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***Thaumastochelopsis wardi*, gen. et sp. nov.,
a New Blind Deep-Sea Lobster from the Coral Sea
(Crustacea : Decapoda : Nephropidea)**

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Abstract

The nephropid lobster family Thaumastochelidae has so far only been recorded from the Northern Hemisphere in the central Atlantic Ocean and in Japanese waters, where two species of *Thaumastocheles*, the only genus of the family, are known. The discovery of a new genus and species in the Coral Sea is the first occurrence in the Southern Hemisphere and provides additional knowledge of this little-known family. A modification of the diagnosis of the family is made to include the new genus, which has reduced but mobile eyes instead of obsolete fused eyestalks as in *Thaumastocheles*. The new lobster, *Thaumastochelopsis wardi*, gen. et sp. nov., was obtained from a depth of 452 m.

Introduction

In December 1985, the FVR 'Soela', of the Fisheries Research Division, CSIRO, carried out a survey of the benthic fauna of the Marian Plateau, off Townsville, Qld. During this survey two specimens of a nephropid lobster were obtained from one haul of a commercial prawn net. The specimens could not be placed in the only known genus of the family Thaumastochelidae. A new genus is designated and they are now described as new.

Systematics

Family **THAUMASTOCHELIDAE** Bate

Genus **Thaumastochelopsis**, gen. nov.

(Fig. 1)

Diagnosis

Rostrum dorso-ventrally flattened, with distolateral teeth. Carapace tuberculate, with postorbital, hepatic, antennal and pterygostomial spines; without carinae; postcervical, lower cervical, hepatic and antennal grooves present.

Abdomen depressed; dorsolateral carinae feebly developed, pleura short and wide, moderately spinulate, setose, sternite unarmed. Telson subquadrangular, unarmed.

Eyes present, small, mobile, with obsolete unpigmented cornea.

Antennule normally developed, with upper and lower flagella, numerous aethetascas present in male, few in female. Antenna robust, scaphocerite well developed, strongly dentate medially, flagellum well developed.

Epistome fused to carapace, with submedian distal spines and scattered spinules, posterior margin raised, denticulate.

Mandible robust, with 3-segmented palp, stout angulate molar process, with few small denticles proximally; maxillula with 2-segmented palp, broad upper lacinia, slender

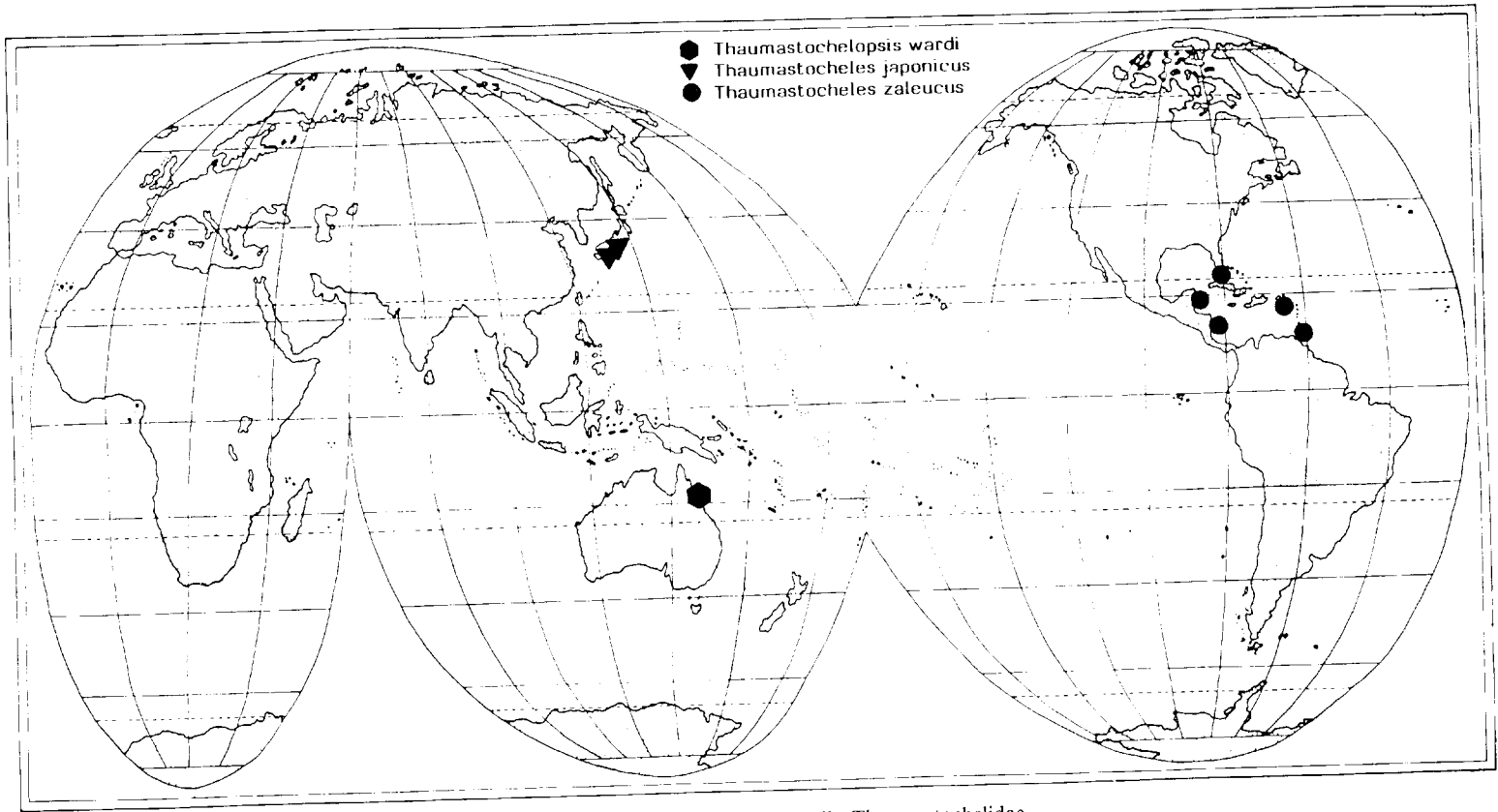


Fig. 1. The distribution of the family Thaumastocheilidae.

