

ONTOGENETICAL DEVELOPMENT IN UPPER CRETACEOUS SCLERACTINIAN CORALS

Rosemarie C. BARON-SZABO

Research Institution Senckenberg, Senckenberganlage 25, D-60325 Frankfurt, Germany; RoseBaron@web.de

From Upper Cretaceous strata of the Austrian 'Gosau Group' (Finstergraben, Grabenbach, Hofergraben, and Hochmoos-Russbach; marls of Grabenbach and Hochmoos beds; Santonian) the ontogenetical development in scleractinian corals were studied (Baron-Szabo, 2003):

Columactinastrea pygmaea (Felix), *C. formosa* (Goldfuss), *Agathelia asperella* Reuss, *Hydnophora styriaca* (Michelin), *Cladocora gracilis* (d'Orbigny), *Peplosmilia latona* (Felix), *Placosmilia martini* (Michelin), *P. fenestrata* (Felix), *Aulosmilia aspera* (Sowerby), *Phyllosmilia didymophila* (Felix), *Diploctenium ferrumequinum* Reuss, *Flabellosmilia bisinuatum* (Reuss), *Acrosmilia elongata* (Reuss), *Actinacis parvistella* Oppenheim, *Fungiastrea exigua* (Reuss), *Cunolites polymorpha* (Goldfuss), and *Aspidastraea orientalis* Kühn.

In their earliest stages of ontogeny these corals have a well-defined wall and axial region. The only exception might be *Agathelia asperella* Reuss in which the early stages of ontogeny are probably characterized by unclear wall structures, consolidating during later stages of its ontogeny.

In these species the septal apparatus develops in one of three ways: The development of the septal apparatus can be in cycles in each stage of ontogeny [*Columactinastrea pygmaea* (Felix), *C. formosa* (Goldfuss), *Cladocora gracilis* (d'Orbigny), *Agathelia asperella* Reuss, *Peplosmilia latona* (Felix), *Aulosmilia aspera* (Sowerby), *Acrosmilia elongata* (Reuss), *Actinacis parvistella* Oppenheim), *Cunolites polymorpha* (Goldfuss), *Aspidastraea orientalis* Kühn], or in cycles in the initial stage transforming to a septal arrangement in size orders in the adult stage [*Diploctenium ferrumequinum* Reuss, *Flabellosmilia bisinuatum* (Reuss)], or develops in size orders throughout the entire ontogenetical growth [*Hydnophora styriaca* (Michelin), *Placosmilia martini* (Michelin), *P. fenestrata* (Felix), *Phyllosmilia didymophila* (Felix), and *Fungiastrea exigua* (Reuss)].

In solitary forms the development of the septal apparatus is closely related to the size of the corallite diameter, but is insignificant to the height of the corallum.

Throughout the entire ontogenetical growth in the corals the same microstructural development can be observed: The microstructure which is present in the initial stage of an individual occurs in each of the following ontogenetical stages.

Reference

Baron-Szabo, R.C. 2003: Taxonomie und Ontogenie von scleractinen Korallen der ostalpinen Oberkreide (Hochmoos- und Grabenbachschichten, Gosau Gruppe, Santon).- Jahrbuch der Geologischen Bundesanstalt, 143 (2): 107-201; Wien (in press).