

AMMONITE FAUNAS FROM MARLS WITH PYRITIC AMMONITES (LOWER OXFORDIAN): ORIGINAL FAUNAS AT THE INTERFACE DISTAL PLATFORM AND BASIN

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Some authors had considered the marls with pyritic faunas as deposited in a quite shallow water and containing a reduced size fauna (nanism). But paleogeographical analyses show that this facies appears at the boundary between distal platform and basin. Faunal analyses shows that the faunal spectra are original: 1) two very small sized genera are typical, 2) the quantitative analyses show strong differences on one hand with more proximal platform and on the other hand with basin.

Small size adults

Analyses of numerous populations of Lower Oxfordian age show that two genera have a very small size adult (*closed sutures, opening of umbilicus ridge, ornamental changing on body chamber*). The first one, *Scaphitodites*, has an adult size from 7 mm to 15 mm ; it is characterised by a scaphitoid morphology and a ventral groove at the end of the phragmocone. It is unknown from authors in the ferruginous oolitic facies of more proximal platform and in the SE French basin. The second, *Creniceras*, is always frequent in this facies. It is known in ferruginous oolitic facies (but not frequent); in the SE French basin, except in Ardèche, it is unknown. It can be noticed that adult peristome are almost never preserved in this genus.

Some specimens belonging to the genus *Hecticoceras* have, as soon as a 12 mm diameter, closed sutures. They are interpreted as microconchs because, on the more proximal platform, we found adults with lappets at the same size. The others genera, with greater microconchs (*Cardioceras, Peltoceratoides, Euaspidoceras, Properisphinctes, Prososphinctes, Taramelliceras*), never present adult characters: they are not dwarf .

Ammonites spectra

The Ammonitina change also, from proximal platform to basin, in quantitativ characteristics. 1) *Cardioceratids, Peltoceratids* and *Euaspidoceratids*, are more frequent towards proximal platform ; 2) *Taramelliceratids* as *Perisphinctids* are more frequent towards the basin ; 3) *Hecticoceratids* are common everywhere but more abundant in marls ; 4) *Scaphitodites* is strictly restricted to marls with pyritic fossils and *Creniceras* frequent.

The *Phylloceratina* have a more strictly paleogeographical repartition. They abound in the basin where they are always strongly dominated by the genus *Sowerbyceras* ; the other genera (generally 3 to 5) are not frequent. *Sowerbyceras* is always absent in proximal environment at the contrary of other *Phylloceratids* which are rare but present. When *Scaphitodites* exist, *Sowerbyceras* are rare and more common when *Scaphitodites* disappears. That observation can be explained if we consider that *Sowerbyceras* is a nectobenthic ammonite which claim a minimum of depth ; in this hypothesis, they cannot have a post-mortem drift as other pelagic *Phylloceratids*.

Conclusion

Analyses of faunas from marls with pyritic fossils shows that this environment is typified by an original assemblage and is colonized by some taxa with steno ecological requirement.