

THE RELATIVE POSITION OF THE LEFT
AND RIGHT LAMELLAE OF THE FURCA
IN THE ORDER MYODOCOPIDA
(CRUSTACEA: OSTRACODA)

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Abstract.—The anterior claw of the right lamella of the furca is always anterior to the anterior claw of the left lamella in the ostracode order Myodocopida. The constancy of this relationship, independent of ontogeny or sex, has not been noted previously. In the sister group of the Myodocopida, the order Halocyprida, a similar relationship of the left and right lamellae does not appear to be present in the suborder Cladocopina, and in the suborder Halocypridina, the relationship holds for the superfamily Thaumatoocypridoidea, but not for the superfamily Halocypridoidea.

All members of the superfamily Cypridinoidea Baird, 1850, the only superfamily in the ostracode order Myodocopida Sars, 1865 (sensu Kornicker and Sohn, 1976:3), have a well developed caudal furca posterior to the anus. Because of its position relative to the anus, the caudal furca has been considered a telson (Bowman, 1971:169). The furca (or telson) consists of 2 lamellae, each bearing claws and bristles or only claws, along the ventral margin (Fig. 1a, b).

The Cypridinoidea comprises 5 families. The shapes of the lamellae of the furca as well as the distribution of the claws and bristles are sufficiently characteristic to identify some of the families, but are especially useful for identification at the generic and specific levels.

A previously unnoted feature of the furca of the Myodocopida is documented here: the anterior claw of the right lamella always lies slightly anterior to that of the left lamella. Examination of more than 100 males and females of several species in all 5 families in the Cypridinoidea indicates that the relative positions of the right and left lamellae are constant throughout the superfamily. Although the relationship has been illustrated many times (Table 1), its constancy has not been noted previously. An additional asymmetry was observed on the furca of the large ostracode "*Gigantocypris* sp." (Cypridinae: Cypridinoidea). The anterior edge of the right lamella bears a broad sclerotized internal structure not present on the left lamella (Fig. 1c).

In growth stages of Cypridinoidea reared from parents collected at Belize, the anterior position of the right furcal lamella is already present in the 1st

Table 1.—Cypridinoidea having right furcal lamella anterior to left (n.d. = no data).

Species*	Sex	Develop- mental stage	Reference
Philomedidae			
<i>Euphilomedes nodosa</i>	♀	adult	Poulsen (1962: fig. 159b ⁿ)
<i>Euphilomedes bradyi</i>	♂	adult	Poulsen (1962: fig. 169j)
<i>Euphilomedes schornikovi</i>	♂	A-1 instar	Kornicker and Carajon (177: Fig. 21i)
<i>Euphilomedes sinister</i>	♀	adult	Kornicker (1974: fig. 7d)
<i>Igene walleni</i>	♀	adult	Kornicker (1975: fig. 238m)
<i>Paraphilomedes tricornuta</i>	♂	adult	Poulsen (1962: fig. 180k')
<i>Philomedes interpuncta</i>	♀	n.d.	Müller (1894: pl. 3:16)
<i>Philomedes aspera</i>	n.d.	n.d.	Müller (1894: pl. 3:17)
<i>Philomedes levis</i>	♀	n.d.	Müller (1894: pl. 3:18)
<i>Philomedes rotunda</i>	n.d.	juvenile	Kornicker (1975: fig. 146a)
<i>Philomedes heptathrix</i>	♂	adult	Kornicker (1975: fig. 149j)
<i>Philomedes tetrathrix</i>	♀	adult	Kornicker (1975: fig. 153c)
<i>Philomedes ramus</i>	♀	adult	Kornicker (1975: fig. 169m)
<i>Philomedes lofthousae</i>	♀	adult	Kornicker (1975: figs. 175e, d, 176a)
<i>Philomedes levis</i>	♀	adult	Kornicker (1974: fig. 4n)
<i>Philomedes charcoti</i>	♀	adult	Kornicker (1971: fig. 5o)
<i>Philomedes trithrix</i>	♀	adult	Kornicker (1971: fig. 7h)
<i>Scleroconcha gallardoii</i>	♀	adult	Kornicker (1971: fig. 18f)
<i>Tetragonodon rhamphodes</i>	♀	juvenile	Kornicker (1968: fig. 5e)
Cypridinidae			
<i>Azygocypridina rudjakovi</i>	♂	adult	Kornicker (1970a: fig. 8e)
<i>Codonocera cruenta</i>	n.d.	adult?	Müller (1906b: pl. 8:6)
<i>Cypridina norvegica</i>	♀	adult	Sars (1922: pl. 2c)
<i>Cypridina mediterranea</i>	♀	adult?	Müller (1894: pl. 2:25, 26)
<i>Cypridina squamosa</i>	♀	adult	Müller (1894: pl. 2:31)
<i>Cypridina squamosa</i>	♂	adult	Müller (1894: pl. 2:35)
<i>Cypridina asymmetrica</i>	♂	adult	Müller (1906b: pl. 6:4)
<i>Cypridina castanea</i>	♀	adult	Müller (1906a: pl. 33:16)
<i>Cypridinodes species</i>	n.d.	juvenile	Kornicker (1970b: fig. 12e)
<i>Doloria pectinata</i>	♀	A-1 instar	Kornicker (1975: fig. 48b)
<i>Isocypridina quatuorsetae</i>	♂	adult	Kornicker (1975: fig. 124a, b)
<i>Paradoloria dorsoserrata</i>	♂	adult	Kornicker (1976a: fig. 21b, g)
<i>Pyrocypris lepidophora</i>	♀	adult	Müller (1906b: p. 3:19)
<i>Skogsbergia costai</i>	♀	adult	Kornicker (1974: fig. 3j)
<i>Skogsbergia squamosa</i>	♀	A-1 instar	Kornicker (1974: fig. 2d)
Rutidermatidae			
<i>Rutiderma rostrata</i>	♂	adult	Poulsen (1965: fig. 3o)
<i>Rutiderma normani</i>	♀	adult	Poulsen (1965: fig. 4l)
<i>Rutiderma hartmanni</i>	♀	adult	Poulsen (1965: fig. 8g')
<i>Rutiderma mortenseni</i>	♂	adult	Poulsen (1965: fig. 11k)
<i>Rutiderma ovata</i>	♂	adult	Kornicker (1975: fig. 423a)