lower lacinia; maxilla with basal and coxal endites slender, bilobed, palp well developed, attenuated, scaphognathite well developed, anterior lobe slender, posterior lobe oval, elongate; 1st maxilliped with 2-segmented palp, basal endite elongate, coxal endite distinct, short exopod with stout peduncle and short, broad unsegmented setose flagellum, epipod large, elongate; 2nd maxilliped with endopod pediform, feeble, exopod rudimentary, coxa with triangular lateral plate; 3rd maxilliped with endopod pediform, well developed, ischium ventrally dentate, exopod rudimentary, epipod well developed.

Branchial formula as below:

	Mxp 1	Mxp 2	Mxp 3	P1	P2	P3	P4	P5
Pleurobranches	-	-	-	1	1	1	1	1
Arthrobranches	-	-	1	2	2	2	2	-
Podobranchs	-	-	R	1	1	1	1	-
Epipods	+	-	+	1	1	1	1	-
Exopods	+	R	R	-	-	-	-	-

(R = Rudimentary)

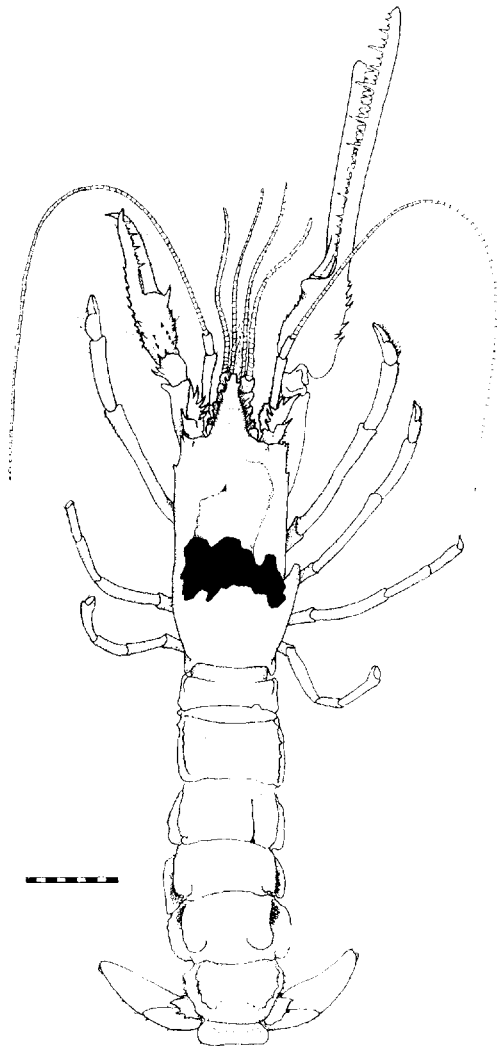


Fig. 2. *Thaumastochelopsis wardi*, holotype female, Marian Plateau, Coral Sea. Scale bar, 1 cm.

1st pereiopods well developed, markedly unequal, dissimilar. Major pereiopod with palm of chela swollen, globular, spinose, glabrous, fingers very elongate, compressed, narrow, uniform, very strongly dentate, teeth variable, carpus small, unarmed; merus and ischium fused, ventrally dentate, merus with distolateral tooth; coxa robust. Minor 1st pereiopod with palm elongate, compressed spinulate, setose; fingers longer than palm, slender, setose, strongly dentate. 2nd pereiopods chelate, chela small, chela and carpus densely setose, merus ventrally spinulate, with distodorsal tooth; ischium ventrally spinulate. 3rd chela similar to 2nd, smaller. 4th pereiopod non-chelate, feebly spinulate. 5th pereiopod chelate, female chela with reduced fixed finger; male chela with fingers subequal.

