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A new species of *Thor* Kingsley, 1878 (Crustacea: Decapoda: Caridea: Hippolytidae) from the tropical eastern Pacific

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Abstract.—A new caridean shrimp, *Thor cocoensis*, from the eastern Pacific, is described based on specimens from from Isla del Coco, Costa Rica and Islas Marchena and Santa Fé, Galápagos. This very small shrimp resembles *T. cordelli* Wicksten, but lacks a supraorbital spine and has one or two, not three, dorsal spines on the rostrum. There are three or four pairs of dorsolateral spines on the telson and one meral spine each on the third and fourth pereopods. The species is subtidal and is not known to have specific associations with other organisms.

While examining specimens of carideans taken in Costa Rica, we discovered a species of *Thor* Kingsley, 1878 that could not be identified as any known species. We compared the specimens with older material from the Galápagos Islands among the collections of the National Museum of Natural History (USNM) and Natural History Museum of Los Angeles County (LACM), and found eight additional specimens of this new species, described herein. Carapace lengths (CL) are given in millimeters. The holotype and some paratypes are deposited in the collections of the University of Costa Rica (UCR). We thank Michael Hodnett, Texas A&M University, and Richard Heard, Gulf Coast Research Laboratory, for assisting us in preparing the illustrations.

Thor cocoensis, new species
Figs. 1–4

Material.—Holotype female, ovigerous, CL 2.3. Bajo Alcyone, Isla del Coco, Costa Rica (Pacific), 35 m, 2 Apr 1992, UCR 1760-02. Paratypes: female, ov. CL 2.6, female, ov., CL 2.2, female, ov., CL 1.7, female, ov., CL 2.4, same data as holotype, UCR 1760-02. Female, ov., CL 1.6, Isla Santa Fé, Galápagos, 7–18 m, rock, 2 Feb 1933, *Velero III* sta. 46-33, USNM 260979. Male, CL 1.2, female, CL 1.0, female, CL 1.1, female, CL 1.2. Isla Santa Fé, Galápagos, 4 m, 2 Feb 1933, *Velero III* sta. 47-33, USNM 260980. Female, ov., CL 1.8, female, CL 1.1, SW side of Marchena Island, Galapágos, near mouth of tide pool; sand, rock and rubble, 17–26 m, 19 May 1984, LACM sta. GAL-84-36, CR19845158.

Description.—Small, stout-bodied hippolytid shrimp. Rostrum shorter than eyes or first segment of antennular peduncle, apex acute, with 1or 2 dorsal teeth, and unarmed or with 1 ventral tooth. Carapace without supraorbital spine, weak ridge in area of supraorbital spine; antennal spine prominent (Figs. 2A, B).

Abdominal somites smooth. Second with broad pleura; third with posterior margin produced dorsally in adult female. Fourth and fifth abdominal pleura with posteroventral margin acutely pointed, sixth with posterior ventral and lateral angles pointed (Fig. 1). Telson with 3 or 4 pairs dorsolat-