Table 1.—Continued.

Species*	Sex	Developmental stage	Reference
Sarsiellidae			
<i>Cymbicopia brevicosta</i>	♂	adult	Kornicker (1975: fig. 399f)
<i>Eusarsiella verae</i>	♂	adult	Poulsen (1965: fig. 36h)
<i>Sarsiella capsula</i>	♀	juvenile	Müller (1894: pl. 1:8)
<i>Sarsiella levis</i>	♂	juvenile	Müller (1894: pl. 1:28)
<i>Sarsiella levis</i>	♂	adult	Müller (1894: pl. 4:36)
<i>Sarsiella capsula</i>	♀	adult	Müller (1894: pl. 4:37)
<i>Sarsiella janiceae</i>	♀	adult	Kornicker (1976b: fig. 4k)
<i>Sarsiella neapolis</i>	♀	adult	Kornicker (1974: fig. 15i)
<i>Spinacopia variabilis</i>	♀	adult	Kornicker (1969: fig. 6g)
<i>Spinacopia sandersi</i>	♂	adult	Kornicker (1969: fig. 13r)
<i>Spinacopia antarctica</i>	♂	juvenile	Kornicker (1970a: fig. 14g)
Cylindroleberididae			
<i>Asterope mariae</i>	♂	adult	Sars (1922: pl. 10:1)
<i>Asteropteron nodulosum</i>	♂	adult	Poulsen (1965: fig. 68g')
<i>Asteropteron skogsbergi</i>	♀	juvenile	Poulsen (1965: fig. 71h)
<i>Cycloleberis americana</i>	♀	juvenile	Poulsen (1965: fig. 85k)
<i>Cycloleberis galatheae</i>	♀	adult	Poulsen (1965: fig. 88f)
<i>Cycloleberis bradyi</i>	♂	adult	Poulsen (1965: fig. 92d', d'')
<i>Cycloleberis christiei</i>	♀	adult	Kornicker and Maddocks (1977: fig. 3a)
<i>Cylindroleberis oblonga</i>	♂	juvenile	Müller (1894: pl. 1:10)
<i>Cylindroleberis teres</i>	♀	adult	Müller (1894: pl. 5:24)
<i>Cylindroleberis lobianci</i>	♀	unknown	Müller (1894: pl. 5:32)

* Species names are as they appear in reference source.

ostracodid stage. Observations were made on 1st instars of 13 *Skogsbergia* sp. (Cypridinidae), 4 *Parasterope* sp. (Cylindroleberididae), 5 *Harbansus* sp. (Philomedidae), and 10 *Sarsiella* sp. (Sarsiellidae).

