Working Copy

24 June 1998

PROCEEDINGS OF THE BIOLOGICAL SOCIETY OF WASHINGTON
111(2):314–319. 1998.

A new isopod species from Key Largo, Florida (Crustacea: Isopoda: Hologna thidae)

Brian Kensley and Kerry Clark

(BK) Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.; (KC) Department of Biological Sciences, Florida Institute of Technology, Melbourne, Florida 32901, U.S.A.

Abstract.—*Cleantioides verecundus* is described from *Thalassia* seagrass rootmats found at Key Largo, Florida. The species, the third from the western Atlantic, is characterized by the possession of a maxillipedal palp of five articles, three complete and one incomplete pleonite, and a subcircular posterior pleotelson bearing two rounded longitudinal ridges.

A single specimen of a hologna thid isopod was serendipitously collected during a class field trip conducted by the second author, while searching for gastropods along the *Rhizophora* mangle fringe of Lake Surprise, Florida. The habitat is a soft-bottomed mangrove lagoon of exceptional water clarity and rapid *Thalassia* growth. In late summer, rapid photosynthesis by *Thalassia* creates sufficient buoyancy to pull large clumps of seagrass loose from the bottom. These clumps gradually die and release large quantities of detritus, including seagrass rhizome fragments. The isopod was found within the hollow core of such a fragment. Additional collecting efforts at the type locality in July, August, and September 1997 focussed on *Thalassia* fragments, but failed to yield further specimens.

Suborder Valvifera
Family Hologna thidae Thomson, 1904
Cleantioides Kensley & Kaufman, 1978
Cleantioides verecundus, new species
Figs. 1–3

Material examined.—Holotype, USNM 253361, male tl 16.2 mm, from *Thalassia* root mat adjacent to mangrove, 0.25 m, north shore of Lake Surprise, Key Largo, Florida, 25°10′26″N, 80°23′15″W, water temperature 20°C, coll. Harry Yamalis, 29 Mar 1997.

Description.—Male: Body elongate-cylindrical, parallel-sided, about 5.2 times longer than greatest width, not noticeably setose, fine dense setae most visible on antennae and pereopods. Anterior margin of cephalon sinuous, with shallow midline notch. Eyes dorsolateral, reniform. Coxa of pereopod 1 demarked but fused with tergum; coxae 2–4 narrow, elongate; coxae 5–7 ovate, posteriorly narrowly rounded. Pleonites 1–3 complete, 4 incomplete, lacking free ventrolateral margin. Posterior pleotelsonic margin semicircular, oblique, bearing 2 submedian longitudinal rounded ridges best seen in lateral view, ridges not reaching posterior margin.

Antennular flagellum of single short article less than half length of peduncle article 3, bearing about 9 or 10 aesthetascs. Antennal flagellum of single tapering article, strongly setulose, especially ventrally. Mandible lacking palp; incisor of 3 cusps; spine row of 6 or 7 spines; molar stout, distally broad, flattened. Maxilla 1, inner ramus having 3 circumplumose setae distally; outer ramus having 9 or 10 distal spines. Maxilla 2, both lobes of outer ramus bearing numerous pectinate setae; inner ramus bearing numerous sparsely circumplumose setae. Maxillipedal endite bearing 3 coupling hooks; palp of 5 articles, 4 distal articles mesially setose. Pereopod 1, merus with 3

posterodistal spines; carpus with very short free anterior margin, about 10 spines on posterior margin; propodus with 7 spines on posterior margin; dactylar unguis with strong accessory claw. Pereopod 2 and 3 similar, longer than pereopod 1, carpi rectangular, with free anterior margin, with about 7 spines on posterior margin; propodi about 3 times longer than wide, with irregular clumps of spines on posterior margin. Pereopod 4 short, equal in length to propodus, carpus, and merus of pereopod 3; ischium with 2 posterodistal spines; merus with 4 posterodistal spines and single anterodistal spine; carpus with 8 spines on posterior surface; propodus with about 9 spines on posterior surface; dactylus reduced to single stout corneous spine. Pereopods 5–7 increasing in length posteriorly; merus with 2 or 3 spines on posterior surface, 1 or 2 anterodistal spines; carpus with 3–7 spines on posterior surface; propodus with 4 or 5 clumps of spines on posterior surface; dactylus hooked, having strong accessory unguis. Penes near base of uropod, on ventrum of pereonite 7, rami separate, tapering to rounded apices. Pleopod 1, sympod bearing 4 retinaculae; exopod shorter than endopod, both bearing numerous plumose marginal setae. Pleopod 2, both rami bearing plumose marginal setae, copulatory stylet strongly grooved, tapering to acute apex, reaching to distal margin of endopod, articulating at about proximal third of endopodal mesial margin. Pleopod 3, sympod bearing 4 retinaculae; rami subequal, only exopod bearing plumose marginal setae. Pleopods 4 and 5 similar, rami subequal, only exopod bearing sparse simple marginal setae. Uropodal sympod having longitudinal groove near mesial margin, curving laterally near base, about 2.5 times length of single ramus.

