(heart urchin traces), *Palaeophycus* and *Planolites* (traces of worms, molluscs, ...). They occur as horizontal convex epireliefs at the interface between hard and loose layers. In the hardened layers proper traces are lacking. The very fine sediment of those hardened banks suggest they originated in a mud environment with slow sedimentation.

In the loose strata all ichnofossils, except one, are oriented vertically. The crab trace *Ophiomorpha* occurs frequently, which indicates a probable sandy littoral or shallow sublittoral deposit. *Tasselia ordamensis* is common in the lower part of the Merksem Sands, where it forms dense clusters.

Three ichnogenera are present which seem to be undescribed. One forms a continuous level at about 4 m below the top of the Merksem Sands, and consists of hollow tubes (± 10 cm long), broadening towards the top (0.5 to 1 cm in cross section). The upper surfaces of the tubes seem to be slightly eroded. No body fossils were encountered near these tubes, so their originator is unknown.

The loose sandy layers seem to have been formed during a sudden acceleration of the sedimentation. Many of the vertical ichnofossils present in them should be considered as fugichnia. The complete sequence of sandy and clayey layers must have been deposited in a relatively short time-interval, because otherwise bioturbation would have destroyed fragile structures such as *Subphyllochorda* and *Cardioichnus*.

III. ECHINODERMATA AND MOLLUSCA

Paleoecological studies on Cretaceous oysters and the limitations of oyster systematics

by

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Recent oysters from the tidal and subtidal zones have been shown to have morphologically very different ecomorphs, induced by sunlight and by the type of attachment area. The existence of such polymorphy in genera belonging to the family Ostreidae makes paleontological studies of many genera (*Crassostrea*, *Lopha*, *Ostrea*, *Saccostrea* ...) partly pointless; indeed, a reasonable 'species-concept' cannot be applied. Yet, « oyster-types » which obviously sometimes only represent ecomorphs can be recognised in many Cretaceous localities. Oysters occur frequently there in large numbers per 'species' and in a wide diversity of species. An analysis of the oyster faunas in well known Late Cretaceous localities in Europe indicates a number of different faunal associations with clear paleoecological implications. The following faunas can be differentiated :

1. dominance of *Rastellum* species, and numerous *Exogyra*'s, but no or few *Pycnodonte*'s : very shallow, near-shore; if *Pycnodonte*'s are absent probably intertidal (example : Ifö, Sweden),
2. dominance of *Pycnodonte* (*Phygraea*) species, no *Exogyra*'s : relatively deep/cold seas (example : the Northern European White Chalks of the Schreibkreide-type, but also Meudon in the Paris Basin),
3. *Pycnodonte* (*Phygraea*) is relatively rare, but *Pycnodonte* (*Pycnodonte*) occurs frequently, along with *Exogyra*'s and large sized *Rastellum* sp. (example : White Chalks from southern near-Tethys deposits, such as in the Charente or in Crimea, S. USSR).

Paleoecological differentiation in this case also helps paleobiogeography.

Why are regular Echinoids rare?

by

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The ratio of regular to irregular echinoid species and specimens can vary strongly, according to environmental factors. In the actual biosphere, 53 % of all living species are regular.