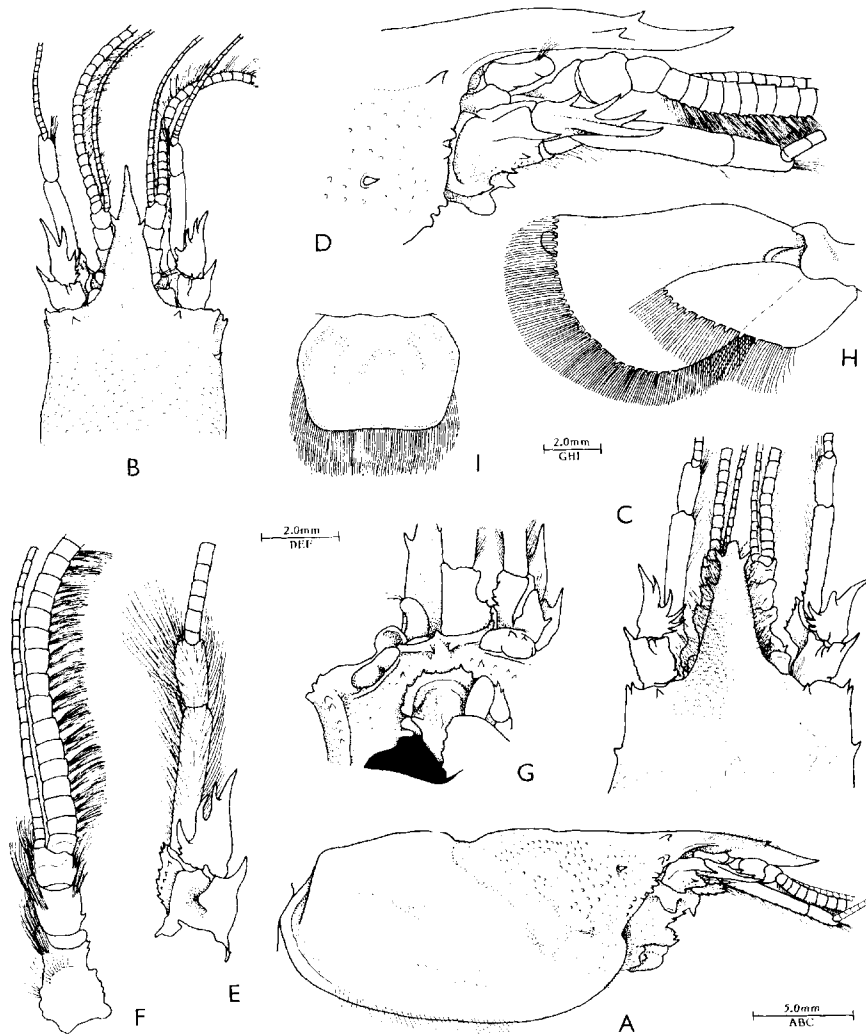


Fig. 3. *Thaumastochelopsis wardi*: A, carapace, epistome, antennal peduncles, lateral view; B, anterior carapace, rostrum, antennal peduncles, dorsal view; C, same as B; D, orbital region, lateral view; slightly oblique; E, antennule; F, antenna; G, epistomal region, right mandible and antennae removed; H, uropod; I, telson. AB, D-I, paratype male; C, holotype female.

Thelycum present between coxa of 4th and 5th pereiopods, with triangular median plate posteriorly and pair of smooth suboval plates anteriorly.

Female 1st pleopod reduced, uniramous. Posterior pleopods well developed, basiopodite broad, ramus broad, endopod without appendix interna. Male 1st pleopod 2-segmented, proximal segment slender, simple; distal segment pointed, curved, cannulate. Male 2nd

pleopod with basipodite robust, endopod with well developed appendix masculina, without appendix interna. Posterior pleopods similar, biramous, without appendices.

Uropod with short stout spinulate protopodite; exopod broad, bicarinate, with well marked diaeresis, posterior border of proximal portion denticulate, distal portion small, mobile, oval, lateral; endopod small, posterior border denticulate.

Type species. Thaumastochelopsis wardi, sp. nov.

Etymology. From *Thaumastocheles*, a generic name first used by Bate (1888) and the Greek, *opsis*, having the appearance of. Gender, feminine.

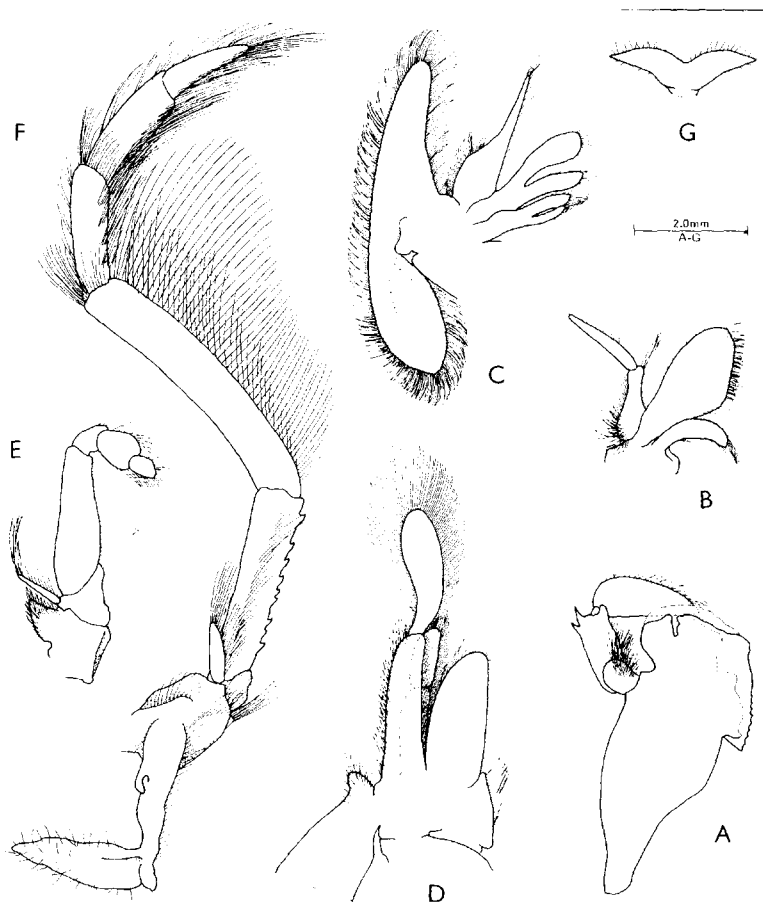


Fig. 4. *Thaumastochelopsis wardi*, paratype male: A, mandible; B, maxillula; C, maxilla; D, first maxilliped; E, second maxilliped; F, third maxilliped; G, paragnath.

Systematic Position of the Genus

Thaumastochelopsis, gen. nov.

Thaumastochelopsis is clearly closely related in all its major features to *Thaumastocheles* Bate, 1888, the only other genus of the unusual family of deep-sea lobsters, the Thaumastochelidae (Holthuis, 1974). It can immediately be distinguished from that genus by the presence of small reduced pigmentless eyestalks that are feebly mobile. In *Thaumastocheles* the eyestalks are even more reduced with complete loss of the corneal surface, and rigidly fused to the ophthalmic somite as two small bluntly pointed processes.