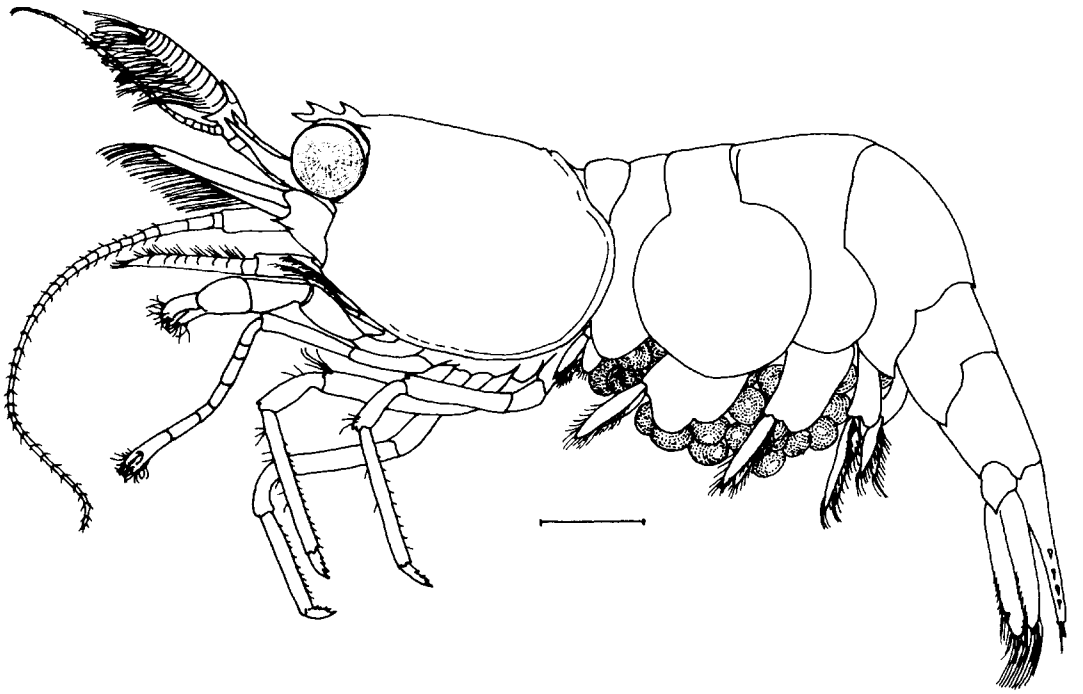

Fig. 1. *Thor cocoensis,* new species. Paratype female UCR-1760-02. Scale = 1 mm.

eral spines; posterior margin with 3 pairs spines, outer the shortest, next longest, mesial spines intermediate in length. Telson longer than uropods (Fig. 2C).

Eyes very large, pigmented.

Stylocerite acute, longer than first segment of antennular peduncle, with spine at base. First segment of antennular peduncle broad, with tooth on mesial surface; second segment short, with prominent lateral spine; third segment short. Upper antennular flagellum with stout proximal portion with dense sensory setae, ending in short lash. Lower flagellum slender, whip-like (Fig. 1).

Basicerite with small ventrolateral tooth. Carpocerite short, overreaching first segment of antennular peduncle. Scaphocerite longer than antennular peduncle, broad, rounded distally, blade of scaphocerite longer than its spine (Fig. 1).

Mandible without palp. Molar process stout, ending in spines; incisor process with 5 low spinules (Fig. 3A). First maxilla with bilobed palp, ending in long setae; upper lacinia broad, ending in row of stiff spines; lower lacinia slender, curved, ending in long setae (Fig. 3B). Second maxilla with short palp bearing terminal seta, distal endite deeply lobed, proximal endite small, scaphognathite 3 times as long as broad, anterior lobe large and rounded, posterior lobe small (Fig. 3C). First maxilliped with robust, 2-segmented palp; basal endite broad, with setose medial margin; coxal endite broad, sparsely setose; exopod with flagellum well developed; caridean lobe reduced to knob; epipod large and bilobed (Fig. 3D). Second maxilliped with distal segment narrow and set with brush of stiff setae; propodus broad, twice length of ultimate segment, with long setae; flagellum well developed; epipod triangular with small podobranch (Fig. 3E). Third maxilliped setose, extending beyond antennular peduncle when extended; with rounded epipod; exopod reaching past middle of antepenulti-

