

## Taxa of Unknown Position within the Urostyloidea

*Notocephalus*, *Biholosticha*, and *Paramitrella* have a ventral ciliature composed of cirral pairs. This strongly indicates that they belong to the Urostyloidea. However, since they have neither three enlarged frontal cirri nor a bicorona, they are not assigned to one of the four major subgroups (Holostichidae, Bakuellidae, Urostylidae, Epiclintidae) of the urostyloids. *Biholosticha* species obviously have only two enlarged frontal cirri and lack a buccal cirrus. *Notocephalus parvulus* has two large cirri and one slightly smaller cirrus near the anterior end of the undulating membranes (Fig. 237e). Possibly, the two large ones are, as in *Biholosticha*, frontal cirri, and the smaller one is a buccal cirrus. However, detailed redescriptions (*Biholosticha*) and cell division data (*Biholosticha*, *Notocephalus*) are needed to get a better idea of the systematic position of these marine species. *Paramitrella caudata* is, due to its curious shape (Fig. 240a), an easily recognisable hypotrich. Its frontal ciliature is unknown (strongly reduced? overlooked?).

*Uncinata gigantea* is a huge (up to 1100 µm long!) ciliate which is preliminarily assigned to the urostyloids (Fig. 241a, b). Some workers doubt that it belongs to the Hypotricha at all. Redescription is needed for a more proper classification.

### *Notocephalus* Petz, Song & Wilbert, 1995

- 1995 *Notocephalus* nov. gen.<sup>1</sup> – Petz, Song & Wilbert, *Stapfia*, 40: 169 (original description). Type species (by original designation on p. 169): *Tachysoma parvulum* Corliss & Snyder, 1986.
- 1999 *Notocephalus* Petz, Song & Wilbert, 1995 – Shi, *Acta Zootax. sinica*, 24: 366 (revision of the Hypotrichida; list of genera and higher taxa).
- 1999 *Notocephalus* Petz, Song & Wilbert, 1995 – Shi, Song & Shi, *Progress in protozoology*, p. 117 (revision of hypotrichous ciliates).
- 2001 *Notocephalus* Petz, Song & Wilbert 1995 – Aesch, *Denisia*, 1: 106 (catalogue of generic names of ciliates).
- 2001 *Notocephalus* Petz, Song and Wilbert, 1995 – Berger, *Catalogue of ciliate names 1. Hypotrichs*, p. 48 (nomenclator containing all basionyms, combinations, and higher taxa of hypotrichs).
- 2002 *Notocephalus* Petz, Song & Wilbert, 1995 – Lynn & Small, *Phylum Ciliophora*, p. 442 (guide to ciliate genera).

**Nomenclature:** The name *Notocephalus* is a composite of the Greek nouns *ho notos* (the south) and *he kephale* (the head); the former refers to the geographical region where the type species occurs (southern hemisphere, Antarctica), the latter refers to the head-shaped anterior cell portion (Petz et al. 1995). Masculine gender.

**Characterisation:** Body elongate and cephalised. Adoral zone of membranelles continuous, extends far onto right body margin; proximal half distinctly spoon-shaped, with bases longest in posterior portion. Three more or less distinctly enlarged cirri (3 frontal cirri? 2 frontal cirri plus 1 buccal cirrus?) triangularly arranged on frontal area.

<sup>1</sup> The diagnosis by Petz et al. (1995) is as follows: Body elongate, cephalised. Adoral zone extends far onto right side; proximal half spoon-shaped, with bases longest in posterior portion. 1 right and 1 left marginal row. Midventral and transverse cirri present. Without caudal cirri.

Buccal cirrus lacking (see previous feature). Frontoterminal cirri lacking. Midventral complex composed of midventral pairs only. Transverse cirri present. 1 left and 1 right marginal cirral row. Caudal cirri absent.

**Remarks:** See this chapter at *N. parvulus*.

**Species included in *Notocephalus*** (basonym is given): (1) *Tachysoma parvulum* Corliss & Snyder, 1986.

### Single species

#### *Notocephalus parvulus* (Corliss & Snyder, 1986) Petz, Song & Wilbert, 1995

(Fig. 237a–f, Table 46)

- 1986 *Tachysoma parvulum* n. sp. – Corliss & Snyder, *Protistologica*, 22: 44, Fig. 6A, B (Fig. 237a, b; original description; no formal diagnosis provided. Holotype material has been deposited in the International Collection of Ciliate Type Specimens housed in the United States National Museum of the Smithsonian Institution, Washington, D.C.; Corliss & Snyder 1986, p. 40)<sup>1</sup>.
- 1995 *Notocephalus parvulus* (Corliss & Snyder, 1986) nov. comb.<sup>2</sup> – Petz, Song & Wilbert, *Stapfia*, 40: 170, Fig. 50a–d, Table 24 (Fig. 237c–f; detailed redescription and combination with *Notocephalus*. One voucher slide [accession number 2001/137; see nomenclature] of protargol-impregnated specimens has been deposited in the Oberösterreichische Landesmuseum in Linz [LI], Austria).
- 2001 *Notocephalus parvulus* (Corliss and Snyder, 1986) Petz, Song and Wilbert, 1995 – Berger, *Catalogue of ciliate names 1. Hypotrichs*, p. 88 (nomenclator containing all basonyms, combinations, and higher taxa of hypotrichs).
- 2005 *Notocephalus parvulus* (Corliss & Snyder) Petz, Song & Wilbert (1995) – Petz, *Ciliates*, p. 396, Fig. 14.83a–c (Fig. 237c, e, f; guide to Antarctic marine ciliates).

**Nomenclature:** The species-group name *parvulus* -a -um (Latin adjective; diminutive of *parvum*; very small) refers to the small length (60 µm) given in the original description; unfortunately, this value is likely much too low (misobservation? see below) and the name therefore somewhat misleading. *Tachysoma* is neuter gender. Thus, mandatory change of ending was necessary (ICZN 1985), because the latinised “*cephalus*” from Greek “*kephale*” is masculine (for details, see Aescht 2001). *Notocephalus parvulus* was fixed as type species of *Notocephalus* by original designation.

Petz et al. (1995, p. 7) did not mention *N. parvulus* in the paragraph where they listed the species for which they have designated a neotype. Consequently, Aescht (2003, p. 393) obviously erroneously designated the voucher slide 2001/137 deposited by Petz et al. (1995) as neotype.

<sup>1</sup> Petz et al. (1995, p. 7, 172) write that “types of the latter species [*Tachysoma parvulum*] have not yet been deposited”.

<sup>2</sup> The improved diagnosis by Petz et al. (1995) is as follows: In vivo about 155–160 × 40 µm. Body fusiform. Adoral zone composed of about 55–58 membranelles. Midventral row shortened, composed of 10–18 cirri. 3 frontal cirri, usually 5 transverse cirri. 3 dorsal kineties. 2 macro-, 2 micronuclei. No buccal cirri. Marine.