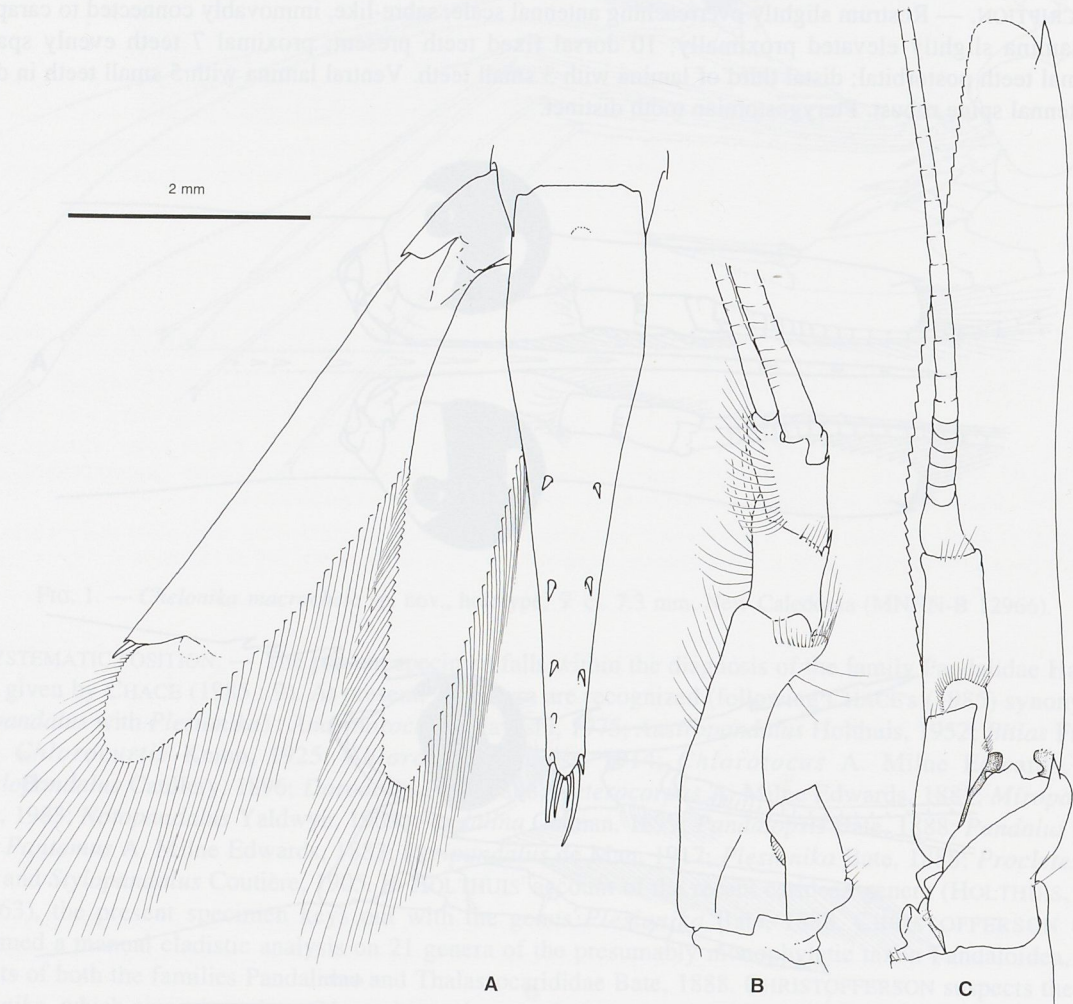


FIG. 3. — *Chelonika macrochela* new species, holotype, ♀ cl. 7.3 mm, New Caledonia (MNHN-B 12966) : A, caudal fan; B, antennular peduncle (left), ventral aspect; C, antennular peduncle (left), ventral aspect.

