

GONDWANA 15
North meets South



ABSTRACTS BOOK

14-18 July 2014, Madrid
(Spain)

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ABSTRACTS

The abstracts in this volume have been edited, and the editors take responsibility for any errors or confusion that may have been introduced

Syringoalcyon: a coral-alcyonarian association from the Palaeotethys

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The genus *Syringoalcyon* was named in 1945. Its taxonomic assignment as well as its ecologic implications have been a matter of discussion for a long time. Detailed morphological, microstructural, nanostructural, geochemical and crystallographic analyses allow a closer approach to characterization of *Syringoalcyon*. Samples from several locations and ages (Canada to Morocco; Silurian to Carboniferous) have been studied by means of optical petrography using thin and ultrathin sections, scanning electron microscopy, atomic force microscopy, electron microprobe analysis and computer-integrated-polarization. The coral wall and the “epithecal scales” show conspicuous characteristics:

Size: scales are larger than any other element known in Palaeozoic corals.

Microstructure continuity: the coral wall is characterized by a continuous frame composed of skeletal elements (lamellae and fibres), which behave as a continuous structure. Microcrystalline elements change gradually between the different morphologies, adapting their c-axes progressively. However the step from lamellae to scales is abrupt.

Nanostructure: nanostructural elements of the scales have different shapes and sizes, whereas the nanocrystalline elements of the Syringoporicae keep the same form and size.

Mineralogy: The coral wall is low-Mg calcite except for some altered crystals located just in the wall edges. On the other hand, the scales were originally high-Mg calcite. Some diagenetic alterations have been observed in the skeletal elements but it is clear that these alterations did not completely obliterate the structural and crystallographic properties, and some original regions and their biogenic properties have been preserved.

This body of data implies that *Syringoalcyon* is a commensalistic or mutualistic association between *Syringopora* and an epibiont. The analyses and the shape and distribution of the scales also suggest that the epibiont was an Alcyonarian that attached to the syringoporoid, probably for protection and proximity to sources of nutrients.

Literature references to epithecal scales in the Silurian seem to relate to a similar association of coral and Alcyonarian, but the size and shape of scales clearly differ from the Carboniferous ones. All the reliable Carboniferous records of the association are from the Upper Mississippian of Palaeotethys, mainly in the northern border of Gondwana (Morocco and SW Spain).