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## Chapter 4. Suborder Microcerberidea

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**Abstract** Poore, G.C.B. 2026. Chapter 4. Suborder Microcerberidea. *In*: Poore, G.C.B. (ed.) Marine Crustacea Isopoda: guide to families and genera of the world. *Memoirs of Museum Victoria* 86: 131–133.

Diagnoses and illustrated keys are provided for two families and two genera of marine families of isopods of the suborder Microcerberidea. The ecology and distribution of each taxon are discussed with citation of literature critical for further investigation and identification to species.

**Keywords** Atlantasellidae, Microcerberidae, dichotomous keys

### Introduction

The Microcerberidea Lang, 1961<sup>1</sup> are minute interstitial Isopoda found in freshwater environments (Coineau, 1986) and in the groundwater of sandy marine or estuarine beaches or anchialine systems. Some are euryhaline (Albuquerque et al., 2009; Kim et al., 2018). The suborder comprises two families, Atlantasellidae and Microcerberidae.

Atlantasellids are flat oval isopods but members of Microcerberidae are especially slender isopods, a shape typical of many interstitial crustaceans. They were considered members of the superfamily Anthuroidea until Lang (1961) established the suborder Microcerberidea based on the shape of the mouthparts and pereopods. Two phylogenetic analyses found slightly different results for the affinities of Microcerberidea. Wägele (1982) showed that microcerberids, with a highly specialised copulatory male pleopod 2, are not related to anthuroids – he included them in the Asellota superfamily Aselloidea. Brusca and Wilson (1991) found that Microcerberidea, including both Atlantasellidae and

Microcerberidae, are a sister taxon to all Asellota. Thomas Thorpe (2024) concluded from molecular evidence that Microcerberidea is a sister taxon to Aselloidea alone.

*Diagnosis.* Head free from pereonite 1. Pereopodal coxal dorsal plates absent. Pleonites 1, 2 free; pleonites 3–6 fused into pleotelson. Pleotelson underside flat, without ventrolateral ridges (pleopods not enclosed laterally). Telsonic region of pleotelson short, anus situated posteriorly on pleotelson. Mandibular lacinia mobilis present on both sides; molar tapering; palp present. Maxilla trilobed, or bilobed. Maxillipedal endite reaching at least distal margin of palp article 2, usually distally truncate and setose. Pereopods 1–7 similar, directed more or less laterally. Penial processes medial, closer to midpoint than to pereopods. Pleopodal exopods biarticulate. Pleopod 1 absent in both sexes (rarely present in male). Pleopod 2 biramous in male, variously digitate; absent in female. Pleopod 3 peduncle and ramus fused, operculate; endopod more or less oval or rectangular, rounded distally. Uropod terminal; peduncle not operculate; rami terminal.

### Key to families of Microcerberidea

1. Body broad, 3 times as long as wide, able to roll. Uropod vestigial, ovoid, not articulating (fig. 4.1a) ..... Atlantasellidae
- Body narrow, about 10 times as long as wide. Uropod biramous, articulating (fig. 4.1b) ..... Microcerberidae

<sup>1</sup> Since this chapter was written Douady et al. (2026) concluded that Microcereberidae belong within Asellota and are sister family to Stenasellidae. Douady, C.J., Malard, F., Coineau, N., Francois, C., Issartel, C., Kim, J., Konecny-Dupré, L., Lefebure, T., Merrin, K.L., and Thomas Thorpe, J.A. 2026. Molecular evidence for the placement of Microcerberidae (Crustacea: Isopoda) within the suborder Asellota and invalidity of the suborder Microcerberidea. *Zoologica Scripta*. <https://doi.org/10.1111/zsc.70063>

### Family Atlantasellidae Sket, 1979

Figure 4.1a

Atlantasellidae, with only one genus, was described as a member of the Asellota similar to the freshwater Asellidae (Sket, 1979). The two species, 1–2 mm long, are confined to a hypersaline coastal cenote in the Dominican Republic and an anchialine cave in Bermuda (Jaume, 2001).

*Diagnosis.* Body broad, 3 times as long as wide, able to roll. Uropod vestigial, ovoid, not articulating.

#### *Atlantasellus* Sket, 1979

Hypersaline coastal cenotes and anchialine caves. 2 species.

