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Morphology, ontogenetic, and molecular phylogenetic studies on species of the genera *Sterkiella* and *Fragmospina*

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Abstract

We investigated a poorly known species of the genus *Sterkiella* based on two populations collected from an agricultural field in Marche Region, Italy and from soil samples collected from the Silent Valley National Park, India. This study represents an example where data on the ontogenesis clarifies the polyphyletic behavior of the genus *Sterkiella*. Both populations showed a rather similar morphology and ontogenetic pattern and thus supported the polyphyletic behavior of the genus *Sterkiella* in molecular phylogenetic analyses. In addition, description of a species of the genus *Fragmospina* has been presented based on the detailed investigations on morphology, ontogenesis, and molecular phylogenetic methods.

Biosketch

Dr Santosh Kumar is senior scientist at the Zoological Survey of India, Kolkata. His research mainly focuses on the taxonomy and ecology of protozoan ciliates. He did his PhD from the University of Delhi, where he studied the diversity of ciliate from selected biotopes in India and the effects of heavy metals on certain ciliate species, especially the recombinant cell lines of *Tetrahymena thermophila*. Further, he studied community structure of ciliates from extreme habitats and their adaptation to high sulphur tolerance, photo-sensitivity, feeding behaviour, and cytotoxic compounds. He was the part of the Soil Mapping project, Italy, where he studied ciliated protozoa as bio-indicators of soil quality in agriculture fields under different farming practices. He was also part of the Korean Research Fellowship programme, where he studied ciliated protozoa as bio-indicators water quality in industrial polluted sites and extreme habitats. He has described more than 20 novel ciliates from India, Australia, Jamaica, South Korea, and Italy, based on the standard methods, i.e., morphology and molecular phylogeny employing ribosomal and mitochondrial genes. He has published articles in best journals of the field and contributed to over 25 presentations in national and international conferences/symposia/workshops.