13th 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
The upper Mississippian of the Montagne Noire (south Central Massif, France): a small endemic coral area controlled by reefal facies

POTY Edouard1*, DENAYER Julien1 and ARETZ Markus2

1Evolution & Diversity Dynamics Lab, University of Liège, Allée du Six-Août, B18, B4000 Liège, Belgium; e.poty@uliege.be; julien.denayer@ulg.ac.be
2Geosciences Environnement Toulouse, Université Paul Sabatier, Observatoire Midi-Pyrénées, avenue Edouard Belin, 14, 31400 Toulouse, France; markus.aretz@get.omp.eu
*Presenting author

In the Montagne Noire, uppermost Viséan and Serpukhovian limestones (respectively Roque Redonde and Roc de Murviel Formations) correspond to microbial reefs exposed as olistoliths. They yield abundant and diversified rugose coral faunas belonging to two stratigraphical assemblages (upper RC8 and RC9 rugose coral zones).

Some of the most common uppermost Viséan rugose corals belong to genera widespread and common in the Western European Province (that also includes North African and Nova Scotia): Axophyllum, Clisiophyllum, Diphyphyllum, Lithostrotion, Siphonodendron, Solenodendron, fasciculate Lonsdaleia, Nemistium and Palaeosmilia. Other ones, which are common in the same province, are uncommon in the Montagne Noire such as Palastraea (both species regia and carbonaria), Pareynia and Siphonophyllia, and moreover, typical uppermost Viséan corals, such as lonsdaleids with a cerioid habitus (Actinocyathus), Dibunophyllum bipartitum and Thysanophyllum, were not found. In opposite, uppermost Viséan corals, abundant in the Montagne Noire, are very rare elsewhere, such as Kizilia or Melanophyllidium.

The Serpukhovian coral fauna of the Montagne Noire shows close relationships with the uppermost Viséan one, and some of the Serpukhovian taxa could be phylogenetically linked (such as Serraphyllum which possibly evolved from one of the upper Viséan local species of Lonsdaleia). This fauna also comprises common taxa, which are either widespread, such as Axophyllum, Siphonodendron, Lithostrotion, or uncommon outside the area or endemic (Kizilia, Melanophyllidium, Serraphyllum). It includes also a colonial heterocoral known only there and in Pyrenees. The widespread Serpukhovian coral genera Actinocyathus and Dibunophyllum are absent in the Montagne Noire, but the latter is abundant in slightly younger Serpukhovian strata in Serre de Castet (central Pyrenees), which probably belongs to the same palaeogeographical unit.

Therefore, both the uppermost Viséan and the Serpukhovian of the Montagne Noire comprise abundant endemic species, whereas taxa characteristic for the northern part of the Western European Province (such as Thysanophyllum or Actinocyathus) are missing. This suggests that the Montagne Noire was a small, partially endemic, southern area in the Western European Province. However, some of the common species in the Montagne Noire (such as Kizilia and Pareynia) are only documented from reefal facies elsewhere (e.g. in Morocco and Belgium). The absence of species (e.g. Dibunophyllum bipartitum) that are common in non-reefal facies of the Pyrenees suggests that the coral assemblages are strongly controlled by the presence or absence of late Viséan-Serpukhovian reefal facies. Nevertheless, endemism could be due to the palaeogeographical location of the Montagne Noire area, more open to the Paleo-Tethys Ocean, whereas the other areas were developed in more continental platforms.