

## 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 quantitative 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.

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