

Monographic treatment of *Paraholosticha muscicola* (Ciliophora, Keronopsidae), including morphological and molecular biological characterization of a brackish water population from Korea

Jae-Ho Jung<sup>1</sup>, Helmut Berger<sup>2</sup>

<sup>1</sup>*Department of Biology, Gangneung-Wonju National University, Gangneung, South Korea*

<sup>2</sup>*Consulting Engineering Office for Ecology, Radetzkystrasse 10, 5020 Salzburg, Austria*

*Paraholosticha muscicola*, type species of *Paraholosticha* Wenzel, is a moderately common keronopsid ciliate inhabiting mainly terrestrial habitats, but also freshwater. We describe the morphology of a brackish water population from Korea, which is the first record from such a habitat. Principal component analysis shows that this population is more similar to a terrestrial population from Denmark than to a population from Antarctic soil. Its SSU rRNA sequence does not cluster with the Antarctic population, but both branch off consecutively and immediately before a mixture of other non-dorsomarginalian hypotrichs, including two further keronopsids. Keronopsids have two strong morphological/ontogenetic apomorphies, namely a frontal corona formed from anlagen I–III and the division takes place in cysts. These non-monophyletic keronopsids cluster together in the phylogenetic network, indicating phylogenetic conflicts unable to be assessed in the tree. To complete the picture of *P. muscicola*, we provide a detailed overview about nomenclature, history, and taxonomy, as well as its geographic distribution. From the four synonyms proposed so far, we preliminary accept only *P. lichenicola* and *P. ovata*. *Paraholosticha algivora* is likewise very similar and thus we propose to summarize them as species of the *P. muscicola* complex. *Stylonethes sterkii* and *P. algivora* are transferred to *Paraholosticha* Wenzel and a key to the *Paraholosticha* species is provided.

Corresponding to: [jhjung@gwnu.ac.kr](mailto:jhjung@gwnu.ac.kr)