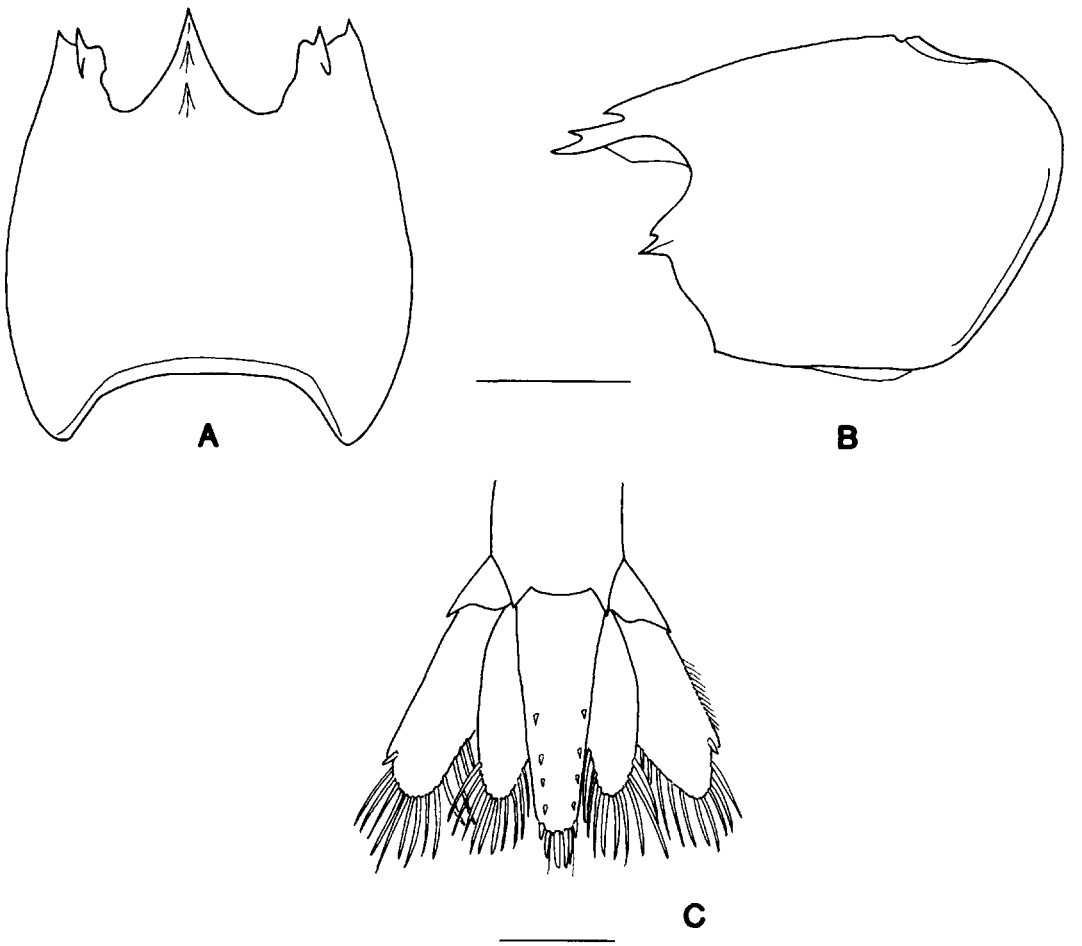

Fig. 2. *Thor cocoensis*, new species. Paratype female UCR-1760-02. A, carapace, dorsal view. B, carapace, lateral view. C, telson and uropods, dorsal view. Scale = 1 mm.

mate segment; antepenultimate segment longest, convex along lower surface, with distodorsal tooth and small distolateral spine; penultimate segment shortest; terminal segment setose, ending in sharp claws (Fig. 3F).

Pereopods without epipods. First pereopod stout and chelate. Fingers of chela about 0.5 length of palm, cutting edges without teeth; carpus about 2.5 longer than wide; merus slightly longer than carpus; ischium shorter than merus, with small preterminal ventral spines (Fig. 4A). Second pereopod slender and chelate, fingers of chela simple; carpus with 6 articles, relative proportions from most distal to proximal article 10:5:8:9:5:7 (Fig. 4B). Third pereopod of female with biunguiculate dactyl lined with 4 spinules along flexor margin; propodus with 9 or 10 spinules along flexor margin; carpus unarmed; merus with 1 spine (Fig. 4C). Fourth pereopod similar to third, with 1 meral spine; fifth without meral spines (Figs. 4D, E). Third pereopod of male unknown (missing from male specimen examined).

Second pleopod with appendix interna in both sexes; male with appendix masculina.