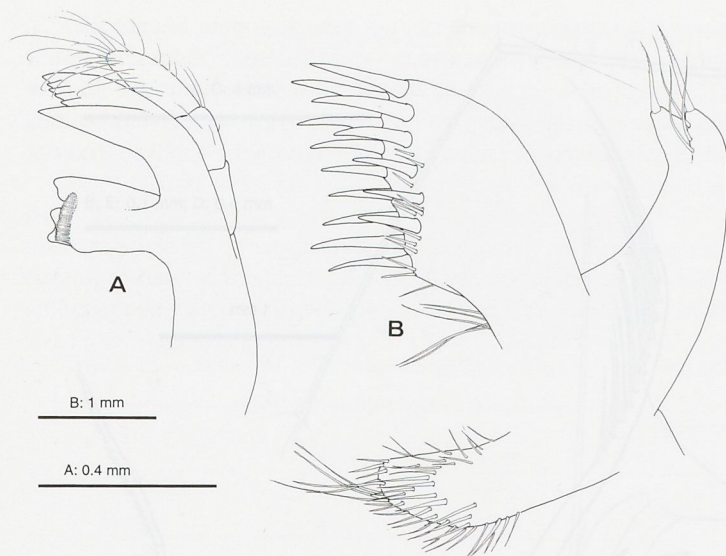


FIG. 4. — *Chelonika macrochela* sp. nov., holotype, ♀ cl. 7.3 mm, New Caledonia (MNHN-B 12966) : **A**, mandible (left), ventral aspect; **B**, first maxilla (left), ventral aspect.

First maxilliped with endites of basis and coxa separated; palp slender, three-segmented; exopod with well developed caridean lobe; epipod bilobed.

Second maxilliped with more or less triangular ultimate segment, bearing many bristle-like setae and one robust proximal spine; penultimate segment oblong, with row of median, robust spines; carpal segment as long as wide; meral segment nearly twice as long as its distal width; basis and ischium fused; exopod well developed; well-developed epipod with podobranch.

Third maxilliped long and slender, reaching distal end of penultimate segment, just beyond rostrum; ultimate segment $2/3$ length of penultimate segment, with many rows of short setae and 4 distal spines; penultimate segment with several rows of setae; antepenultimate segment 1.6 times as long as penultimate segment, proximally strongly curved, distally with strong ventro-lateral spine; exopod well developed; lamellar and strap-like parts of epipod well developed; 2 arthrobranches present.

Branchial formula as in table 1. Epipods of second, third and fourth pereopods reduced. Setobranchs not developed.

TABLE 1. — Branchial formula of *Chelonika macrochela* sp. nov.

	MAXILLIPEDS			PEREIOPODS				
	I	II	III	I	II	III	IV	V
Pleurobranchs	-	-	-	1	1	1	1	1
Arthrobranchs	-	-	2	1	1	1	1	-
Podobranchs	-	1	-	-	-	-	-	-
Epipods	1	1	1	1	1	1	1	-
Setobranchs	-	-	-	-	-	-	-	-
Exopods	1	1	1	-	-	-	-	-

First pereopods with tip of merus reaching just beyond rostrum, unarmed, not chelate; merus 3.5 times as long as ischium; carpus slightly shorter than merus; propodus 0.7 times as long as carpus, with setiferous cleaning organ on proximal part; dactylus very small, spiniform, surrounded by several groups of long setae.

Incisor process of left mandible with 6 teeth, right mandible with 5 teeth; ventralmost tooth much larger than others; molar process ends in 4 blunt teeth and an area with series of short setae. Mandibular palp three-segmented; basal segment slender; penultimate segment short, widening distally; ultimate segment almost twice as long as penultimate segment, with many long, slender setae.

First maxilla with lower and upper endites well developed; upper endite broad, with two rows of strong spines; lower endite distally rounded, with many simple setae; palp bilobed, with each lobe ending in one large seta.

Second maxilla with lower endite somewhat reduced; upper endite bilobed, of which upper lobe best developed; palp well developed; scaphognathite with posterior lobe rounded.