Several other differences between *Thaumastochelopsis* and *Thaumastocheles* may be noted. In *Thaumastocheles*, the exopods of the second and third maxilliped are well developed but in *Thaumastochelopsis* they are reduced to small scale-like rudiments. In *Thaumastochelopsis*, the third maxilliped has only a single small arthrobranch and an epipod without a functional podobranch. In *Thaumastocheles*, this appendage has two arthrobranches and the epipod has a well-developed podobranch. In *Thaumastochelopsis*

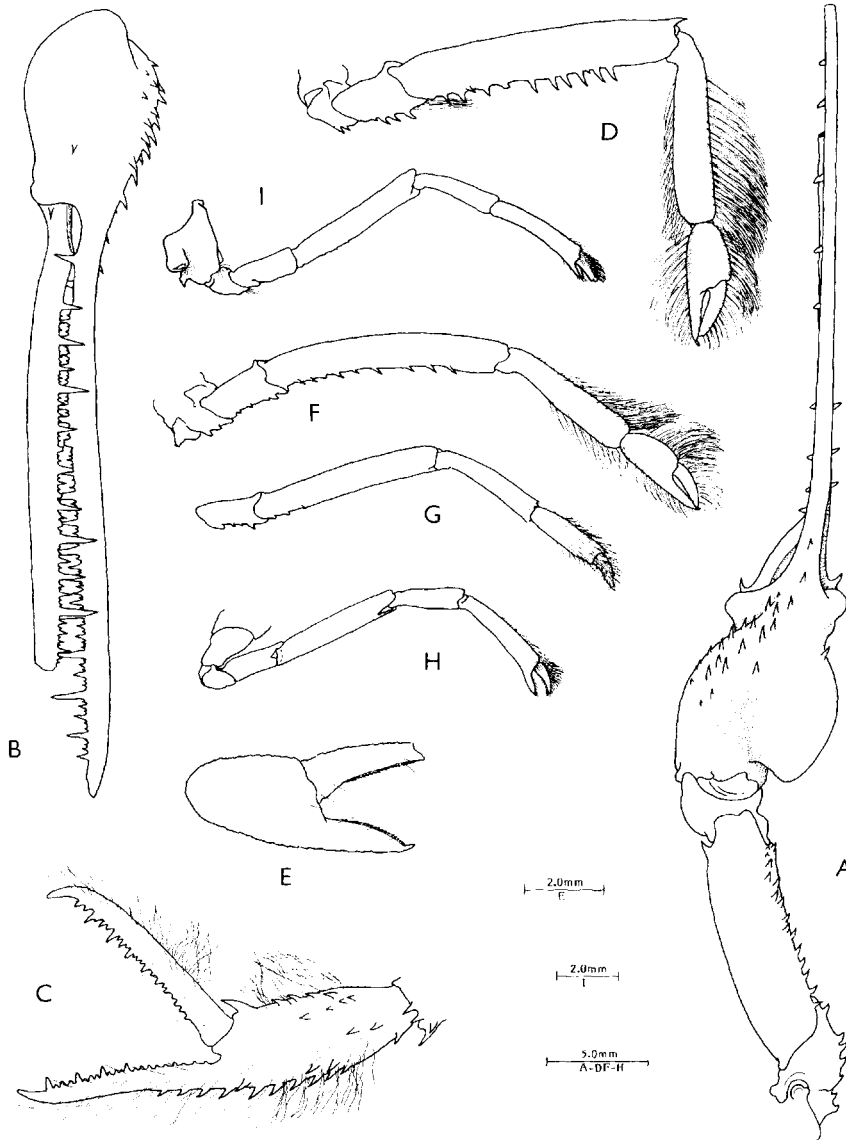


Fig. 5. *Thaumastochelopsis wardi*: A, major first pereiopod; B, chela of first major pereiopod; C, chela of minor second pereiopod; D, second pereiopod; E, same, chela; of second pereiopod; F, third pereiopod; G, fourth pereiopod; H, fifth pereiopod; I, same. A-H, holotype female; I, paratype male.

the exopod of the uropod has the portion beyond the diaeresis reduced to a small laterally situated mobile oval lobe. In *Thaumastocheles*, this lobe is broad, narrow, and rather rigidly attached.

The discovery of *Thaumastochelopsis* requires that the diagnosis of the family Thaumastochelidae must be modified for its inclusion. The first item in the key to the families and

subfamilies of the Nephropoidea provided by Holthuis (1974) can be conveniently modified to include *Thaumastochelopsis* as follows:

1. Eyes greatly reduced or absent, mobile or fused to ophthalmic somite. Scaphocerite with medial margin strongly dentate. Chelipeds very unequal, larger with fingers at least $3 \times$ length of palm, cutting edges with single or double row of long slender spines. 5th pereiopods chelate in both sexes. Abdominal pleura short, quadrangular or semioval, lateral margins broad, not acute. Telson unarmed *Thaumastocheloidae*

