



## **Morphological and molecular study of the benthic calcareous foraminifer *Cibicides* : preliminary results**

**M. Schweizer** (1, 2), J. Pawlowski (2), T.J. Kouwenhoven(1) and G.J. van der Zwaan (1, 3)

(1) Department of Geosciences, Utrecht University, The Netherlands, (2) Department of Zoology and Animal Biology, University of Geneva, Switzerland, (3) Department of Biogeology, Radboud University Nijmegen, The Netherlands

*Cibicides* (de Montfort, 1808) is a cosmopolitan genus of benthic calcareous foraminifers which is widely used for palaeoenvironment reconstructions and, because of its epifaunal life mode, often employed to generate isotope records for paleoceanographic studies. Until recently, the systematics of *Cibicides* has been based exclusively on morphological criteria. However, the morphological definition of this genus is not very precise and many *Cibicides*-like species have been placed in different genera classified sometimes in different superfamilies.

To revise the taxonomy of this genus, we have analyzed genetically 5 *Cibicides*-like morphospecies. The first molecular results based on a fragment of the small subunit ribosomal DNA (SSU rDNA) show that two species, *C. refulgens* and *C. lobatulus*, which are morphologically very close and often considered to be equivalent in paleoecological studies, are genetically well distinctive. We currently perform further studies using a longer fragment of the SSU rDNA to test the monophyly of *Cibicides* and to infer its phylogenetic relationships with other rotaliids. By revising the systematics of *Cibicides*-like species, we will contribute to better understanding of their morphological variations and in consequence to increase their value as proxies in paleoceanography and paleoecology.