The sister group of the Myodocopida, the superorder Halocyprida, includes the suborders Cladocopina and Halocypridina (sensu Kornicker and Sohn, 1976:3). The Halocypridina includes the superfamilies Thaumatoocypridoidea and Halocypridoidea (Kornicker and Sohn, 1976:3). An examination of a few specimens and a brief review of the literature suggest that members of the Thaumatoocypridoidea (Fig. 1d), like the Myodocopida, have the anterior claw of the right lamella anterior to the anterior claw of the left lamella. On the other hand, no fixed relationship between the lamella appears to be present in the Halocypridoidea (Fig. 1e; Müller, 1894, pl. 5:49) and Cladocopina.

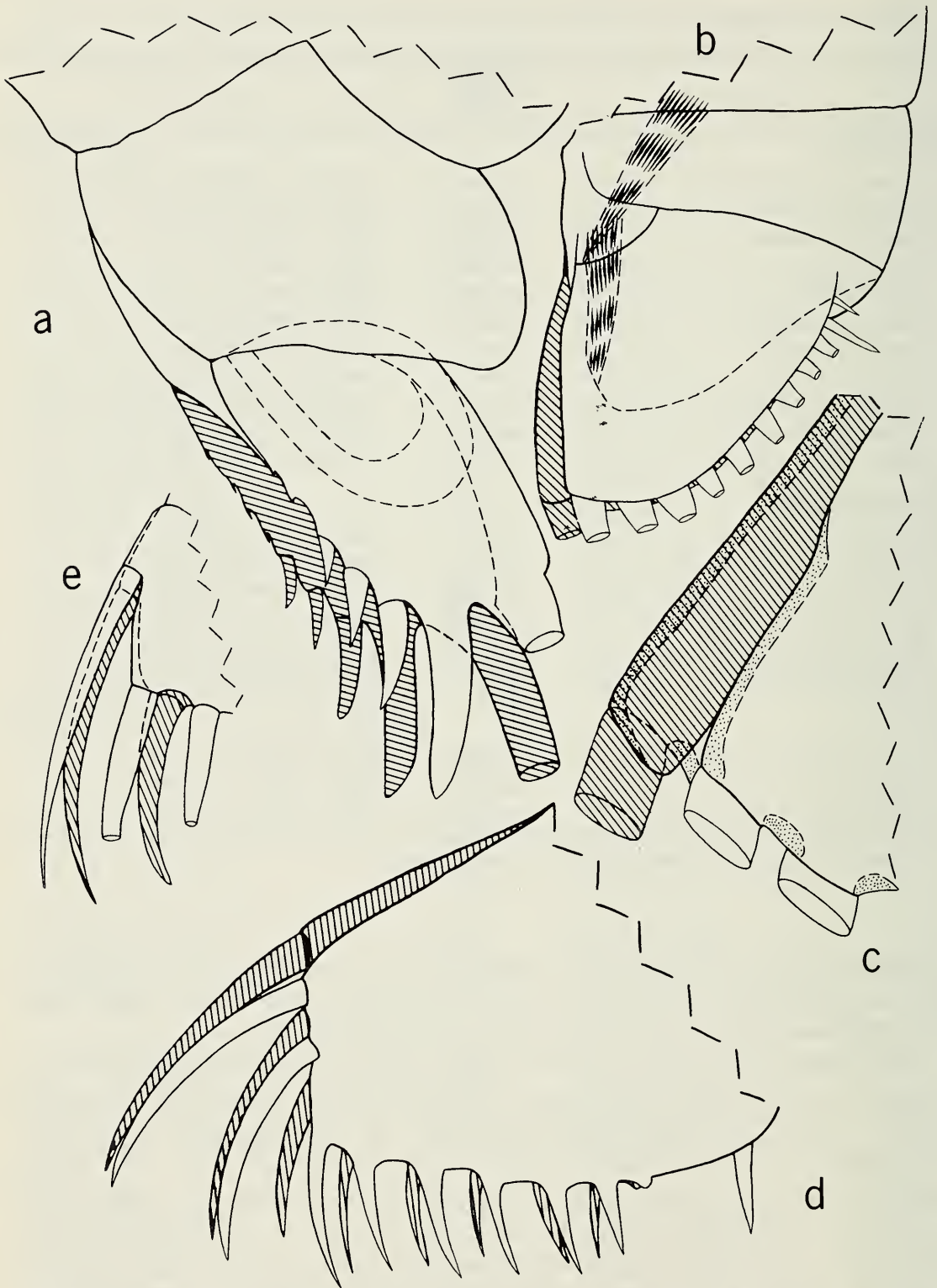


Fig. 1. Ostracode furcae: a–c, Cypridinoidea (Myodocopida): a, *Cymbicopia* sp., USNM 158208; b, *Gigantocypris* sp., USNM 157883, only proximal parts of claws illustrated; c, Detail showing sclerotized structures in anterior part of furca shown in b; d, Thaumatoocypridoidea (Halocyprida: Halocypridina), *Thaumatoconcha radiata* Kornicker and Sohn 1976, USNM 143858C. e, Halocypridoidea (Halocyprida: Halocypridina), Halocyprididae, gen. and sp. unknown, anterior claws only. Hachures identify far lamella.