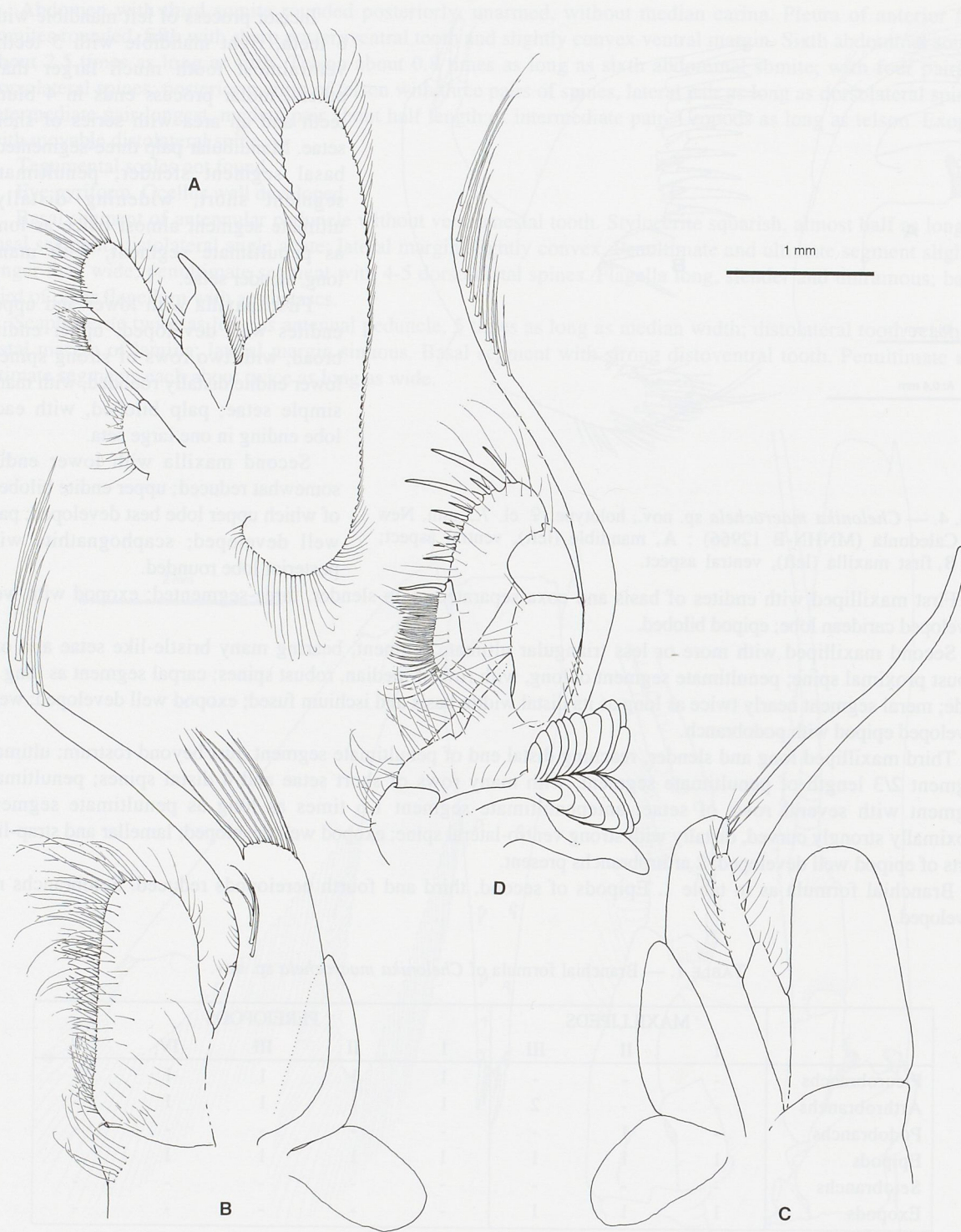


FIG. 5. — *Chelonika macrochela* sp. nov., holotype, ♀ cl. 7.3 mm, New Caledonia (MNHN-B 12966) : **A**, second maxilla (left), ventral aspect; **B**, first maxilliped (left), ventral aspect; **C**, first maxilliped (left), dorsal aspect (setae omitted except for palp); **D**, second maxilliped (left), ventral aspect.