Color pattern.—Strong red-brown pigment anteriorly in dense band, posteriorly in 6 longitudinal bands on cephalon; antennules and antennae uniformly pigmented except for unpigmented antennal flagella. Pereon and pleon somites each bearing 6 longitudinal pigment stripes; subcircular pleotelson having medial pigment stripe and 5 slightly more dense patches submarginally.

Remarks.—Four species of *Cleantioides* are now known from the Western Atlantic: *C. verecundus,* from Key Largo, Florida, described here; *C. planicauda* (Benedict, 1899), from Georgia and Florida to the broad Caribbean region, as well as Oaxaca, Pacific Mexico (see Brusca & Wallerstein 1979); *C. bruscai* (Kensley, 1987) from Belize; and *C. occidentalis* (Richardson, 1899) from Lower California to Ecuador and the Galapagos Islands, as well as Atlantic Colombia (see Carvacho 1983, Müller 1988). These species can easily be distinguished by the structure of the subcircular part of the pleotelson (Fig. 1): unadorned in *C. planicauda,* with two narrow submedian lobes basally in *C. bruscai,* with two submedian longitudinal ridges in *C. verecuncus,* and with two broadly rounded submedian lobes in *C. occidentalis.* In addition to the two amphi-Panamic species mentioned above, *C. vonprahli* Ramos & Rios, 1988, has been recorded from the eastern Pacific (Colombia). In this species the pleotelson is unadorned, but not as concave as in *C. planicauda.* These five aforementioned species of *Cleantioides* can be distinguished using the features provided in Table 1. Although *C. bruscai* possesses two complete and two incomplete pleonites, Poore & Lew Ton (1990) did not consider this difference from most other species of *Cleantioides,* which have three complete and one incomplete pleonites, to be sufficient to warrant generic separation. Poore & Lew Ton (1990) redefine *Cleantioides,* and list all the species included in it.

All four species of *Cleantioides* from the western Atlantic live in the specialized habitat of hollow seagrass stems, with their brown coloration perfectly matching the stolons. While kept alive in an aquarium, the holotype of *C. verecundus* would not leave its stolon fragment unless forced to

