

CLEANTIOIDES, A NEW IDOTEID ISOPOD GENUS
FROM BAJA CALIFORNIA AND PANAMA

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Abstract.—*Cleantis occidentalis*, described from a single specimen by Richardson (1899a) and not seen since, is now recorded from the Bay of Panama. The species is redescribed and figured, and placed in the new genus *Cleantioides*. The differences between this new genus and the closely-related *Cleantis* and *Zenobiana*, which lie mainly in maxillipedal, antennal, and uropodal structure, are summarized. Ecological observations indicate that the species lives in warm water (22–30°C) of about 1 meter depth, in an overlying silt/clay sediment layer.

The idoteid isopod *Cleantis occidentalis* was described by Richardson in 1899 from a single specimen collected in Baja California. In her 1905 monograph on the marine isopods of North America, Richardson noted that this specimen had been lost. The type has still not reappeared. In the course of sampling the benthic fauna of Culebra Island, Pacific Panama, by the second author, several idoteids were collected, which at the outset were tentatively identified as *C. occidentalis*. Subsequent examination, however, revealed discrepancies in generic diagnoses of *Cleantis* and related genera. The present paper attempts to resolve only part of the problems revealed in the generic designation of species of *Cleantis* and *Zenobiana*.

Cleantioides, new genus

Diagnosis.—Body parallel-sided. Coxae visible on pereonites 2–7. Pleon composed of 3 complete and 1 incomplete pleonites, plus pleotelson. Antennal flagellum consisting of single large article. Maxillipedal palp 4-segmented. Pereopod 4 somewhat reduced. Uropod lacking endopodal ramus on inner face.

Type-species.—*Cleantioides occidentalis* (Richardson, 1899a).

Etymology.—The generic name is derived from *Cleantis* plus 'oides' the Greek suffix meaning 'resembling or having the form of.'

Remarks.—The genera *Cleantis* and *Zenobiana*, which together contain about 20 species, have not been examined carefully enough to produce clearcut diagnoses. As a result, several species have been moved from one genus to the other without the removal of an element of uncertainty (e.g. *C. phryganea*: Hale, 1946:165). The features on which generic position is determined include the number of complete/incomplete pleonites, number of articles in the antennal flagellum, number of segments

Table 1. Comparison of 3 Genera of Idoteidae.

| | <i>Cleantioides</i> n. gen. | <i>Cleantis</i> Dana, 1849 | <i>Zenobiana</i> Stebbing, 1895 |
|--------------------------------|---|-------------------------------|----------------------------------|
| Type-Species | <i>C. occidentalis</i> (Richardson, 1899a) | <i>C. linearis</i> Dana, 1849 | <i>Z. prismatica</i> Risso, 1826 |
| Antennal Flagellar Articles | 1 | 1 | 3 |
| Maxillipedal Palp Segments | 4 | 5 | 4 (5) (segments 2 & 3 fused) |
| Uropodal Endopod | Absent | Present | Present |