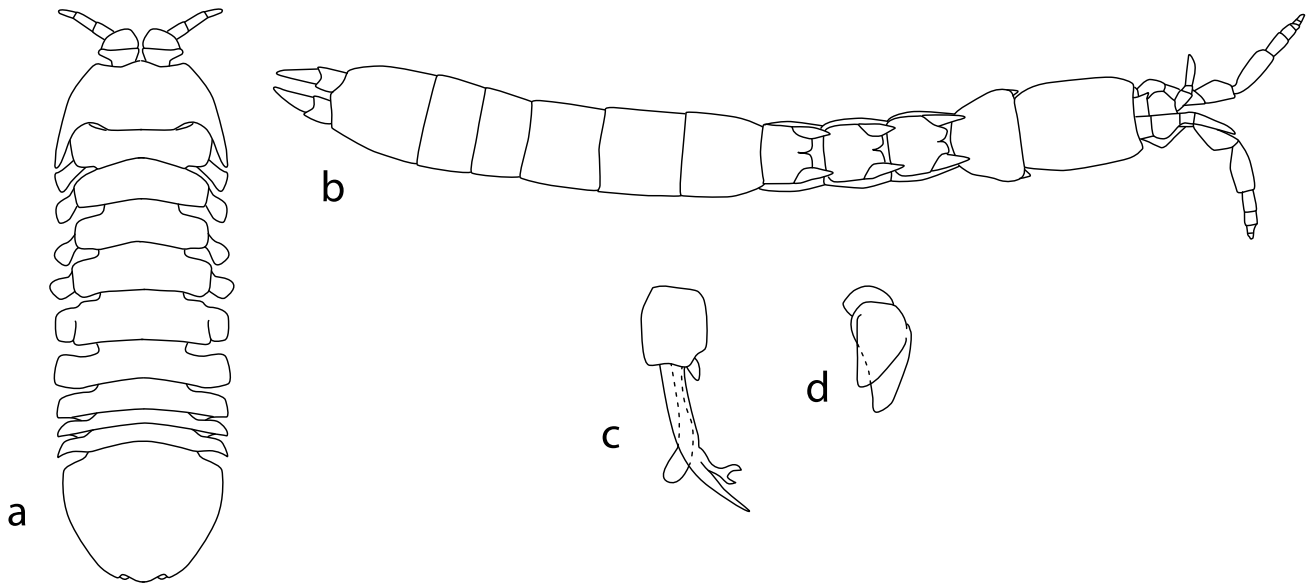


Figure 4.1. Microcerberidea. a, Atlantasellidae, *Atlantasellus*. Microcerberidae, *Robustura*: b, habitus; c, male pleopod 2; d, male pleopod 3.

### Family Microcerberidae Karaman, 1940

Figure 4.1b–c

Microcerberids are tiny, no more than 2 mm long, vermiform interstitial isopods (Chappuis and Delamare-Deboutteville, 1954; Karaman, 1940). Wägele (1983a) diagnosed the family. *Microcerberus* Karaman, 1933, with 7 species, inhabits fresh inland ground waters in or near the Mediterranean (Wägele et al., 1995). Six of the eight genera, five of which have only one species, are exclusively from fresh water (Coineau, 1986). *Afrocerberus* Wägele, 1983 and *Protocerberus* Wägele, 1983 are both from rivers in Southern Africa (Wägele, 1983b). *Mexicerberus* Schultz, 1974 is from a pool cave at 1500 m above sea level in Mexico (Schultz, 1974). *Bulgarocerberus* Baldari and Argano, 1984 is from a river in Bulgaria. *Isoyvesia* Özdikmen, 2009 (replacement name for *Yvesia* Coineau and Botosaneanu, 1973) is from a well in Cuba. *Texicerberus* Hutchins, Schwartz and Coleman, 2022, with three species is from subterranean fresh water in Texas, USA. None of these exclusively freshwater genera is included in this key to marine genera. The only key to identification of species does not include

all species or recent generic names (Chappuis and Delamare-Deboutteville, 1958). The marine origin of the family has been the subject of considerable discussion (Coineau, 1986; Wägele, 1983a, b; Wägele et al., 1995). One genus has marine representatives. Because individuals are so small and morphological distinctions between species are difficult to discern, molecular differentiation of populations have suggested the existence of cryptic species (Kim et al., 2021).

*Diagnosis.* Body narrow, about 10 times as long as wide. Uropod biramous, articulating.

#### *Robustura* Gnanamuthu, 1954

*Diagnosis.* Coxae 2–4 transformed into dorsal plates, anterior margin protruding as point. Male pleopod 1 absent. Male pleopod 2 endopod apically bifid or trifid. Pleopod 4 short, rami well covered by pleopod 3, biramous (fig. 4.1c, d).

Brackish, marine ground waters of marine beaches and intertidal zones. Temperate Northern and Tropical Atlantic, Temperate Northern Pacific, Western and Central Indo-Pacific. 33 species (Albuquerque, 1978: Brazilian species as *Microcerberus*; Wägele et al., 1995: diagnosis, species list; Kim et al., 2018: Asian species). *Coxicerberus* Wägele, Voelz and McArthur, 1995 includes *Robustura predatoris* Gnanamuthu, 1954, type species of *Robustura* Gnanamuthu, 1954. *Robustura* is therefore the subjective senior synonym of the commonly used *Coxicerberus*.

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