

Aragonitic foraminifers: towards a better understanding of their origin, diversity, and evolution

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Context

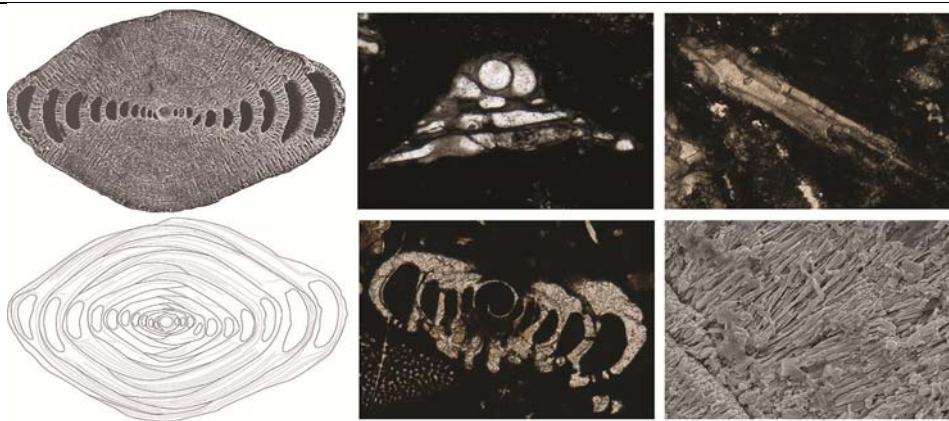
The origin, taxonomy, diversity, and phylogeny of aragonitic foraminifers have been laid down decades ago, while our knowledge of the groups was in its infancy. The outcome systematic and phylogenetic frames ineffectively reflect the complexity and evolution of the groups. While the origin and early evolution of aragonitic forms remain enigmatic, the recent acquisition of remarkably well-preserved Triassic and Cretaceous aragonitic forms (i. e., di Bari's & Masse's material) and discovery of unknown aragonitic groups (e.g., Rigaud et al., 2012, 2013, 2015) offer the opportunity to deeply improve our understanding of these poorly studied foraminifers.

Objectives and Methods

By micropaleontological observation and chemical analyses, the aim of this study is to better characterize the diversity and complexity of aragonitic foraminifers and improve our understanding of their origin and temporal evolution. The candidate will study the microstructure and chemical composition of aragonitically-preserved foraminifers. He/She will review taxonomic characteristics and confront current phylogenetic interpretations. The work will consist in a basic field investigation of one or two preselected areas (mapping, section measuring, sampling). Obtained samples will be investigated for their foraminiferal content and recovered foraminifers will be sectioned, observed (thin section, SEM), analyzed (XRF/XRD, trace and major elements), and described. Special attention will be given to the best preserved forms and those presenting particular interest (e.g., missing links and new forms).

Literature

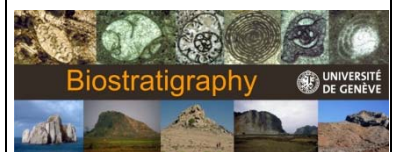
Rigaud, S., Martini, R., and Rettori, R. (2012) – Parvalamellinae, a new subfamily for Triassic glomospirid Involutinidae. *Journal of Foraminiferal Research*, 42 (3): 246–257.
 Rigaud, S., Blau, J., Martini, R., and Rettori, R. (2013) – Taxonomy and phylogeny of the Trocholinidae (Involutinina). *Journal of Foraminiferal Research*, 43 (4): 317–339.
 Rigaud, S., Vachard, D., and Martini, R. (2015) – Early evolution and new classification of Robertinida (Foraminifera): *Journal of Foraminiferal Research*, 45(1), 3–28.



Sites WEB

<http://cms.unige.ch/sciences/terre/research/Groups/sedimentology/sedimentology.php>

http://cms.unige.ch/sciences/terre/Earth_Science_department.php



Choice of orientation : Sedimentary, Environmental and Reservoir Geology