

Supplement to the Oxytrichidae

Neokeronopsis and *Urostyloides* have, like urostyloids, zigzagging ventral cirri. However, the dorsal ciliature is highly complex due to fragmentation, which proves that they belong to the Oxytrichidae. Since I did not include them in my revision on this group (Berger 1999), I review them in the present book. Other oxytrichids feigning a urostyloid origin are *Territricha stramenticola* and *Pattersoniella vitiphila* (Berger 1999). Molecular data on *Pattersoniella* (Bernhard et al. 2001) confirmed my “morphological” classification of this species in the Stylonychinae (Berger 1999).

Neokeronopsis Warren, Fyda & Song, 2002

2002 *Neokeronopsis* nov. gen.¹ – Warren, Fyda & Song, Europ. J. Protistol., 38: 196 (original description). Type species (by original designation on p. 196): *Holosticha (Keronopsis) spectabilis* Kahl, 1932.

Nomenclature: *Neokeronopsis* is a composite of the Greek adjective *ne-* (young, new, unusual), the thematic vowel *-o-* (used at the end of the first root of a word when the second one begins with a consonant; Werner 1972, p. 37), and the name of the hypotrichous genus *Keronopsis* Penard, 1922. For a derivation of the name *Keronopsis*, see *Pseudokeronopsis*. Likely, *Neokeronopsis* should indicate that it is “related to *Keronopsis*” sensu Kahl, that is, *Pseudokeronopsis*. It has, like *Keronopsis*, feminine gender because it ends with *-opsis* (ICZN 1999, Article 30.1.2).

Characterisation (A = supposed apomorphies): Adoral zone of membranelles continuous. Two arched rows of frontal cirri (A). Buccal cirrus present. 2 frontoterminal cirri. Several cirral pairs feigning a midventral pattern (A). Transverse and caudal cirri present. 1 left and 1 right marginal row. Parental adoral zone retained for proter. Dorsal kinety 3 with multiple fragmentation (A). Dorsomarginal kineties present. Several frontal-ventral-transverse cirri anlagen, each producing a cirral pair plus a transverse cirrus, inserted between ordinary six cirral anlagen (A). Macronuclear nodules fuse to single mass during division.

Remarks: Warren et al. (2002) established *Neokeronopsis* because *Holosticha spectabilis* shows a unique combination of features: frontal cirri arranged in a bicorona; many cirral pairs; one marginal row per side; frontoterminal, transverse, and caudal cirri present; fragmentation of dorsal kineties and dorsomarginal kineties present. They compared their new taxon with (mainly urostyloid) genera also having a bicorona. It differs from all of them, except for *Pattersoniella* Foissner, 1987b, by the presence of a fragmenting dorsal kinety and dorsomarginal kineties (for review on these features see Berger 1999 and chapters 1.7 and 2 of general section and ground pattern of Urostyloidea in present book). *Pattersoniella* and *Neokeronopsis* indeed have a very similar ventral and dorsal ciliature and ontogenesis (for review of *Pattersoniella* see Berger 1999,

¹ The diagnosis by Warren et al. (2002) is as follows: Urostylidae with two arched rows of frontal cirri; long midventral row of cirri arranged in paris; one marginal row on each side of the cell; frontoterminal, transverse and caudal cirri present; formation of dorsal kineties being of an *Oxytricha*-pattern.

p. 766). Warren et al. (2002, p. 196) therefore correctly mentioned the rigid body (against flexible) and the lack of cortical granules (against present) as main differences (the species status of both *P. vitiphila* Foissner, 1987b and *N. spectabilis*, however, is beyond reasonable doubt; see below). Because of this astonishing similarity in the infraciliature, Warren et al. (2002, p. 203) doubted my classification of *Pattersoniella* in the oxytrichids (Berger 1999). By contrast, Warren et al. assumed that *Pattersoniella* and *Neokeronopsis* are urostyloids because of the origin of the ventral ciliature from many oblique cirral streaks. My classification of *Pattersoniella* and *Neokeronopsis* in the Dorsomarginalia, respectively, Oxytrichidae (Fig. 14a) is based on the presence of dorsomarginal kineties, respectively, a fragmentation in dorsal kinety 3. The rigid cortex and the lack of cortical granules in *Pattersoniella* assigned it to the Stylonychinae (Berger 1999, p. 499, 766). Most species in the stylonychines have the plesiomorphic number of 18 frontal, ventral, and transverse cirri which originate from the characteristic six more or less longitudinal anlagen. Consequently, I proposed an increase in the anlagen number for *Pattersoniella* (Berger 1999, p. 769). A few years later, my classification of *Pattersoniella* in the stylonychines was confirmed by molecular data (Bernhard et al. 2001). In contrast, *Neokeronopsis spectabilis* has a flexible body and distinct cortical granules. Thus, this species is certainly not a stylonychine and a close relationship of *Pattersoniella* and *Neokeronopsis* can be excluded. According to the cyrtohymenid undulating membrane pattern and the heavy cortical granulation it might be a relative of *Cyrtohymena* species. However, molecular data should be awaited for a more detailed discussion.

Species included in *Neokeronopsis* (basonym given): (1) *Holosticha* (*Keronopsis*) *spectabilis* Kahl, 1932.

Single species

Neokeronopsis spectabilis (Kahl, 1932) Warren, Fyda & Song, 2002 (Fig. 242a–h, 243a–m, 244a–j, Table 47)

- 1932 *Keronopsis spectabilis* spec. n. – Kahl, Tierwelt Dtl., 25: 578, Fig. 97₁₆ (Fig. 242a; original description; no type material available and no formal diagnosis provided; see nomenclature).
- 1972 *Keronopsis spectabilis* Kahl, 1932 – Borror, J. Protozool., 19: 11 (combination with *Keronopsis*, see nomenclature; revision of hypotrichs).
- 1979 *Holosticha spectabilis* comb. n. – Jankowski, Trudy zool. Inst., Leningr., 86: 57 (combination with *Holosticha*; see nomenclature).
- 1983 *Pseudokeronopsis spectabilis* (Kahl, 1932) nov. comb. – Borror & Wicklow, Acta Protozool., 22: 116, 124 (combination with *Pseudokeronopsis*; revision of urostyloids).
- 2001 *Pseudokeronopsis spectabilis* (Kahl, 1932) Borror and Wicklow, 1983 – Berger, Catalogue of ciliate names 1. Hypotrichs, p. 37 (nomenclator containing all basionyms, combinations, and higher taxa of hypotrichs).
- 2002 *Neokeronopsis spectabilis* (Kahl, 1932) nov. comb.¹ – Warren, Fyda & Song, Europ. J. Protistol., 38: 197, Fig. 1–25, Table 1 (Fig. 243a–m; detailed redescription after protargol impregnation including cell

¹ The improved diagnosis by Warren et al. (2002) is as follows: Large, freshwater *Neokeronopsis*, 368–500 × 152–212 µm wide following protargol fixation, with 2 macronuclei. On average, 81 adoral membranelles;