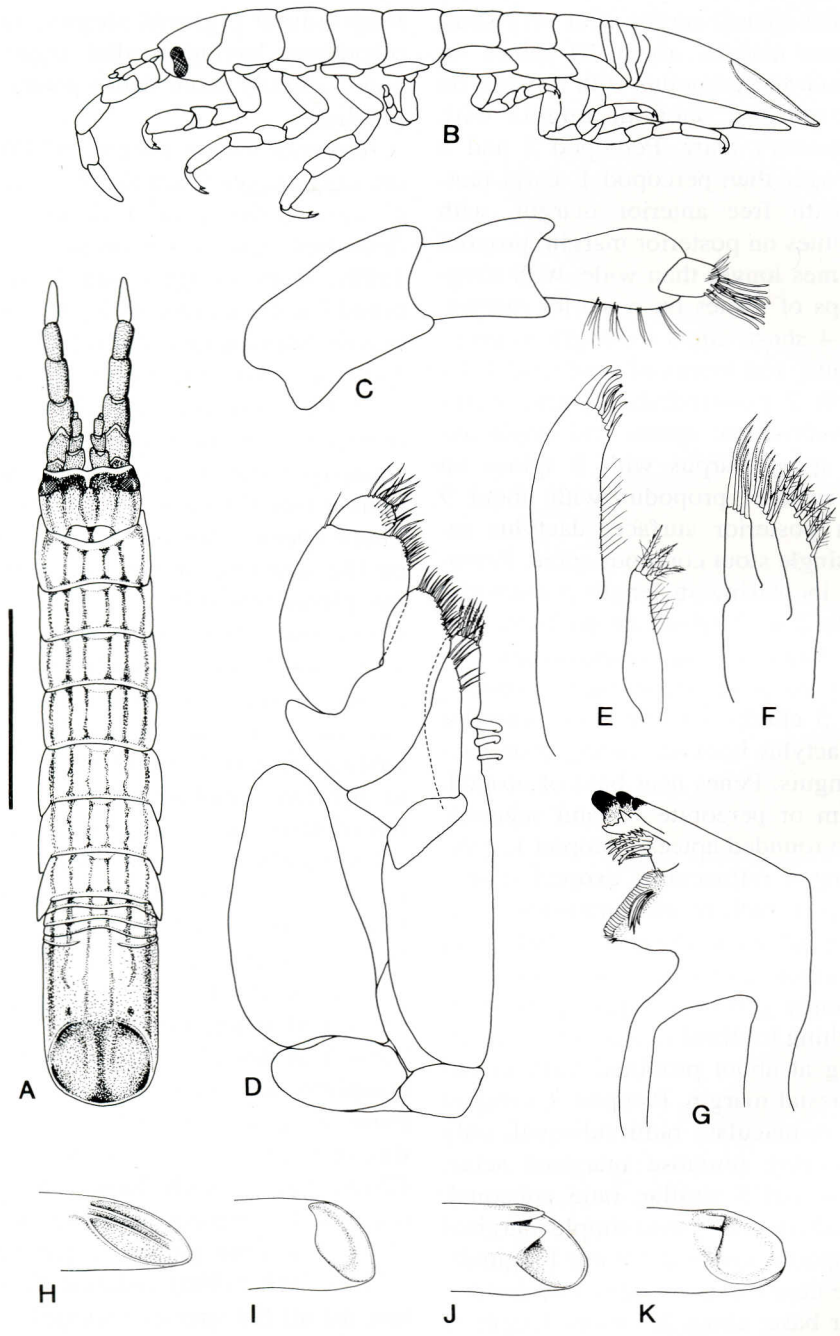

Fig. 1. *Cleantioides verecundus,* holotype. A, Dorsal view, scale = 5 mm; B, Lateral view; C, Antennule; D, Maxilliped; E, Maxilla 1; F, Maxilla 2; G, Mandible; H, Oblique-lateral view of pleotelson; I, Oblique-lateral view of pleotelson of *Cleantioides planicauda*; J, Oblique-lateral view of pleotelson of *Cleantioides bruscai*; K, Oblique-lateral view of pleotelson of *Cleantioides occidentalis.*

