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Lower Miocene coralline red algal assemblages from Southern Apennines (Cusano Formation, Matese Mountains, Italy)

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Lower Miocene carbonate sediments, known as "Calcari a Briozoi e Lithothamni" (Bryozoans and *Lithothamnium* Limestones - BLL), outcrop in Southern Apennines (Selli, 1957; Barbera *et al.*, 1978). In the eastern Matese Mountains BLL overlay Mesozoic shallow water sediments with a paraconformity and grade upward into Serravallian limestones ("*Orbulina* marls") through a phosphatic level. The BLL formation does not show stratification and generally consists of thick massive banks with calcarenitic or ruditic texture. Fossil assemblage is mainly constituted by red algae (Rhodophyta, Corallinales) and bryozoans, and secondarily by bivalves (ostreids and pectinids), benthic foraminifera, balanids, serpulids, and echinoids. Planktonic foraminifera are rare and increase in abundance near the boundary with the overlying "*Orbulina* Marls". These BLL deposits can be ascribed to the rhodalgal lithofacies of Carannante *et al*. (1988).

This study focuses on BLL outcrops located in the southern part of Matese Mountains. In this area, these carbonate sediments rich in corallines and bryozoans are known as "Cusano Formation" (Selli, 1957). This formation is characterized by massive carbonate banks consisting of rhodolith floatstones-rudstones. They show some local differences in thickness, texture assemblage, grains composition and packing. Rare algal bindstones are also locally present (Carannante & Simone, 1996). Although miogypsinids have been commonly observed in BLL Formation (e.g. Schiavinotto, 1985), in the Matese Group they are only locally present (Carannante & Simone, 1996). However the occurrence of *Pecten pseudobeudanti* may support a Burdigalian age for the basal interval of the Cusano Formation (Carannante & Simone, 1996).

The study area is characterised by palaeo-channels located in the lower part of a Lower Miocene open carbonate shelf (Carannate, 1982). Some authors (Simone & Carannante, 1985; Carannante & Simone, 1996) proposed an analogy between the detritic sediments of Cusano Formation and the "Détritique Côtier" biocenosis sediments (Pérès & Picard, 1964) that characterize some modern circalittoral Mediterranean environments.

The aim of this study is to define the coralline assemblages of the Cusano Formation in order to assess the palaeoenvironmental evolution of this open carbonate shelf within the paleogeographical evolution of the Matese Group Area. Eleven sections, outcropping in Pietraroia, Cusano Mutri and Ponte Arcicchiaro, have been investigated in term of biogenic components, coralline taxonomic assemblages, coralline growth-forms and related taphonomic signatures.

References

Barbera C., Simone L. Carannante G. 1978: Depositi circalittorali di piattaforma aperta nel Miocene Campano. Analisi sedimentologica e paleoecologica. Boll. Soc. Geol. It. 97: 821-834.

Carannante G. 1982: La valle del Canale (Civita di Pietraroia, Matese) una incisione Miocenica riesumata sul margine della piattaforma carbonatica Abruzzese-Campana. Geol. Romana 21: 511-521.

Carannante G., Esteban M., Milliman J., Simone L. 1988: Carbonate facies as paleolatitude indicators: problems and limitations. Sed. Geol. 60: 333-346.

Carannante G., Simone L. 1996: Rhodolith facies in the Central-Southern Apennines Mountains (Italy). In: Models for Carbonate Stratigraphy from Miocene Reef Complexes of the Mediterranean Regions (E. Franseen *et al.*, eds.). SEPM, Concepts in Sedimentology and Paleontology Series n.5: 261-275.

Pérès J. M., Piccard J. (1964: Nouveau manuel de binomie benthique de le Mer Méditerranée. In : Marseille, Travaux Station Marine d'Endoume 31, Fasc.47: 1-137p.

Schiavinotto F. 1985: Le Miogypsinidae alla base della trasgressione miocenica del Monte Camposauro (Appennino Meridionale). Boll. Soc. Geol. It. 104: 53-63.

Selli R. 1957: Sulla trasgressione del Miocene nell'Italia meridionale. Giorn. Geol. ser.2, 26: 1-54.