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Literature Cited

- Baird, W. 1850. The natural history of the British Entomostraca.—Ray Society. London. 364 pp., 36 pls.
- Bowman, T. E. The case of the nonubiquitous telson and the fraudulent furca.—*Crustaceana* 21(2):165–175, figs. 1–18.
- Kornicker, L. S. 1968. Bathyal myodocopid Ostracoda from the northeastern Gulf of Mexico.—*Proceedings of the Biological Society of Washington* 81:439–472, figs. 1–10.
- . 1969. Morphology, ontogeny, and intraspecific variation of *Spinacopia*, a new genus of myodocopid ostracod (Sarsiellidae).—*Smithsonian Contributions to Zoology* 8:1–50, figs. 1–26, pls. 1–6.
- . 1970a. Ostracoda (Myodocopina) from the Peru-Chile Trench and the Antarctic Ocean.—*Smithsonian Contributions to Zoology* 32:1–42, figs. 1–25.
- . 1970b. Myodocopid Ostracoda (Cypridinacea) from the Philippine Islands.—*Smithsonian Contributions to Zoology* 39:1–32, figs. 1–18.
- . 1971. Benthic Ostracoda (Myodocopina: Cypridinacea) from the South Shetland Islands and the Palmer Archipelago, Antarctica.—*In* G. A. Llano and I. E. Wallen (ed.), *Biology of the Antarctic Seas IV*, Antarctic Research Series 17:167–216, figs. 1–32. American Geophysical Union. Washington, D.C.
- . 1974. Revision of the Cypridinacea of the Gulf of Naples (Ostracoda).—*Smithsonian Contributions to Zoology* 178:1–64, figs. 1–26.
- . 1975. Antarctic Ostracoda (Myodocopina).—*Smithsonian Contributions to Zoology* 163:i–vii, 1–720, figs. 1–143, pls. 1–9.
- . 1976a. Myodocopid Ostracoda from southern Africa.—*Smithsonian Contributions to Zoology* 214:1–39, figs. 1–24.
- . 1976b. Benthic marine Cypridinacea from Hawaii (Ostracoda).—*Smithsonian Contributions to Zoology* 231:1–24, figs. 1–19.
- , and F. E. Caraion. 1977. West African myodocopid Ostracoda (Cypridinidae, Philomedidae).—*Smithsonian Contributions to Zoology* 241:1–100, figs. 1–5, pls. 1–28.
- , and R. F. Maddocks. 1977. *Cycloleberis christiei*, a new species of marine Ostracoda (suborder Myodocopina) from Saldanha Bay and Langebaan Lagoon, South Africa.—*Proceedings of the Biological Society of Washington* 90(4):894–914, figs. 1–7.
- , and I. G. Sohn. 1976. Phylogeny, ontogeny, and morphology of living and fossil Thaumatoocypridacea (Myodocopa: Ostracoda).—*Smithsonian Contributions to Zoology* 219:1–124, figs. 1–93.
- Müller, G. W. 1894. Die Ostracoden des Golfes von Neapel und der angrenzenden Meeres-Abschnitte.—*Fauna und Flora des Golfes von Neapel* 21:1–404, pls. 1–40.
- . 1906a. Ostracoda.—*Wissenschaftliche Ergebnisse der Deutsche Tiefsee-Expedition . . . 1898–1899* 8(2):1–154, pls. 1–31.
- . 1906b. Die Ostracoden der *Siboga*-Expedition.—*Siboga-Expedition* 30:1–40, pls. 1–9.
- Poulsen, E. M. 1962. Ostracoda-Myodocopa, 1: Cypridiniformes-Cypridinidae.—*Dana Report* 57:1–414, figs. 1–181.

- . 1965. Ostracoda-Myodocopa, 2: Cypridiniformes-Rutidermatidae, Sarsiellidae and Asteropidae.—Dana Report 65:1-484, figs. 1-156.
- Sars, G. O. 1866. [Preprint: 1865]. Oversigt af Norges marine Ostracoder.—Forhandlinger I Videnskabs-Selskabet I Christiania 8, Aar 1865:1-130.
- . 1922. Ostracoda. Parts I & II. Cypridinidae, Conchoeciidae, Polycopidae (part).—An account of the Crustacea of Norway 9:1-32, pls. 1-16.