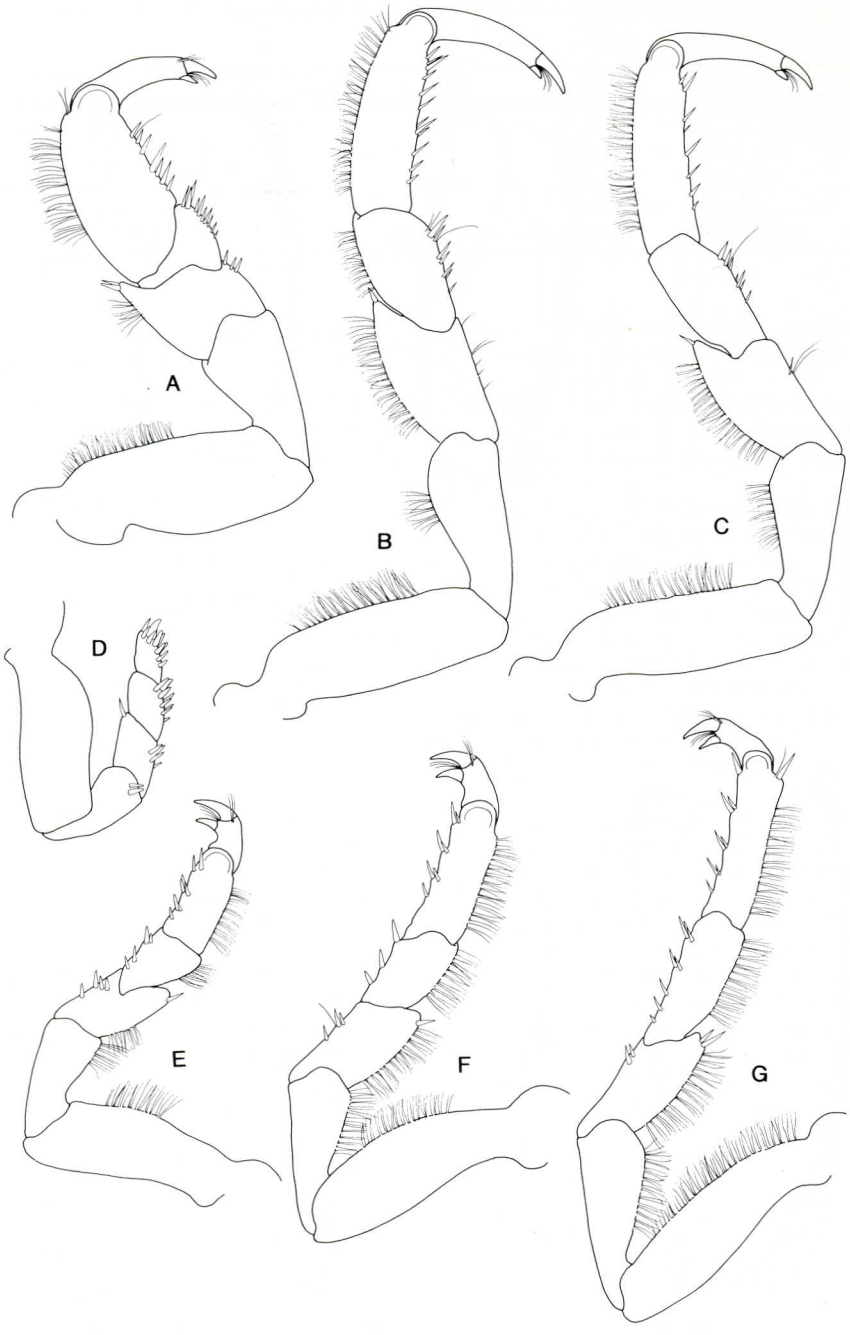

Fig. 2. *Cleantioides verecundus,* holotype. A, Pereopod 1; B, Pereopod 2; C, Pereopod 3; D, Pereopod 4; E, Pereopod 5; F, Pereopod 6; G, Pereopod 7.