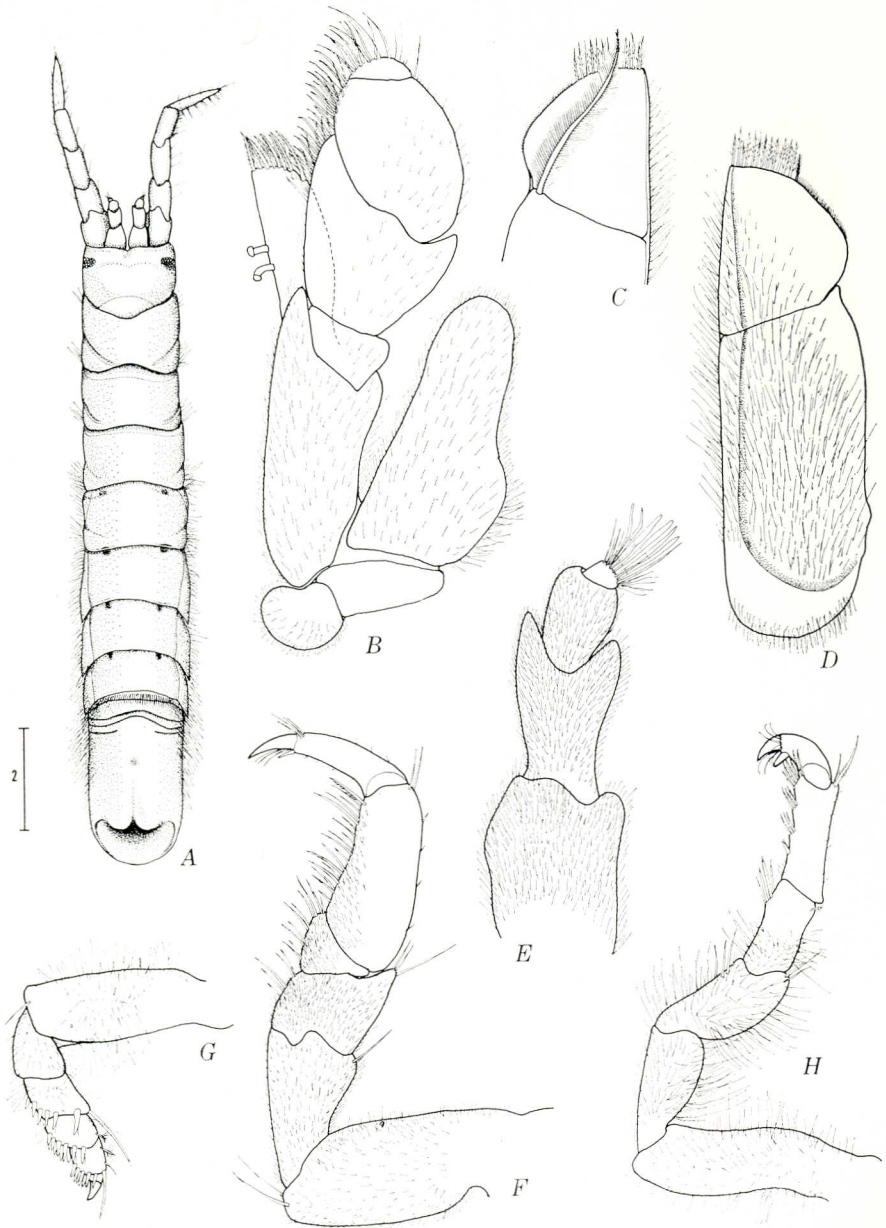


Fig. 1. *Cleantioides occidentalis*. A, Ovigerous ♀; B, Maxilliped; C, Inner view of uropodal exopod; D, Outer view of uropod; E, Antennule; F, Pereopod 3; G, Pereopod 4; H, Pereopod 7.

in the maxillipedal palp, and the presence or absence of a uropodal endopod.

Nordenstam (1933) redefined *Cleantis* after examining the type-species (*C. linearis* Dana). The key characters of his definition include a 5-segmented maxillipedal palp, a single large antennal flagellum article with or without further vestigial articles, and the presence of a small 'secondary' uropodal ramus (i.e. endopod) bearing plumose setae. This restricted diagnosis admits only *C. linearis* Dana, *C. granulosa* Heller, *C. chilensis* Menzies, and *C. phryganea* (Hale).

Examination of British Museum material of *Zenobiana prismatica* (see Fig. 2) (the type-species of *Zenobiana*) shows a species possessing 1 incomplete and 3 complete pleonites, in common with *Cleantis* and *Cleantioides*. Separation of these 3 closely-related genera is now provisionally based on a combination of 3 features. A comparison based on their type-species is given in Table 1.

Regarding the two remaining North American species of *Cleantis*, it would seem that *C. planicauda* Benedict, 1899, also belongs to *Cleantioides*. This species possesses a single antennal flagellar article, and lacks a uropodal endopod, but does have a 5-segmented maxillipedal palp. *C. heathii* Richardson, 1899a, possessing 1 incomplete and 2 complete pleonites, an antennal flagellum of 3 or 4 relatively large articles, and lacking a uropodal endopod, is regarded as the juvenile of *Idothea urotoma* (Menzies, 1950).

