

# 13<sup>th</sup> International Symposium on Fossil Cnidaria and Porifera

Modena, 3-6 September 2019

## **ABSTRACT BOOK**

*Edited by*

Francesca BOSELLINI, Markus ARETZ, Cesare A. PAPAZZONI, Alessandro VESCOGNI

Università di Modena e Reggio Emilia, Dipartimento di Scienze Chimiche e Geologiche  
2019

## **Paleoecology of heliolitid corals from Wellin bioherm (Eifelian, Dinant Synclinorium, Belgium): preliminary results**

KRÓL Jan J.<sup>1\*</sup> and DENAYER Julien<sup>2</sup>

<sup>1</sup>Institute of Geology, Adam Mickiewicz University in Poznań, ul. Bogumiła Krygowskiego 12, 61-680 Poznań, Poland; jankro@amu.edu.pl

<sup>2</sup>Evolution and Diversity Dynamics Lab, Geology Research Unit, University of Liège, Allée du Six-Août, B18, Sart Tilman, B4000 Liège, Belgium; julien.denayer@uliege.be

\*Presenting author

Heliolitid tabulate corals from Wellin have been studied in respect to their growth patterns and colony development. The Wellin bioherm occurs within the uppermost Eifelian sediments, cropping out in southern parts of the Dinant Synclinorium in Belgium. It is located c.a. 40 km SE from Dinant. It is a part of the Wellin member of the Upper Eifelian – Lower Givetian Hanonet Formation, known for its abundant fauna of corals, stromatoporoids, brachiopods, and bryozoans.

Heliolitid corals are very abundant. They are small to medium sized (ranging between 3.4 cm and 17.2 cm in diameter). They mostly represent bulbous, domal, and irregular growth forms. Rejuvenations and following radical changes of the growth direction often occur. Growth interruption surfaces are very common within the coralla. They constitute dark layers that in cross-section show how the shape of the colony changed as it grew. These surfaces can be clean, but are often accompanied by sediment or encrusting organisms – mainly stromatoporoid sponges and alveolitid tabulates. Stromatoporoid encrusters commonly co-occur with syringoporid tabulate symbionts, growing inside the sponge body. In some cases, the encrusters were later overgrown by the heliolitid, following its recovery after the growth interruption.

The abundant growth interruption surfaces consisting of sediment, as well as the common rejuvenations and changes of the growth direction, point to episodically increased sediment input. According to previous studies, it is very likely that at least some representatives of the genus *Heliolites* could be able to survive temporary sediment cover. The higher sediment input could be caused by the increased water energy e.g. during storms. The abundant growth interruption surfaces were also observed in the Devonian heliolitids from Morocco, Poland, and other localities in Belgium.

The interactions between heliolitids and their encrusters, settling on the surface of the colony during growth interruption, could suggest a competition for space between benthic organisms. The capability of heliolitids to survive sediment-derived growth interruption and to overgrow their epibionts, imply that these corals were very resistant. Heliolitids competing with stromatoporoids and overgrowing each other are also known from the Givetian of Morocco.

The continuation of the study of heliolitids from Wellin will include detailed taxonomy and further paleoecological analysis. The paleoecology of this group of tabulates is not very well understood, as the research of heliolitids in the past was often more focused on their taxonomy.