

Coral assemblages from a Mississippian mud-mound complex, Central Morocco

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Microbial mounds are common in the Carboniferous from Western Palaeotethys. A conspicuous Mississippian example is located close to Tabainout village in the southern part of the Azrou-Khenifra Basin, west of Khenifra in Central Morocco. The mud mounds from Tabainout lie almost directly on Ordovician sandstones. Basal Carboniferous deposits are polymictic conglomerates, sedimented in a palaeorelief on the Ordovician sandstones during the upper Viséan (Asbian). Calcareous breccias and bioclastic limestones with a diverse assemblage of corals occur in the overlying beds representing the base for the core facies of the mounds (Fig. 1).

The basal bedded bioclastic limestones contain abundant colonial and solitary rugose corals: *Amplexizaphrentis* sp., *Amplexocarinia* sp., *Arachnolasma cylindricum*, *Clisiophyllum keyserlingi*, *Dibunophyllum bipartitum*, *Lithostrotion vorticale*, *Palaeosmia murchisoni*, *Pseudozaphrentoides* sp., *Rotiphyllum* sp., *Siphonodendron irregulare*, *S. martini*, *S. pauciradiale*, *S. sociale*, *Siphonophyllia* sp., as well as tabulates (*Michelinia*) and heterocorals (*Hexaphyllia mirabilis*). This upper Viséan (Late Asbian) shallow-water assemblage is accompanied by abundant algae and algospongia (*Koninckopora*, kamaenids, *Fasciella*) and foraminifers (*Howchinia* and *Archaediscus* at *angulatus* stage).

The succeeding massive mounds are over 100m thick and form a NW-SE trending ridge. They are composed of micropeloidal mudstones-wackestones with stromatactoid cavities and contain very scarce corals of the genera *Amplexus* and *Axophyllum*. Foraminifers are very rare and calcareous algae absent. Fenestellid bryozoans can be locally common.

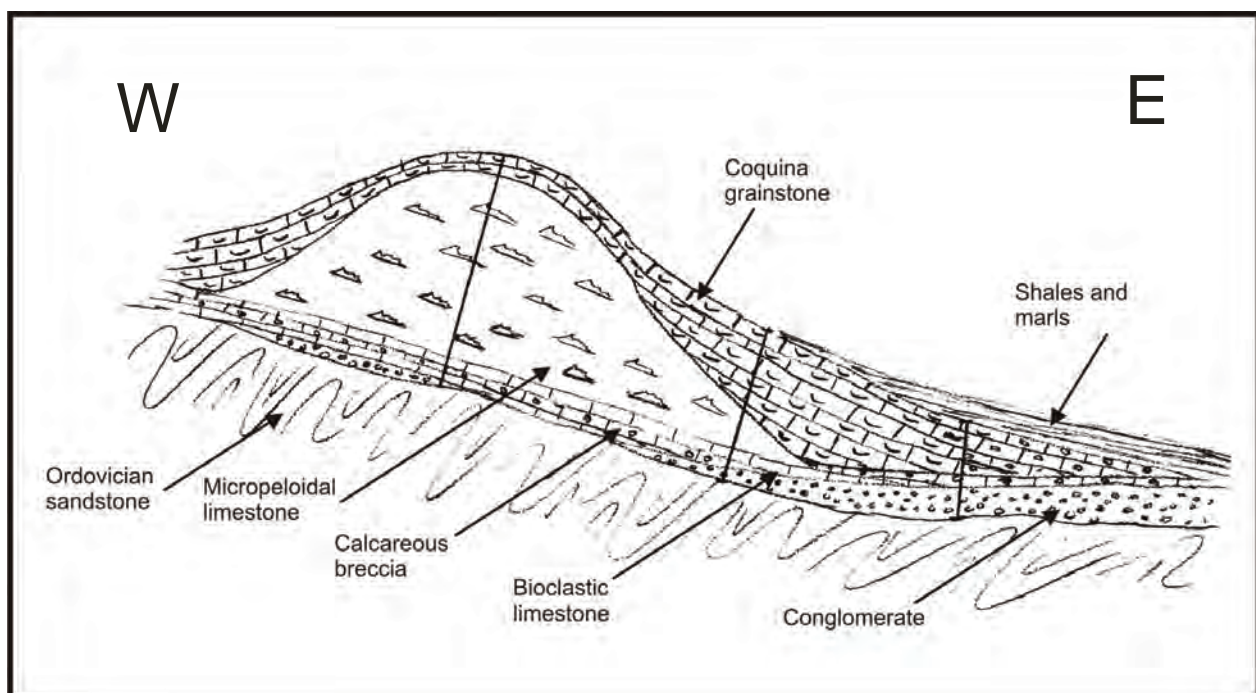


Fig. 1: Schematic W-E profile across the Tabainout mound.

The capping and flank beds of the mounds are composed of cemented coquinas with abundant brachiopods, bivalves, corals and crinoids, that yielded lower Brigantian foraminifera and algae. The coral assemblage can be locally rich in *Pseudozaphrentoides juddi* and *Palaeosmilia murchisoni*. The diversity of these upper flank beds is shown by the presence of *Amplexocarinia* sp. (gregarious form), *Arachnolasma cylindricum*, *Diphyphyllum lateseptatum*, *Kizilia* sp. *Lithostrotion vorticale*, *Michelinia* sp., *Haplolasma* sp., *Rotiphyllum* sp., *Siphonodendron martini*, and *S. pauciradiale*.

Shales with some interbedded marls containing deep-water *Cyathaxonia*-fauna corals occur around and above the microbial mounds.

The mound faunas are similar to those reported at Adarouch at the northern end of the Azrou-Khenifra Basin (SAID et al. 2007; CÓZAR et al. 2008), and have some taxa in common with coral assemblages reported from the Jerada mounds in NE Morocco (ARETZ & HERBIG 2008; ARETZ 2010). Preliminary sampling of the Tabainout mound ridge (ARETZ & HERBIG 2010) yielded only a sparse suite of corals, with only 7 rugose species recorded.

In all documented cases reported in Morocco late Viséan mudmounds are generally very sparse in corals (SAID et al. 2007, 2011; ARETZ & HERBIG 2008, 2010; ARETZ 2010). However, in many instances, rugose corals tend to become more abundant towards the top of the mound and in the immediately overlying bedded limestones. Also, marly beds adjacent to the mounds often record a dominance of small solitary rugose corals and tabulates (*Cyathaxonia* phase) often indicting a deeper water facies.

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