

The thanatocoenoses of Foraminifera found in the sand pockets, drain channels and beach, faithfully reflect the biocoenoses of those living mainly upon and in a well-developed algal mat which covers large areas of the three reef flats, except the algal pavement (forereef) where algal growth is reduced to the crustose coralline lithothamnoid Rhodophyta. Only smaller empty tests and finer sediment particles are transported in a leeward direction.

Highest foraminiferal abundances are reached (bio- as well as thanatocoenoses) by Soritidae, Amphisteginidae, Calcarinidae and Elphidiidae. Particularly abundant species are *Marginopora vertebralis*, *Amphistegina lobifera*, *Calcarina spengleri*, *Baculogypsina sphaerulata* and *Elphidium crispum*.

The distribution of the foraminiferal communities is closely dependant on the distribution of the algal mat which is shown to form an ideal protecting habitat for larger as well as smaller Foraminifera. The algal composition of this mat is slightly variable but Chlorophyta (e.g. *Halimeda* spp.) and particularly smaller non-encrusting Rhodophyta (e.g. *Laurencia* spp., *Hypnea*, *Amphiroa* ...) dominate. The foraminiferal distribution is only secondarily influenced by the biological composition and species diversity of the algal mat; the physical properties (size, shape, flexibility and surface-texture of the thalli) play an important role in this respect.

Paleoecological applications of this algal-foraminiferal interdependence are possible but should be interpreted with caution.

The Use of Theory in foraminiferal Systematics

by

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An analysis of foraminiferal taxonomy leads to the conclusion that the systematics of this taxon are deficient in consistency, adequacy and transparency. Having only morphological features at hand, the use of theoretical morphology is suggested as a new basis for systematics. Analyses starting from here should lead to insight in form and hence to delineation of morphospecies. Preliminaries to a case study of *Pyrgo*, DEFRANCE exemplify this approach.

II. TRACE FOSSILS AND PREDATION

Paleoenvironmental significance of bore-holes in Miocene ostracods of Belgium

by

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Many valves of Belgian Miocene ostracods show bore-holes of naticid origin. The smallest hole observed measured 0.02 mm, the largest one 0.33 mm. The most common naticid species in the Miocene of Belgium is *Euspira catena* (DA COSTA, 1778), and it is assumed that most of the holes are drilled by this species. The predation pattern was analysed quantitatively. It was found that 2.0 to 13.7 % of the adult valves had bore-holes (mean value for the Belgian Miocene : 8.1 %). The bore-hole frequency is different from one locality to the next, and from one lithostratigraphic subdivision to another. The differences observed within a single section, however, are of the same magnitude. From the 81 species observed, only 36 have bore-holes, and what is more, 83.3 % of all bore-holes occur on the valves of six species : *Sarsicytheridea lienenklausi* (KUIPER, 1918), *S. cypridioides* (BRADY, 1878), *Pontocythere lithodomoides* (BOSQUET, 1852), *Cytheridea hoerstgenensis* BASSIOUNI, 1962, *Muellerina latimarginata* (SPEYER, 1863) and *Cytheridea* sp.

There seems to be a selective predation on these six species. This means that the percentage of valves with bore-holes is often larger than the actual percentage of occurrence of that species in one or more samples or even in a whole section. Five of the six