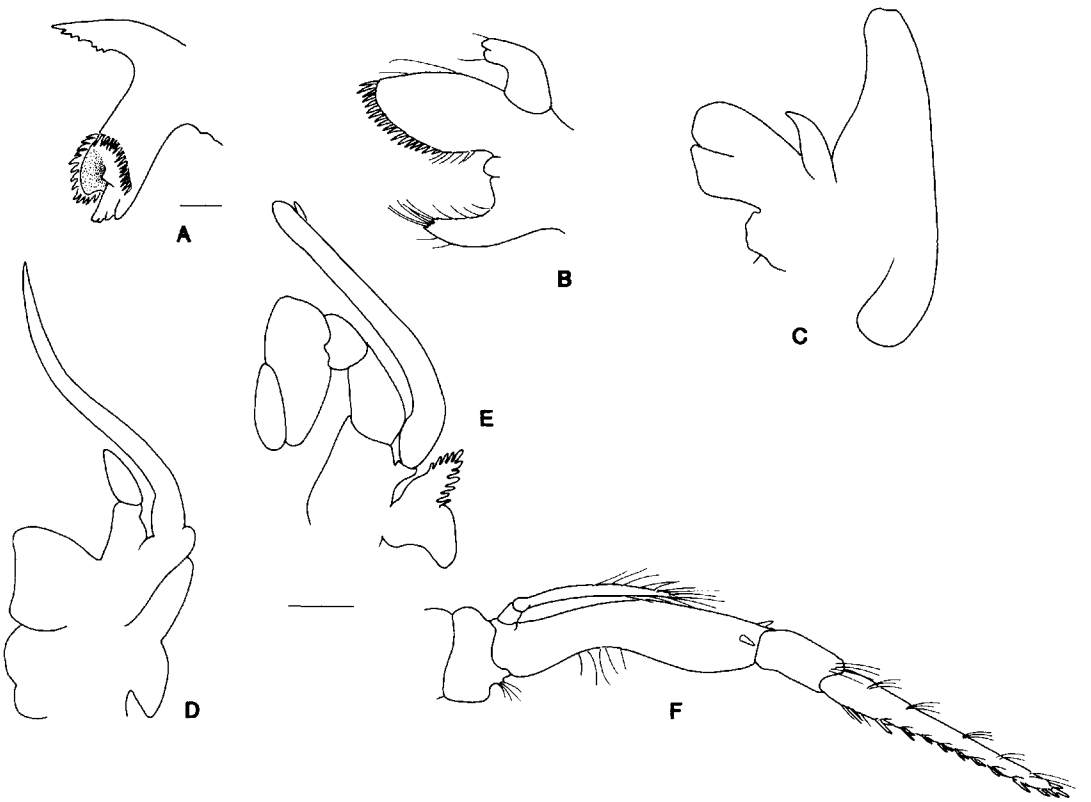

Fig. 3. *Thor cocoensis,* new species. Paratype female UCR-1760-02, mouthparts of right side. A, mandible. B, first maxilla. C, second maxilla. D, first maxilliped. E, second maxilliped. F, third maxilliped. Scales for A–B = 0.1 mm, for C–F, = 0.5 mm.

Outer uropod with fixed tooth and movable spine along suture.

Color in life not recorded.

Etymology.—The name is derived from the type locality, Isla del Coco (also known as Cocos Island).

Remarks.—This new species closely resembles *Thor cordelli* Wicksten, 1996, in size and body form. However, that species has a prominent supraorbital spine. The rostrum has three dorsal teeth, not one or two. The dactyls of *T. cordelli* are short and strongly spined, not elongate as in *T. cocoensis.*

Two other species of *Thor* occur in the eastern Pacific. *Thor algicola* Wicksten, 1987 grows to be larger than *T. cocoensis.* It has a camouflaged color pattern of lines and blotches, and a rostrum with four to six dorsal spines. The rostrum of the female is somewhat convex over the eye and has a bifid tip. It is intertidal or in shallow areas among algae, rocks or corals. *Thor amboinensis* (de Man 1888) is an associate of corals and other cnidarians. It has three to five dorsal teeth and one ventral tooth on the rostrum, short and stout dactyls of the female pereopods and a color pattern of large white dots on a dark background.

Both *Thor floridanus* Kingsley, 1878 and *T. manningi* Chace, 1972 of the Caribbean and western Atlantic are similar in size and shape to *T. cocoensis,* but each has a small supraorbital spine and a rostrum with four or more teeth. *Thor dobkini* Chace, 1972 of the western Atlantic has three to five rostral teeth and one or two spines on the merus of the first pereopod.