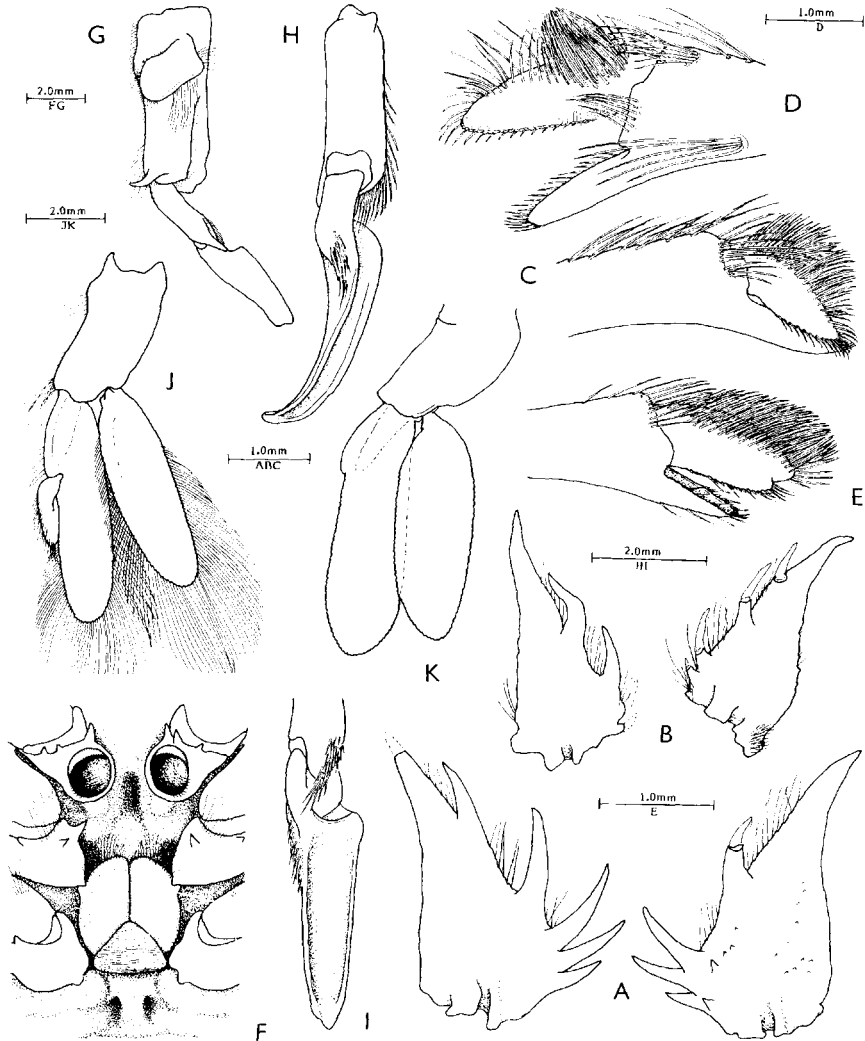


Fig. 6. *Thaumastochelopsis wardi*: A, B, scaphocerites, left and right; C, chela; of fifth pereiopod, lateral view; D, chela; of fifth pereiopod, medial view; E, fifth pereiopod, lateral view; F, thelycum; G, first abdominal somite and pleopod, lateral view; H, first pleopod, anterior view; I, first pleopod, medial view; J, second pleopod; K, third pleopod. B, E, G-K, paratype male; A, C, D, F, holotype female.

Thaumastochelopsis wardi, sp. nov.

(Figs 2-7)

Material Examined

1♂, 1♀, both damaged, FRV 'Soela', Cr. 0685, Stn 41, 59°05'00'S., 149°26'75'E., 425 m, 26.xi.1985, A. J. Bruce.

Description

Female. A small, slenderly built lobster, with dorsal carapace extensively damaged and without 3rd pereopod.

Rostrum triangular, with feeble median dorsal groove, *c.* 1.5 × longer than width at base, distinctly exceeding antennular peduncles, tapering to acute tip (extreme tip of rostrum missing), dorsally finely squamose and setose, with 2 acute dorsolateral teeth on left distally and 1 on right, feebly up-curved, ventral margin feebly convex, unarmed.

Carapace feebly tuberculate, most marked anterodorsally, with small postorbital teeth and slightly larger postantennal teeth (? articulated); orbital fossa obsolete, pterygostomial margin straight, with numerous blunt submarginal teeth; all other spines lacking; post-cervical groove well developed, dorsally broad, cervical groove distinct, hepatic groove present, antennal groove feebly developed; anterolateral angle broadly rounded, unarmed, setose, meeting pterygostomial margin at obtuse angle, non-carinate, ventral margin of branchiostegite smooth, setose, posterior margin strongly carinate.

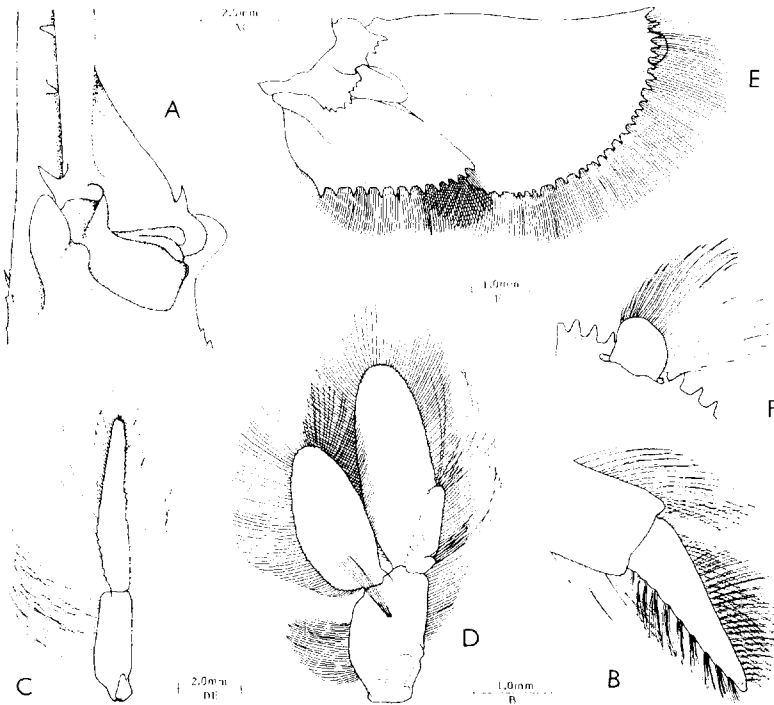


Fig. 7. *Thaumastochelopsis wardi*, holotype: *A*, dactylo-propodal joint of major chela; *B*, dactyl of fourth pereopod; *C*, first pleopod; *D*, second pleopod; *E*, uropod; *F*, posteroventral margin of uropod.

