

CARBONATE PLATFORMS RUDIST BIOMINERALS

1144 - Early Cretaceous coral biostromes from the Neuquén Basin west-central Argentina blooms of soft substrate forms developed under mixed clastic-carbonate settings

*Lazo Dario Gustavo*¹, Garberoglio Ricardo Miguel¹

Universidad de Buenos Aires Ciencias Geológicas-FCEN-IDEAN Buenos Aires-Argentina¹

Scleractinian corals were significant elements of Cretaceous shallow marine settings all over the world. In particular, they were especially important in the Tethys region where they form extended framework reef facies. Northern hemisphere forms have been intensively studied, while southern faunas are generally poorly known. Most of the occurrences of Argentine Jurassic and Cretaceous corals seem to correspond to lenticular and lentiform coral-dominated beds while framework reefs are not well-represented in contrast to Tethys occurrences. In this work an integrate analysis of a number of coral biostromes recorded from the Lower Cretaceous Agrío Formation of the Neuquén Basin is presented. It includes taxonomic, taphonomic, and palaeoecological aspects of the coral association and a detailed facies analysis.

Previous studies had described six Valanginian-Hauterivian scleractinian species while recent taxonomic revision has recognized in addition at least five species.

When palaeoenvironmental conditions were suitable corals developed opportunistic and short-lived meadows composed by massive, lamellar and ramose colonies, on soft substrates in mixed clastic-carbonate settings with moderate turbidity and low to moderate sedimentation rate. Calicular arrangements include cerioid, thamnasterioid, meandroid, phaceloid and plocoid. Coral biostromes usually alternate with soft substrate mollusk dominated biofacies.

1218 - Radiolitid rudist colonisation strategies in different energetic settings on Upper Cretaceous carbonate platforms

*Hennhöfer Dominik K.*¹, Pascual-Cebrian Enric¹, Korbar Tvrtko², Götz Stefan¹

Universität Heidelberg Institut für Geowissenschaften Heidelberg-Germany¹ Croatian Geological Survey Zagreb-Croatia²

In the Upper Cretaceous period radiolitid rudist bivalves were abundant calcifiers on Tethyan shallow-water carbonate platforms. Previous studies have demonstrated various low- to high-energetic shallow environments in which vertically growing rudist bivalves settled. However, little is known about precise colonisation strategies in environments with increased water energy. The intention of this study is to gain insight into the attachment of rudist larvae and colonisation strategies of several genera on loose grainstone sediment. For this purpose a tomographic technique based on serial grinding and image processing was applied to compute three-dimensional reconstructions of radiolitid biostromes. The data revealed that the main contributors to the biostrome, *Distefanella*, *Bournonia*, and *Pseudopolyconites*, followed different strategies within one ecosystem. For instance, cylindrical elevator morphotype *Distefanella* built up a generally loose, however anchored framework to resist sedimentation and wave energy. Additional results are the presence of a preferred growth direction affecting all genera possibly linked to a present predominant direction of water currents. The results show the ability of small and thinly walled rudists to colonise moderate to high energetic environments over multiple generations. We will discuss ecological effects, limiting factors and compare the results to colonisation strategies in other environments from previous studies.

1174 - American hippuritid rudist bivalves – patterns of migration and speciation

*Mitchell Simon*¹

University of the West Indies Geography and Geology Kingston-Jamaica¹

Hippuritid rudist bivalves are common faunal elements of the carbonate platforms of the Old and New Worlds. This research examines the distribution and affinities of New World hippuritids and their relationship to Old World forms. Extensive fieldwork has been undertaken in Jamaica and Puerto Rico, including the collection of extensive new material and the recording of specific occurrences in rock outcrops. Additionally, New World (and comparative Old World) hippuritids have been studied in museum collections in Europe and the Americas.

The hippuritids of the New World can be divided into two groups: (1) immigrant genera (*Hippurites*, *Pseudovaccinites*, *Torreites*) that occur in both the Old and New Worlds; and (2) endemic genera (*Barrettia*,