A FIRST COMPARISON BETWEEN THE DEVONIAN TABULATE CORALS FAUNA FROM OUIHALANE (TAFILALET, MOROCCO) AND CANTABRIAN MOUNTAINS (NW SPAIN)

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The aim of this poster is to compare the tabulate corals fauna found in the Moniello-Santa Lucía Formation (Upper Emsian-Lower Eifelian, Cantabrian Mountains, NW Spain) with the fauna described by Le Maître (1947) from the "récif coralligene de Ouihalane" (asigned by this author to the Eifelian, Tafilalet, Morocco). This comparison is made with regard to a more comprehensive knowledge of the relationships among the different devonian outcrops in Morocco and also among the provinces of the Maghrebo-european realm.

The Devonian of the Asturian-Leonese Domain, in the Cantabrian Mountains (NW Spain) is characterised by an alternation of detrital and carbonate formations, principally with bentonic fauna, deposited in a shallow marine platform. In some of these carbonate successions, reef episodes of different importance were developed.

The first one, upper Emsian in age, is not very important but some genera of tabulate corals (*Crenulipora*, *Schlueterichonus*, specially) state the paleogeographical affinities of this region with North Africa (Fernández-Martínez & Tourneur, 1995).

The second and more important of these episodes is from Upper Emsien-Lower Eifelian age and it took place during the deposition of a calcareus formation, here named Moniello-Santa Lucía Formation. It consists of a series, about 250 m thick, of limestones and argillaceous limestones with interbedded thin shaly levels and the reef development occurs mainly in its lower-middle part, although some less important reef deposits have been also noted in the upper member. The main builder organisms in these deposits are stromatoporoids and massive corals (tabulate and, in a lesser degree, rugose corals). This formation has been recently studied by Méndez-Bedia *et al*., 1994 and Fernández *et al*., 1996 and the tabulate corals collected in these deposits have been noticed by Oekentorp (1975) and Fernández-Martínez (1993).

On the other hand, devonian outcrops in Morocco are well known after the impressive work by Hollard and others, and most of their paleontological content have been studied by several specialists. Also reef facies have been investigated but, in the Tafilalet region, most of these studies are specially focused on the Hamar Laghdad outcrops. Nevertheless, reefs in this area are mud mound in type and thus, coral fauna is typical of relative quiet and muddy waters.

With relation to the study of tabulate corals, this work was early undertaken by Le Maître (1938, 1939 and 1947, among others). One of these papers (Le Maître, 1947) is devoted to describe the paleontological content of the "récif coralligene de Ouihalane", located about 10 kms SE of Rissani (Tafilalet) but she also describes several samples

coming from Mechra ben Abbou and, in a lesser degree, from Merakib. Specially because of the common presence of *Calceola sandalina*, she indicates an Eifelian age for this deposit. Independently of its age and even if there is a lack of paleoecological sequences characteristic of organic buildups, the kind of fauna described by Le Maître indicates a more turbulent (less deeper or protected) environment than that deduced in the case of the Hamar Laghdad mud mounds. In addition, the presence of some tabulate corals in Ouihalane deposit indicates an environment quite close to that stated for some levels in the Moniello-Santa Lucía Formation. Thus, this similarities could allow a comparison between both Spanish and Moroccan deposits with a paleogeographical purpose.

Four species belonging to the genus *Favosites* have been described by Le Maître (1947). One of them, *Favosites granulosa* nov. sp. (?=*Favosites eifeliensis* var. *grandis* Heritsch) is quite similar to some colonies which have been collected in several levels of the Moniello-Santa Lucía Formation. Le Maître points out that this species can be also found in Mechra ben Abbou.

Two new species assigned to the genus *Thamnopora* and coming from Ouihalane have been defined by LeMaître: *Thamnopora marucchiensis* and *Thamnopora clariondi*. In our opinion, a revision of these species seems to be necessary including them in a comparative work.

According to Le Maître, the genus *Alveolites* is represented in Ouihalane by five species. *Alveolites lemmniscus* Smith is the most common alveolitid in the Moniello-Santa Lucía Formation where it plays a binder role colonizing soft grounds. The species *Alveolites praelemniscus* and *A. mauritana*, both two by Le Maître, 1947, have not been found in the Cantabrian Mountains, although the first one is reported to be found in Geras (southern slope of the Cantabrian Mountains) by Le Maître (1947:p. 76 and plate VIII) . *A. suborbicularis* Lamarck is the most common species of this genus but it seem to be restricted from Givetian to Frasnian deposits; Le Maître (1947:79) reports that the Moroccan sample cames from Mechra ben Abbou and, in the Cantabrian Mountains, this species is absent from the Emsian-Eifelian reef levels. At last, *Alveolites fornicata* Schluter is at present assigned to the genus *Squameoalvelites* and it appears, but only very scarcely, in the Moniello-Santa Lucía Formation.

The alveolitid species *"Coenites" escharoides* Steininger is very common all over Europe where it ranges from Upper Eifelian to Lower Givetian. A quite close species to *"Coenites" escharoides* has been found in the Moniello-Santa Lucía Formation but an accurate comparison with the Moroccan material is not possible because of its poor description and the lack of a figuration.

Finally, three species belonging to the genus *Heliolites* have been described by Le Maître. *Heliolites porosus* Goldfuss is a quite common species in the Middle Devonian of Europe and North Africa but in the Cantabrian Mountains it is restricted to givetian deposits. A sample describes by Le Maître as *Heliolites tenuoseptatus* Pocta cames from Merakib (Maider) and this species has not been found in the Spanish materials. Two

new species were assigned by Le Maître to Heliolites: *H. intermedius* and *H. margaritatus*. The first one is created on the basis of a broken sample coming from Mechra ben Abbou and it is very close to some samples assigned by us to *H. barrandei* and which we find in several upper Emsian levels in the Cantabrian Mountains. *H. margaritatus* is represented by two samples also coming form Mechra ben Abbou and it seems to be very close to *Heliolites porosus* var *minimus* Le Maître, 1934.

As a conclusion, Le Maître (1947) describes 16 species of tabulate corals from Ouihalane (and, in a lesser degree, from Mechra ben Abbou and Mérakib) six of which are new. Among these 16 species, two of them (*Alveolites lemniscus* and *Squameoalveolites fornicata*) are indubitable found in the Moniello-Santa Lucía Formation and several samples assigned to three species (*Favosites granulosus*, *"Coenites" escharoides* and *Heliolites intermedius*) could be co-specific with some samples coming from this Cantabrian formation. In addition, *Alveolites praelemniscus* is reported to be present in the Spanish material by Le Maître. The true (biostratigraphical, paleoecological and paleogeographical) meaning of this comparison is unknown, specially because the scarce number of samples used by Le Maître for defining several of her species. Nevertheless, the results of this comparison are promising and therefore, a revision of the Le Maître's samples as well as the study of new topotypical material could be successful for different purposes related with the nord-gondwana biogeography patterns.

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