Cleantioides occidentalis (Richardson, 1899a)

Fig. 1

Cleantis occidentalis Richardson, 1899a:850, figs. 23, 24; 1899b:270, figs. 23, 24; 1909:406, figs. 455, 456.—Tattersall, 1921:426.—Nierstrasz, 1941:31.—Schultz, 1969:83, fig. 107. (Menzies, (1962:95) referring to Menzies (1950) states erroneously that *Cleantis occidentalis* is the young of *Idothea urotoma*. In fact, Menzies (1950:166) places *C. heathii* in the synonymy of *I. urotoma*).

Previous record.—Magdalena Bay, Lower California, 22 meters.

Description.—Female: Body almost 6 times longer than wide, parallel-sided. Posterolateral areas provided with fine dense plumose setae. Anterior margin of cephalon sinuous, with tiny median notch; posterior margin convex; distinct arc-shaped impressed line posterodorsally. Eyes dorsolateral. Pereonites 1–4 with dorsolateral groove in posterior part; coxae small, distinct. Coxae of pereonites 5–7 large, posteroventrally acute. Pleon consisting of 1 incomplete and 3 complete pleonites plus pleotelson. Anterior pleonite with marked fringe of setae. Pleotelson with evenly rounded distal margin; dorsally with 2 submedian sharp-edged lobes separated by very faint furrow. Antennular peduncle 3-segmented; flagellum of single

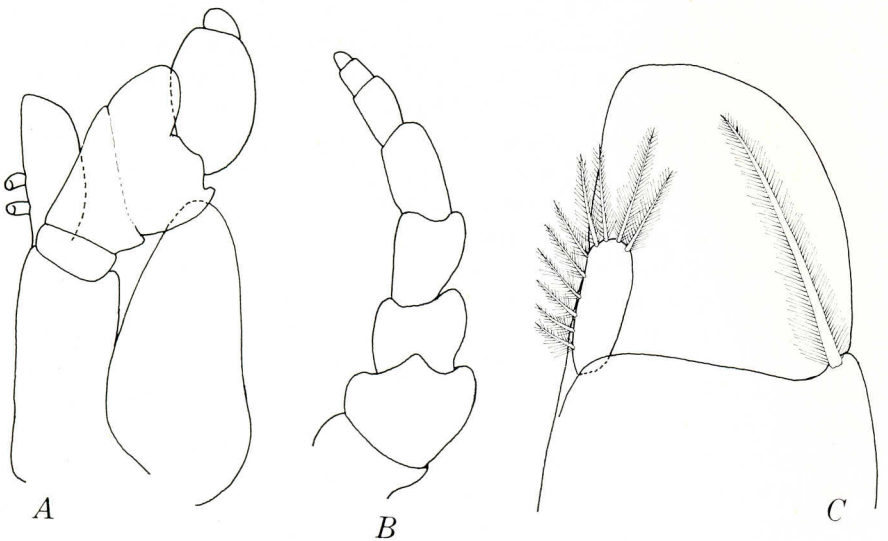


Fig. 2. *Zenobiana prismatica*. A, Maxilliped; B, Antenna; C, Inner view of uropodal endopod and exopod.

short article bearing several aesthetascs and setae. Antennal peduncle of 5 robust segments; flagellum of single tapering article bearing clusters of setae. Maxillipedal palp 4-segmented, terminal segment and basal segment short, segments 2 and 3 expanded; 3 distal segments with slender spines on medial margin; endite reaching nearly to end of second palp segment, with several fringed spines on outer distal margin; 2 retinaculae on median margin. Pereopods 1-3 increasing in length posteriorly, with numerous short setules and slender spines on posterior margin of propodus, carpus, and merus; unguis about one-third length of slender dactylus. Pereopod 4 reduced, about one-third length of preceding pereopod, basal segment equal in length to 5 distal segments together; dactylus a short squat spine; propodus, carpus, and merus each slightly longer than preceding segment, armed with several short sensory spines. Pereopods 5-7 increasing in length posteriorly; dactylus biunguiculate, strongly curved; propodus and carpus with small clusters of finely serrate spines on posterior margin; carpus, merus, ischium, and basis bearing numerous fine elongate setae. Brood pouch containing about 25 eggs, formed by 5 pairs of oostegites on pereonites 1-5. Uropods with dense plumose setae on outer surface, with curved ridge on proximal part of basis, extending distally along median margin onto exopod; latter roughly triangular, with distal row of about 12 fringed spines; endopod absent; basis with single elongate plumose seta extending beyond apex of exopod.

