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## Phylogenetic relations of thorny-headed worms and (other) rotifers

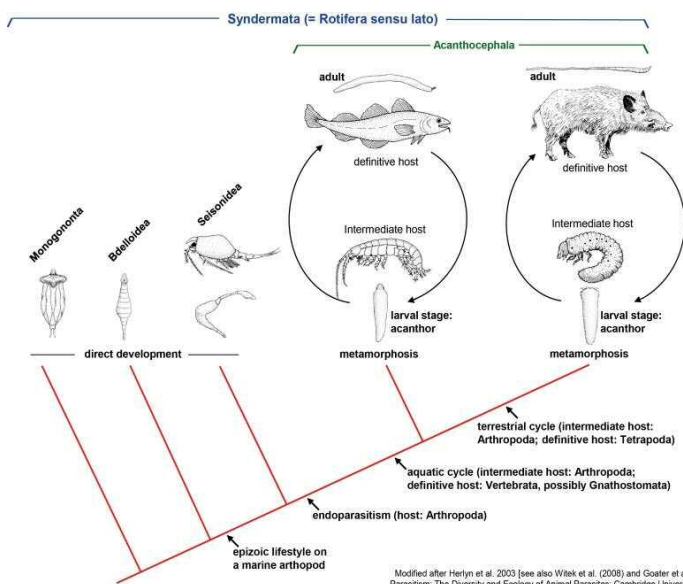
### Evolution of acanthocephalan endoparasitism



Starting with studies on morphology and ultrastructure of acanthocephalans at the University of Göttingen/Germany I turned to molecular-based phylogenetic analyses of these fascinating endoparasites about 15 years ago. After several years spent at the German Primate Center at Göttingen I joined the Institute of Anthropology in Mainz/Germany. Fruitful co-operations on-site and abroad enabled me to continue my studies on acanthocephalans and their relatives

in addition to my other main research topic which is the molecular evolution of reproductive proteins in primates and other mammals – and now some details on thorny-headed worms...

Juvenile acanthocephalans mature in the body cavities of insects, myriapods and crustaceans (intermediate host) while adult worms live and reproduce in the intestinal tract of vertebrates (definitive host). Apparently, seisonid rotifers that are well-known for living on marine crustaceans could serve as a model for an intermediate stage towards acanthocephalan endoparasitism while free-living bdelloids and monogononts could stand for an even earlier ancestral stage. However, except for a commonly accepted monophyletic origin of all four groups (call them Rotifera *sensu lato* or Syndermata) the phylogenetic relationships amongst them were a matter of a long-lasting debate. Using DNA data we were able to contribute to settle this issue. Thus, our analyses supported a branching pattern whereupon seisonids are sister to acanthocephalans (Pararotatoria) and Eurotatoria are paraphyletic, with bdelloids being sister to Pararotatoria. The molecular



evidence for this tree topology and its implications for the evolution of morphological, ultrastructural and life cycle traits will be the topic of my talk at the XIV. International Rotifer Symposium.

I am looking forward meeting the rotifer community at České Budějovice/Czech Republic where I will try to introduce thorny-headed worms as intriguing study objects also for rotifer enthusiasts.

Best regards, Holger Herlyn

#### You may also visit:

More on acanthocephalans: [http://www.anthropologie.uni-mainz.de/517\\_DEU\\_HTML.php](http://www.anthropologie.uni-mainz.de/517_DEU_HTML.php)

Research team: [http://www.anthropologie.uni-mainz.de/348\\_DEU\\_HTML.php](http://www.anthropologie.uni-mainz.de/348_DEU_HTML.php)

List of publications: [http://www.anthropologie.uni-mainz.de/350\\_DEU\\_HTML.php](http://www.anthropologie.uni-mainz.de/350_DEU_HTML.php)

Web page off the 8th Acanthocephalan workshop in 2014: <http://www.acanthocephala.de/>