Abdomen with segments strongly depressed, sternites unarmed, tergites with feebly developed broad dorsolateral carinae, feebly tuberculate posteriorly, 4th and 5th laterally setose; pleuron of first segment reduced, 2nd to 4th rounded, 5th rounded and posteriorly spinulate, densely setose ventrally, 6th segment *c.* 1.4 × broader than long, dorsolateral carinae spinulate, pleuron feebly bilobed in dorsal view, anteriorly and posteriorly spinulate, posterior margin with small spinulations. Telson width subequal to 6th segment length, *c.* 1.5 × broader than long, dorsal surface with fine radiating ridges and feebly spinulate, posterior margin unarmed, densely setose.

Antennular peduncle reaching to level of distal dorsolateral rostral teeth, flagella equal to *c.* 0.9 of posterior carapace length, subequal, without conspicuous groups of aesthetascs, with numerous long setae.

Antenna with basicerite with strong distodorsal tooth, several small spines distoventrally; carapocerite exceeding tip of rostrum; flagellum c. $2.25 \times$ postorbital carapace length; scaphocerites well developed, with 4–5 slender spines along medial margin.

Eye with movable stalk, reaching to near distal margin of proximal segment of antennular peduncle, corneal region rounded, without pigment, fringed with setae dorsally.

1st pereopods markedly unequal and dissimilar. Major pereopod (right) exceeding antennular peduncle by entire chela; chela glabrous with palm ovoid, c. $1.4 \times$ longer than broad, dorsolateral surface acutely denticulate, otherwise smooth, with conspicuous rounded articular bosses at base of fixed finger; fixed finger over $3.0 \times$ longer than palm, extreme tip lacking, slender, strongly compressed, c. $22.0 \times$ longer than central width, with c. 16 long slender teeth distributed evenly along inner edge, separated by 3–5 irregularly sized smaller teeth; dactylus similar to fixed finger, with c. distal 4th missing, widely broadened proximally with small acute teeth immediately distal to hinge dorsally and ventrally; carpus short and stout, c. $1.4 \times$ broader than long, unarmed, c. 0.25 of palm length; ischomerus c. 0.3 of chela length, c. $3.7 \times$ longer than wide, subuniform, with single acute distodorsal tooth and numerous small acute teeth irregularly along ventral margin; basis short and stout, c. 0.45 of merus length, ventral margin dentate; coxa robust, unarmed. Minor pereopod exceeding antennular peduncle by carpus and chela; chela with numerous long silky setae, palm c. $2.4 \times$ longer than central width, tapered proximally, flattened, with large acute distomedial spine, medial margin with several acute teeth, lateral border more strongly dentate, with several scattered dorsal teeth; fingers subequal to palm length, compressed, feebly tapering with slightly curved tips, conspicuously crossing in closed fingers, c. $7.0 \times$ longer than proximal width, with cutting edges strongly dentate, with four larger teeth on distal $\frac{1}{2}$ and along proximal margin; carpus c. 0.18 of palm length, with conspicuous dorsal and ventral lateral teeth and 2 distodorsal teeth; proximal segments as in major chela but slightly less robust.

2nd pereopods subequal, chelate, extending beyond tip of rostrum by distal $\frac{1}{3}$ of carpus; chela strongly compressed, palm c. $1.5 \times$ longer than wide, widest distally; fingers compressed, c. 0.7 of palm length, with small hooked tips and finely denticulate cutting edges, ventral border of palm and fixed finger with numerous long setae, dorsal margins of palm and dactyl densely setose, most markedly on palm; carpus c. 1.6 chela length, c. $4.8 \times$ longer than width; slightly narrowed proximally, unarmed, sparsely setose ventrally and very densely setose along dorsal margin; merus c. $1.5 \times$ carpus length, glabrous, straight, subuniform, c. $6.0 \times$ longer than central width, with single strong distodorsal tooth, ventral border with c. 12 erect, acute teeth along proximal $\frac{3}{4}$; ischium c. 0.33 of meral length, robust, c. $1.8 \times$ longer than maximal width, dorsal margin unarmed, ventral border with group of long setae distally and 3–4 acute teeth along proximal $\frac{3}{4}$; coxa robust. 3rd pereopods more slender than 2nd, subequal, chelate; chela moderately compressed, c. $2.0 \times$ longer than distal width, fingers 0.66 of palm length; carpus c. 1.4 of chela length, c. $4.0 \times$ longer than distal width, both generally similar to 2nd pereopod; merus feebly bowed, c. $1.7 \times$ chela length, $7.0 \times$ longer than central width, c. 9–10 small acute teeth distributed along ventral margin, lacking distodorsal tooth; ischium 0.3 of meral length, robust, with 3–4 small acute ventral teeth or tubercles; basis stout, small acute tubercles ventrally; coxa normal, with conspicuous round opening of oviduct and three small teeth along distoventral margin. 4th pereopods smaller and more slender than $\frac{1}{3}$, subequal non-chelate; dactyl tapering, straight, densely setose, c. 2.5 longer than proximal width; propod c. $3.5 \times$ longer than wide, uniform, generally setose, $2.0 \times$ dactylar length; carpus c. $1.45 \times$ propod length, c. $4.5 \times$ longer than distal width, slightly tapering proximally, unarmed; merus c. 1.75 of propod length, $7.0 \times$ longer than width, subuniform, with 2–3 small acute tubercles proximoventrally; ischium c. 0.35 of meral length, feebly denticulate ventrally; basis stout, coxa robust, 1–2 ventromedial teeth. 5th pereopods small, slender, subequal, chelate; palm subcylindrical, slightly compressed distally, c. $4.5 \times$ longer than distal width, feebly tapering proximally, dactyl broad, feebly subspatulate, cutting edge finely denticulate with stiff marginal setae, dorsal surface densely setose, c. $3.0 \times$ longer than broad and 0.33 of palm length, fixed finger similar, smaller, more feebly developed and sparsely setose; carpus c. 0.66 of palm length, $3.0 \times$ longer than distal width, unarmed; merus $2.0 \times$ carpus

length, uniform, unarmed, *c.* $5.5 \times$ longer than central width; ischium $\frac{1}{2}$ meral length, unarmed; basis and coxa unarmed, without special features.