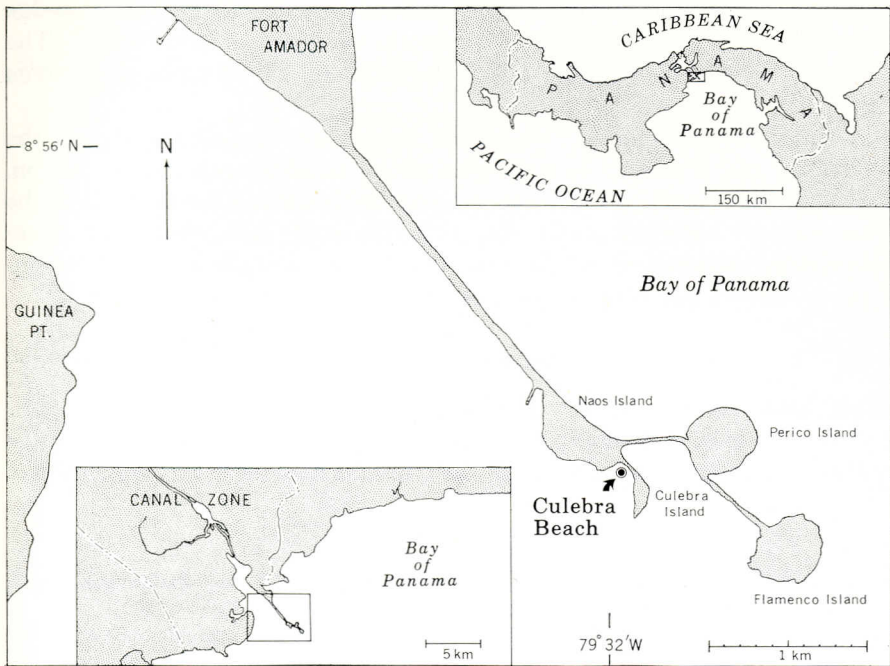


Fig. 3. Locality map for *Cleantioides occidentalis*.

Color.—Animal dorsally red-brown mottled, with 2 spots on anterior part of 4 posterior pereonites.

Material.—3 ovigerous ♀♀, total length 11.0–12.5 mm; 5 immature ♀♀, total length 4.5–10.0 mm. Culebra Island, Bay of Panama, 8°55'N, 79°32'W. USNM 171153 collected Aug.–Oct. 1977.

Ecological notes.—The specimens of *C. occidentalis* were collected on Culebra Island sand beach (see Fig. 3) located in the Bay of Panama and connected to the southern extremity of Fort Amador by a man-made causeway approximately 2 km in length. The isopods were found in the intertidal zone near mean low water level, about 300 ft from shore. In this area of the beach, the sediment is composed of approximately 75% sand, 19% silt/clay, and 6% wood and shell fragments. The sand is such that species making permanent burrows can live in it (e.g. *Callianassa*, *Acanthosquilla digueti*, and *Nanosquilla decemspinosa*). There is no apparent reduced layer and the sediment appears to be well oxygenated. Salinity measurements obtained at low water while collecting specimens ranged from 26–30‰ in the wet season (June to November) and from 29–33‰ in the dry season (January to April). The water temperature ranged from 24–30°C (wet season) and 22–29° (dry season). The tides in the Bay of Panama are semi-diurnal with a range of about 6 m.

The majority of the specimens were collected by dragging a small dredge across the muddy sand sediment at depths of about 1 m of water. The samples were collected during a flooding tide and sieved through a screen with 0.5 mm apertures.

Cleantioides occidentalis lives under warm-water conditions during the wet season and is subject to somewhat cooler conditions in the dry season, at which time upwelling occurs in the Bay of Panama. Observations of the living animals were not made, but from the ease with which they were collected by dredging, it would seem that *C. occidentalis* lives and forages in the overlying silt/clay fraction of the sediment.

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