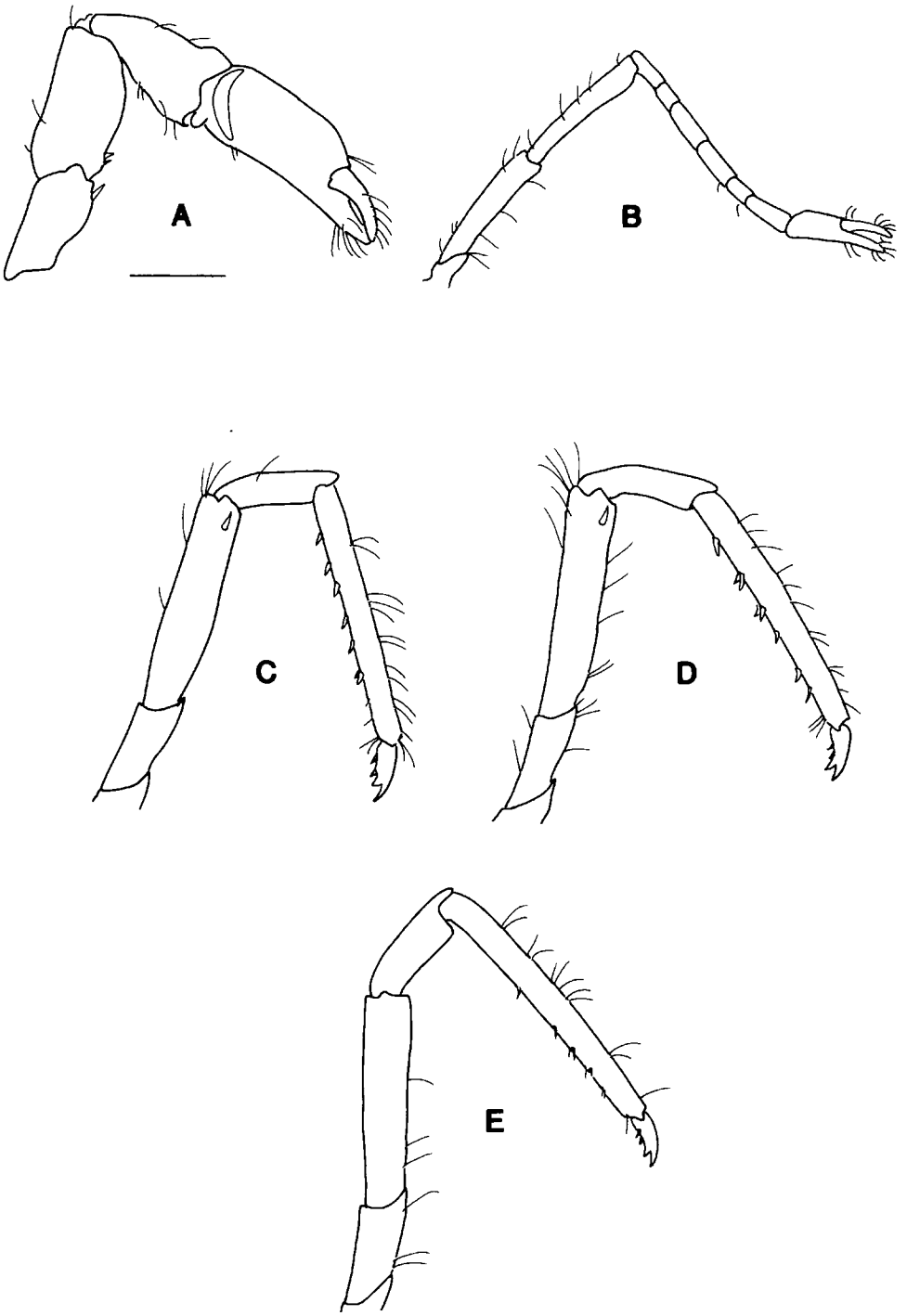

Fig. 4. *Thor cocoensis*, new species. Paratype female UCR-1760-02. A, left first pereopod, mesial view. B, right second pereopod, lateral view. C, right third pereopod, lateral view. D, right fourth pereopod, lateral view. E, right fifth pereopod, lateral view. Scale = 0.5 mm.

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