1st pleopod small and slender, uniramous, basipodite *c.* $2.8 \times$ longer than broad proximally, slightly compressed and distally tapering, with numerous long setae laterally, exopod *c.* $1.6 \times$ basipodite length, *c.* $5.3 \times$ longer than wide, proximal $\frac{1}{2}$ broadening distally, with numerous sparse long simple setae medially and laterally, distal $\frac{1}{2}$ tapering densely, bordered by short plumose setae. 2nd pleopod well developed, biramous; basipodite $2.0 \times$ longer than broad, densely bordered medially and laterally by short setae, with tuft of longer setae on distodorsal and ventral surface; exopod *c.* $1.2 \times$ basipodite length, *c.* $2.0 \times$ longer than broad, margins densely setose; endopod *c.* $1.6 \times$ basipodite length, *c.* $2.8 \times$ longer than broad, margins densely setose with tufts of long setae arising from proximal and central medial margin. Posterior pleopods similar.

Uropod with short stout protopodite, posterolateral angle acute, dorsal margin with numerous small acute teeth; exopod large, broad, *c.* $1.7 \times$ longer than broad, 2-segmented, lateral margin robust with small acute distolateral tooth, medial margin semicircular, with *c.* 30 small acute teeth, and dense fringe of long setae submarginal ventrally, dorsal surface with distinct central carina, distal segment small, rounded, mobile, *c.* as long as wide, with long setae marginally, inserted ventrally below submarginal setal row; endopod short, not reaching $\frac{1}{2}$ length of exopod, *c.* 0.75 of exopod length, $2.5 \times$ longer than wide, lateral border convex, glabrous, medial margin feebly convex, with *c.* 12–13 small acute teeth and setae, as in exopod, dorsal surface with feeble central carina.

Male. Generally similar to female. Rostrum with 1 pair of distal dorsolateral teeth only. Carapace generally more strongly setose and tuberculate. Cervical groove well developed, unarmed, with coarser branchiostegal areolations, anterolateral margin of branchiostegite less spinulate (spinulations possibly lost during capture).

Abdomen as in female, but dorsolateral carina of 1st segment with strong anterolateral spine and several smaller spines posteriorly, sternite of 1st segment with strong recurved tooth lateral to origin of pleopod, ventral margins of pleura with spines most marked on 2nd and 3rd segments, 6th segment with spinulations feebly developed, very feeble on posterior margin. Telson *c.* $1.3 \times$ wider than long, posterior margin feebly concave.

Antennule with upper ramus stout, with numerous dense groups of aethetascus, lower flagellum subequal, slender. Antenna with basicerite strongly armed distolaterally, scaphocerites with 4 slender teeth medially. Eye as in female.

Mouthparts dissected on right side only. Mandible with robust corpus; molar process expanded, cupped, lateral and ventral edges angled with small process at junction, entire and feebly denticulate respectively; palp well developed, 3-segmented, proximal segment short and stout, with patch of long setae laterally, intermediate segment longer, glabrous, with 2 small acute distolateral teeth, terminal segment elongated, suboval, tapering, $2.5 \times$ longer than proximal width, lateral margin strongly setose. Maxillula with 2-segmented palp, proximal segment moderately robust, tapered distally, densely setose laterally, sparsely setose medially, *c.* $2.5 \times$ longer than proximal width, distal segment slender, flattened, slightly tapered distally, sparsely setose, *c.* $6.0 \times$ longer than wide proximally, subequal to proximal segment length; upper lacinia broadly expanded, medial margin straight with numerous small spines and moderately setose; lower lacinia small, subcylindrical, curved, sparsely setose with few distal spines. Maxilla with elongate palp, broadly expanded proximally, with densely setose lateral margin and slender tapering distal portion feebly setose along straight medial border, *c.* $3.2 \times$ longer than proximal width; basal and coxal endites both deeply bilobed with elongate lobes with finely setose medial ends, basal lobes larger than coxal, distal lobes larger than proximal; scaphognathite well developed, narrow, *c.* $3.6 \times$ longer than wide, anterior lobe slender, tapering, posterior lobe suboval. 1st maxilliped with 2-segmented endopod, distal segment *c.* $2.3 \times$ longer than wide, $1.3 \times$ longer than proximal width, distal and medial margins densely setose; basal endite elongate, slightly shorter than palp, *c.* $2.3 \times$ longer than wide, medial border straight, distal and medial margins sparsely setose; coxal endite well developed, simple, medially truncate with sparse long setae; exopod with stout, densely setose proximal segment extending almost to distal border of palp, very densely setose over lateral surface, with fringe of short setae medially, distal segment leaf-