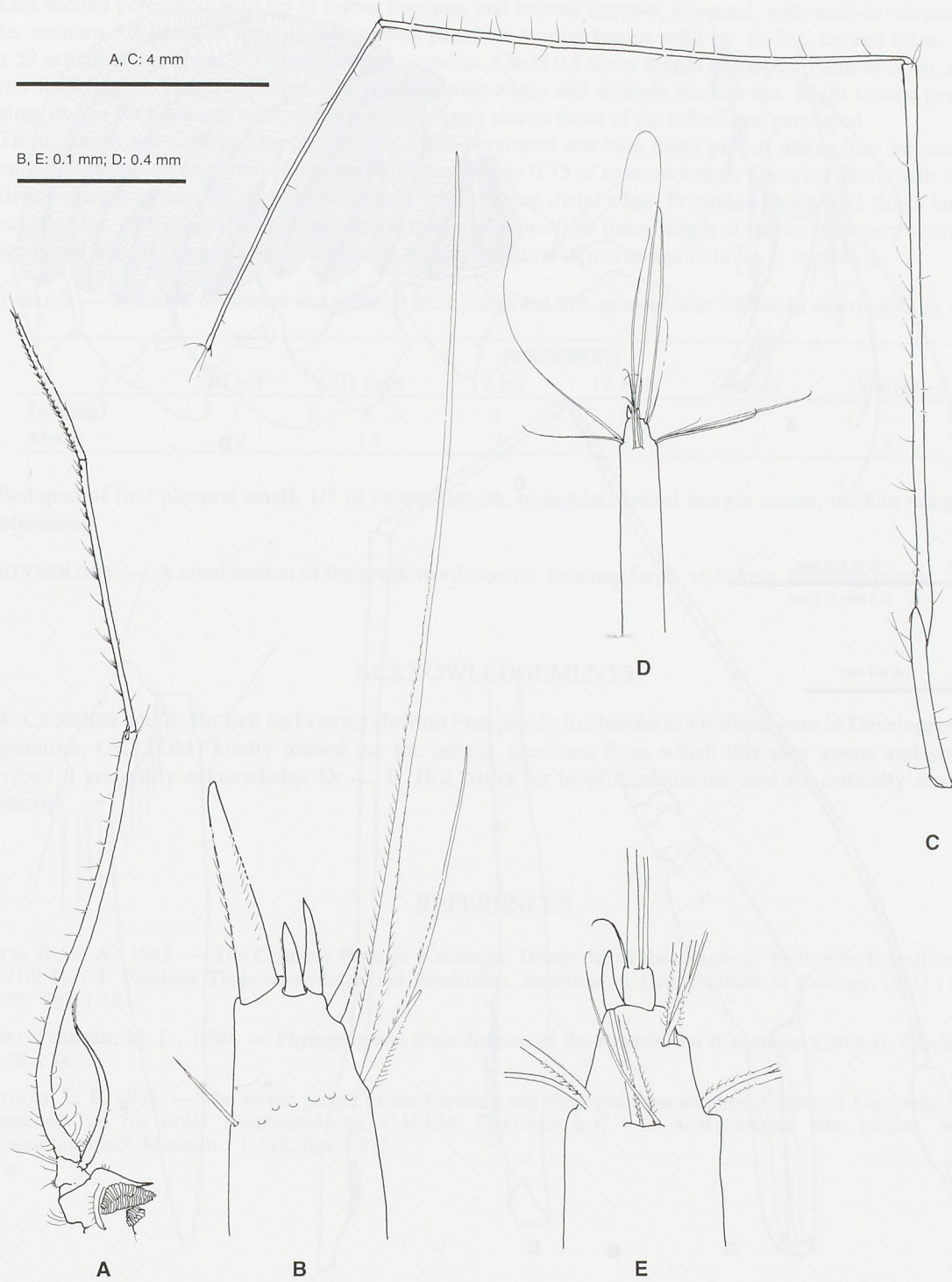


FIG. 6. — *Chelonika macrochela* sp. nov., holotype, ♀ cl. 7.3 mm, New Caledonia (MNHN-B 12966) : **A**, third maxilliped (left), ventral aspect; **B**, same, detail of tip; **C**, first pereiopod (left); **D-E**, same, detail of tip.

