

First record of foraminiferal faunas associated to *Haploops* settlements on the French Atlantic coast

JB. Champilou(1), M.P. Nardelli(1), C. Barras(1), F. Jorissen(1), A. Mouret(1), G.M.Maillet(1), A. Baltzer(2), JM. Rousset(3), M. Reynaud(3), E. Metzger(1)

1 Laboratoire de Planétologie et Géodynamique Bio-Indicateur Actuels et Fossiles, LPG-BIAF, CNRS - UMR 6112, Université d'Angers UFR Sciences, CNRS, 2 Boulevard Lavoisier 49000 Angers, France

2 Laboratoire Littoral Environnement Télédétection Géomatique), LTEG, CNRS – UMR 6554, Université de Nantes, Campus Tertre, BP 81227 44312 Nantes Cedex 3, France

3 Laboratoire de recherche en Hydrodynamique, Énergétique et Environnement Atmosphérique, LHEEA, CNRS – UMR 6598, École Centrale de Nantes - SEM-REV, 1 Rue de la Noë BP 92101 44321 Nantes Cedex 3, France

Corresponding author e-mail : jean-baptiste.champilou@univ-angers.fr

On the inner continental shelf (depth < 50 m close to the shore) of South Brittany (France) dense settlements of *Haploops* spp., tube dwelling crustacean amphipods, have been reported over the last decades. Their key-role as bio-engineer species, on the sediment dynamics and ecological niches is still poorly known. Recently, the perfect overlap of *Haploops* settlements on pockmarks field on three different sites along the French Atlantic coast arose the hypothesis that a link exists between the release of methane through active pockmarks and the presence of these organisms. The aim of the present study is to explore the foraminiferal faunas associated to these complex ecosystems and eventually the role of *Haploops* settlements as source of heterogeneity compared to the adjacent muddy substrates.

Foraminiferal assemblages (>125 µm) of three replicated cores collected inside the *Haploops* settlement in the adjacent muddy facies and inside a small pockmark chimney (where the *Haploops* are scarce), were analyzed.

The three facies have a common species pool, but display major differences in terms of absolute abundances and biodiversity. The *Haploops* facies shows less dense and highly diverse faunas, compared to the assemblages in the bare muddy facies, where the assemblages are largely dominated by the species *Elphidium selseyense*.

Compared to *Haploops* settlements, the pockmark facies exhibits similar abundances but a lower diversity. The main difference with *Haploops* facies concerns rare species, only present in the tube cover. Our results highlight a positive impact of *Haploops* ecosystems on the total diversity of the study area.