like, *c.* $3.2 \times$ longer than central width, with dense fringe of long setae round all margins; epipod well developed, elongate, tapering distally, sparsely setose and without podobranch. 2nd maxilliped small, pediform; endopod 4-segmented, ischiomerus fused, flattened, *c.* $3.1 \times$ longer than wide, tapering distally, unarmed, sparsely provided with setae along medial margin; carpus short and stout, unarmed, *c.* 0.27 of ischiomerus length; propod expanded, suboval, *c.* $1.25 \times$ longer than wide, *c.* 0.29 of ischiomerus length; dactylus *c.* 0.6 of propod length, $1.6 \times$ longer than broad, suboval, tapering slightly distally, setose; basis robust, with elongate, sparsely setose medial margin and short lateral margin bearing rudimentary exopod consisting of short slender ramus, *c.* $6.5 \times$ longer than proximal width, sparsely setose, tapering, lacking flagellum, with group of long setae distally; coxa stout, medially excavate, with triangular densely setose lateral plate. 3rd maxilliped with endopod moderately slender, pediform, extending to tip of rostrum, dactyl *c.* $3.3 \times$ longer than proximal width, tapering, densely setose ventrally, propod *c.* $1.2 \times$ dactyl length, $2.6 \times$ longer than wide, uniform, densely setose ventrally, carpus *c.* $1.1 \times$ propod length, $3.3 \times$ longer than central width, groups of long setae ventrally, merus *c.* $2.4 \times$ carpus length, $5.8 \times$ longer than central width, ventral margin with double row of setae, medial row setae very long, ischium *c.* $1.35 \times$ meral length, $3.4 \times$ longer than distal width, slightly tapered proximally, ventral margin with 9–10 small acute teeth, lateral aspect with row of fine setae, basis short and stout with short, rudimentary exopod without flagellum, *c.* 0.3 of ischium length, $3.5 \times$ longer than broad, tapering distally with ventral margin setose; coxa robust, lateral aspect with pedunculate epipod, peduncle with small dorsal process, lamina foliaceous, elongated, distally tapered, sparsely setose, with small accessory lobe proximally. Paragnath with slender, tapering, acutely pointed sparsely setose lobes.

Chelae of both 1st pereopods lacking. 2nd to 4th pereopods similar to female but slightly more slender. 5th pereopod chelate, palm of chela *c.* $6.0 \times$ longer than central width, subcylindrical, slightly broadened distally, dactyl *c.* 0.33 of palm length, broad, subspatulate with dorsal surface extending beyond tip and densely setose, fixed fingers short, *c.* 6.5 dactyl length, margins of fingers minutely denticulate; coxa with ventral tooth and conspicuous round, genital opening.

1st pleopod with 2 rigidly fused segments forming copulatory organ; proximal segment *c.* $3.3 \times$ longer than wide, slightly flattened, with row of distomedial setae; distal segment *c.* $1.3 \times$ length of proximal segment, obliquely articulated to anterodistal aspect, tapering to distal point, strongly cannulate medially, proximally swollen in anterior aspect with zone of short spines. 2nd pleopod with broad basipodite, *c.* $2.0 \times$ longer than wide, endopod *c.* $4.0 \times$ longer than proximal width, $1.5 \times$ basipodite length, densely setose, with well-developed appendix masculina at 0.33 of medial border length, appendix masculina corpus *c.* 0.3 of endopod length, $3.0 \times$ longer than wide, densely spinulate along medial and distal margins, endopod *c.* 0.9 of exopod length, $3.5 \times$ longer than wide. 3rd pleopod generally similar, rami slightly broader, endopod without appendix masculina or interna. 4th and 5th pleopods similar.

Uropods similar to female.

Types

The female specimen is selected as the holotype and the male designated as allotype. Both specimens are deposited in the collection of the Northern Territory Museum, catalogue number NTM Cr. 004231, A, B respectively.

Measurements

Female. Total length (approx.) 76.5 mm; carapace and rostrum, 33.0 mm; postorbital carapace, 24.5 mm; major chela 41.5 mm; minor chela, 21.0 mm.

Male. Total length, 57.0 mm; carapace and rostrum, 25.5 mm; postorbital carapace length, 18.5 mm.

Coloration. Uniform pale yellowish-white.

Etymology. The new species is named in honour of Dr Trevor Ward, cruise leader for the FVR 'Soela' when the specimens were obtained.

Discussion

The occurrence of *Thaumastochelopsis wardi* at a depth of 452 m is comparable with the bathymetric range of *Thaumastocheles japonicus* Calman in Japanese waters, where it has been reported in depths of 365–800 m (Doflein 1906; Rathbun 1910; Calman 1913; Baba *et al.* 1986). The Caribbean *Thaumastocheles zaleucus* Bate has been reported in deep water, at 640–1054 m by Holthuis (1974).

The distributions of the three known species of the family Thaumastochelidae appears to be extremely limited and widely separated, with *T. zaleucus* restricted to the Caribbean region, *T. japonicus* to southern Japan and now, *T. wardi* to the Coral Sea. The larvae of the family Thaumastochelidae are unknown. Females of *T. japonicus* were examined by Rathbun (1910) and Calman (1913), but these were apparently non-ovigerous, so that the size of the ovum is unknown. The openings of the oviducts on the third pereopod coxa are particularly conspicuous and of considerable diameter in *T. wardi*, about 1.5 mm. This suggests that the ova may be large and give rise to larvae with abbreviated development and lacking a planktonic phase, as in, for example, *Metanephops* spp., which might provide a part of the explanation for the limited distributions of the known species.

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Addendum

The occurrence of *T. wardi* does not represent the first record of the family Thaumastochelidae in the southern hemisphere as stated above. Monod (1973) reported the occurrence of *Thaumastocheles japonicus* from 800 m, off New Caledonia, on the basis of a single major first pereopod. The report is recorded in the author index of the *Zoological Record* 110(10), 52, but the species is not listed in the systematic index.

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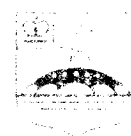
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