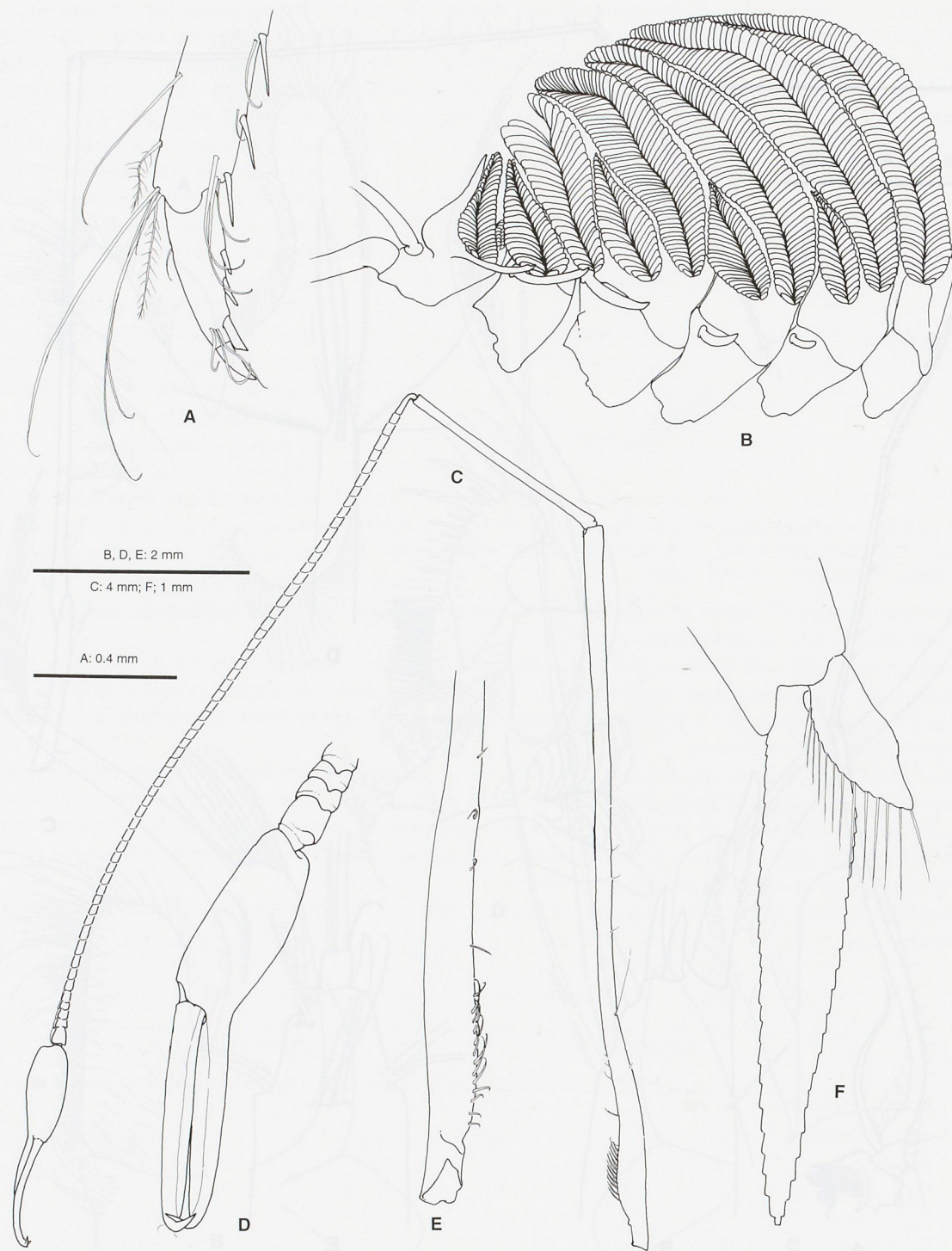


FIG. 7. — *Chelonika macrochela* sp. nov., holotype, ♀ cl. 7.3 mm, New Caledonia (MNHN-B 12966) : **A**, third pereiopod (left), dactylus; **B**, branchiae (left); **C**, second pereiopod (left); **D**, same, chela; **E**, same, basal part of basis-ischium, median aspect; **F**, first pleopod (left).

Left second pereopod with tip of merus reaching just beyond rostrum, unarmed, with well-developed, large chela; ischium 3.3 times as long as merus, with proximal ventral lamina with ca. 13 flat, curved setae. Carpus with 59 articulations, about 3.3 times as long as merus. Chela 0.3 times length of carpus. Palm swollen, slightly shorter than fingers. Fingers slender, with entire cutting edges and strongly hooked tips. Right second pereopod missing, except for basis and coxa which are of the same size as those of the left second pereopod.

Third, fourth and fifth pereopods similar. Third pereopod reaching distal part of merus, just beyond tip of rostrum, fourth falling just short of tip, and fifth reaching to 0.75 of rostrum length. Dactylus short, with 3 spines on flexor margin of carpus; distalmost robust, with oblique distal edge. Propodus about 0.62 times length of carpus, slender, with short spines along ventral margin. Carpus 0.80 times length of merus, with very short spines along ventral margin; merus with ventrolateral spines; spination of merus and ischium as in table 2.

TABLE 2. — Spination of ischium and merus of third, fourth and fifth pereopods of *Chelonika macrochela* sp. nov.

	PEREIOPODS					
	III left	III right	IV left	IV right	V left	V right
Ischium	1	1	1	1	-	-
Merus	12	13	7	9	7	5

Endopod of first pleopod small, 1/3 of exopod length, triangular; lateral margin setose, median margin with protuberance.

ETYMOLOGY. — A combination of the greek words *macro*, meaning large, and *chela*, meaning pincer.

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