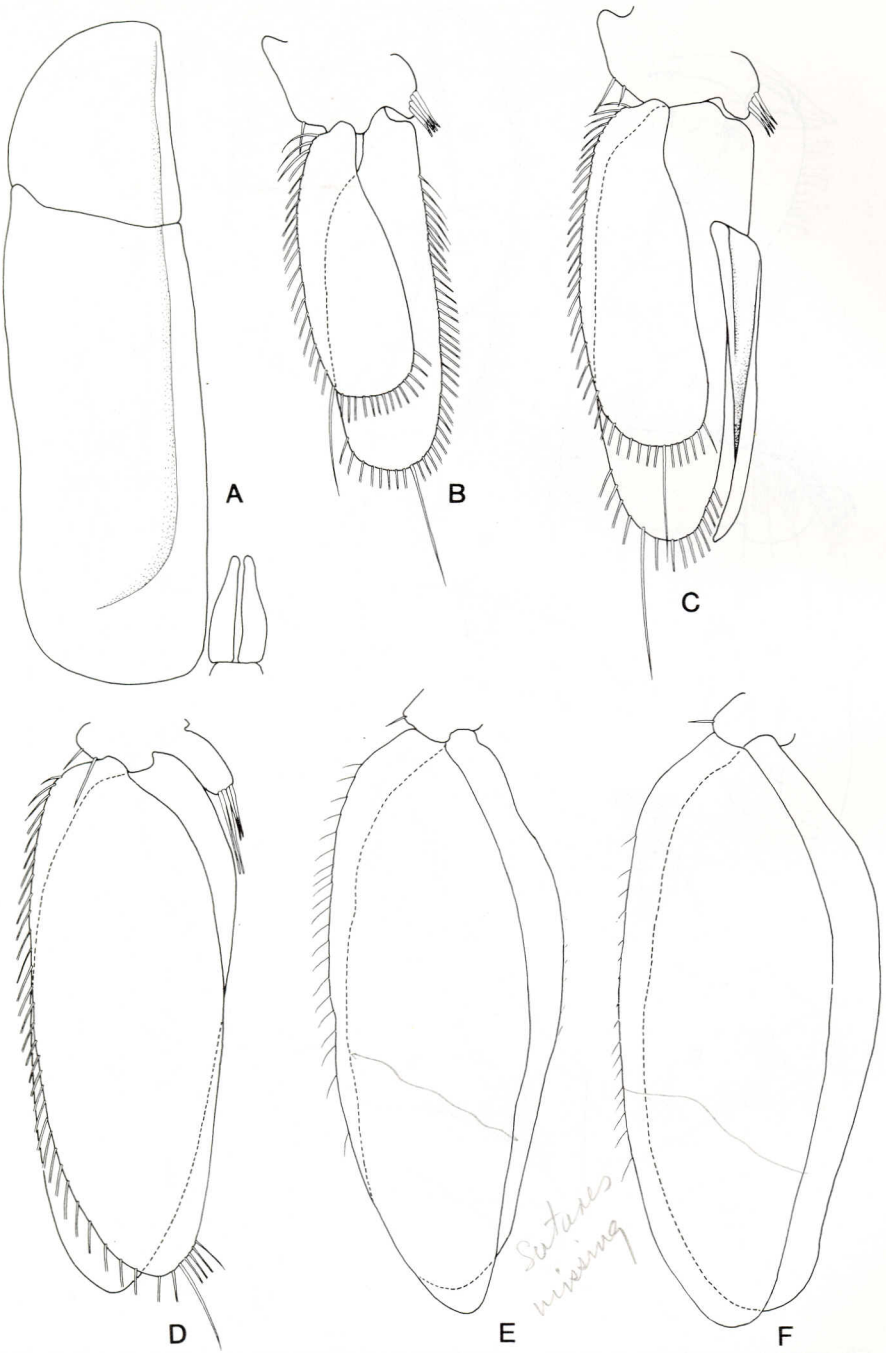

Fig. 3. *Cleantioides verecundus,* holotype. A, Uropod and penes; B, Pleopod 1; C, Pleopod 2; D, Pleopod 3; E, Pleopod 4; F, Pleopod 5.

Table 1.—Summary of four distinguishing features in western Atlantic and eastern Pacific species of *Cleantioides.*

	C. verecundus	*C. bruscai*	*C. planicauda*	*C. occidentalis*	*C. vonprahli*
Maxillipedal palp articles	5	4	5	4	4
Maxillipedal endite hooks	3	3	3	2	3
Pereonite 7 setal border	absent	present	absent	present	? absent
Pleonites: complete/incomplete	3/1	2/2	3/1	3/1	3/1
Posterior pleotelson	2 ridges	2 strong lobes	unarmed	2 short lobes	unarmed

do so; when released, it would immediately re-enter the hollow stem.

Etymology.—The specific name is from the Latin *verecundus,* shy, and refers to the holotype's reluctance to leave its tubular home while yet alive.

Acknowledgments

We thank Mr. Harry Yamalis, Department of Oceanography, Florida Institute of Technology, who collected the holotype and brought it to our attention.

Literature Cited

Benedict, J. E. 1899. [*Cleantis planicauda* Benedict, new species]. *In* Richardson, H. 1899. Key to the isopods of the Pacific coast of North America, with descriptions of twenty-two new species.—Proceedings of the United States National Museum 21:815–869.

Brusca, R. C., & B. R. Wallerstein. 1979. The marine isopod crustaceans of the Gulf of California II. Idoteidae: new genus and species, range extensions, and comments on evolution and taxonomy within the family.—Proceedings of the Biological Society of Washington 92:253–271.

Carvacho, A. 1983. Sur quelques isopodes nouveaux pour la côte caraibe de l'Amerique du Sud.—Crustaceana 45:312–314.

Kensley, B. 1987. Further records of marine isopod crustaceans from the Caribbean.—Proceedings of the Biological Society of Washington 100: 559–577.

Kensley, B., & H. W. Kaufman. 1978. *Cleantioides,* a new idoteid isopod genus from Baja California and Panama.—Proceedings of the Biological Society of Washington 91:658–665.

Müller, H.-G. 1988. Idoteidae aus N-Kolumbien mit Beschreibung von *Edotia samariensis* n. sp. (Crustacea: Isopoda: Valvifera).—Senckenbergiana Biologia 68(4/6):407–412.

Poore, G. C. B., & H. M. Lew Ton. 1990. The Hognathidae (Crustacea: Isopoda: Valvifera) expanded and redefined on the basis of bodyplan.—Invertebrate Taxonomy 4:55–80.

Ramos, G. E., & R. Rios. 1988. *Cleantioides vonprahli,* a new species of idoteid isopod (Crustacea: Isopoda: Idoteidae) from Bahia Malaga, Pacific coast of Colombia.—Revista de Biologia Tropical 36(2B):383–386.

Richardson, H. 1899. Key to the isopods of the Pacific coast of North America, with descriptions of twenty-two new species.—Proceedings of the United States National Museum 21:815–869.

Thomson, G. M. 1904. A new family of Crustacea Isopoda.—Annals and Magazine of Natural History (7)14:66–69.