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Celebrating 25 Years



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# SIAL 8

## — Speciation in Ancient Lakes —

Celebrating 25 Years and Moving Towards the Future

29 July–3 August 2018, Entebbe (Uganda)

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## Conference Program and Abstracts

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Justus Liebig University Giessen, Germany

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# Diversification dynamics in freshwater bivalves (Unionidae) from the East African Rift

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Invertebrates are exceptionally diverse, but declining because of anthropogenic changes to their habitat, as exemplified by freshwater bivalves in Europe and North America. Much less information is available for African freshwater bivalves, especially for Unionidae, which comprise 9 genera and ~40 nominal species, many of which are endemic to African ancient lakes. The phylogenetic position of most of these genera and species remains uncertain, and their conservation status unassessed. Here, we present preliminary results of phylogenetic studies on the Unionidae of the East African Rift. We integrate a phylogenetic backbone based on four gene fragments with (1) sampling information to examine geographic patterns of diversity and with (2) geometric morphometrics of shell shape to examine the relation between morphological disparity and molecular diversity. African Unionidae apart from '*Cafferia*' form a monophyletic clade, and the basal splits in this clade occur between the reciprocally monophyletic genera *Pseudospatha* and *Grandidieria*, both of which are currently endemic to Lake Tanganyika. *Mweruella*, *Nyassunio* and *Prisodontopsis* are also monophyletic in the preliminary analyses as is *Nitia*, although this latter taxon is nested within *Coelatura*, which highlights the need of systematic revisions. Biogeographic analyses indicate a statistically significant North-to-South colonization of the East African Rift by *Coelatura sensu lato*. Beyond deep phylogenetic splits among individual clades, limited molecular differentiation is observed within most clades, calling for population genetic studies. Ongoing morphometric analyses suggest strong morphological differentiation among several clades, but substantial disparity in shell shape is observed within many clades, which needs further examination.

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