



Living small-sized (63-150 μm) foraminifera from mid-shelf to mid-slope environments in the Bay of Bisca

Submitted by Emmanuel Lemoine on Tue, 09/16/2014 - 12:02

Titre	Living small-sized (63-150 μm) foraminifera from mid-shelf to mid-slope environments in the Bay of Bisca
Type de publication	Article de revue
Auteur	Duchemin, Gérald [1], Fontanier, Christophe [2], Jorissen, Frans [3], Barras, Christine [4], Griveaud, C. [5]
Editeur	Cushman Foundation for Foraminiferal Research
Type	Article scientifique dans une revue à comité de lecture
Année	2007
Langue	Anglais
Date	2007
Numéro	1
Pagination	12 - 32
Volume	37
Titre de la revue	Journal of Foraminiferal Research

Résumé en
anglais

Live (rose Bengal stained) foraminiferal faunas of the 63–150 µm size fraction have been investigated in surficial sediment (0–1 cm) from mid-shelf to mid-slope environments in the Bay of Biscay. Eleven stations were sampled in April 2002 and March 2004 between 80 and 2000 m water depth (mwd). Earlier studies on the temporal variability of phytoplankton primary production suggest that our stations were sampled at the most eutrophic period of the year. In response to the decrease of exported organic matter flux to the seafloor along our bathymetric transect, foraminiferal standing stocks decrease from ~1400–2000 specimens per 50 cm³ on the continental shelf (100–140 mwd) and upper slope (550 mwd) to about 400 specimens per 50 cm³ at mid-slope stations (2000 mwd). At all stations, the faunas contain an important amount of small opportunistic species that are favored by seasonal phytodetritus input. On the continental shelf where phytoplankton bloom, events may be geographically restricted; the foraminiferal response is dependent on the distance to the surface-water primary-production cells. *Textularia porrecta* is very abundant at an 80-m-deep station that is close to the coast and characterized by a high sedimentation rate of fine-grained particles. Foraminiferal faunas are dominated by *Nonionella iridea*, *Cassidulina carinata* and *Bolivina* ex. gr. *dilatata* at the outer-shelf stations (110–140 mwd) that are under the direct influence of spring bloom phytodetritus input in the northern Bay of Biscay. A fauna dominated by *Bolivina dilatata*/*spathulata* and *Bolivina subaenariensis* is found in the southeastern Bay of Biscay at a 140-m-deep outer-shelf station located seaward of the Adour River estuary, where the sediment is probably enriched in terrestrial organic matter. Apparently, differences in foraminiferal composition between outer-shelf areas in the northern and southeastern Bay of Biscay are related to differences in organic matter quality. On the continental slope, a bathymetric zonation of taxa is observed from upper-slope sites (550–1000 mwd) rich in *Epistominella exigua* and *Uvigerina peregrina* to mid-slope stations (1600–2000 mwd), where *Nuttallides pusillus* and *Gavelinopsis translucens* dominate the small-sized living fauna. This bathymetric foraminiferal zonation probably reflects a trophic gradient between upper-slope eutrophic stations and mid-slope, more oligotrophic sites. Our zonal description of small-sized living foraminifera (63–150 µm) is new for the Bay of Biscay and may provide the basis to reconstruct former export production regimes in marginal paleo-environments from temperate latitude areas.

URL de la notice <http://okina.univ-angers.fr/publications/ua3930> [6]
DOI [10.2113/gsjfr.37.1.12](https://doi.org/10.2113/gsjfr.37.1.12) [7]
Lien vers le document <http://dx.doi.org/10.2113/gsjfr.37.1.12> [7]

Liens

- [1] [http://okina.univ-angers.fr/publications?f\[author\]=6326](http://okina.univ-angers.fr/publications?f[author]=6326)
- [2] <http://okina.univ-angers.fr/christophe.fontanier/publications>
- [3] <http://okina.univ-angers.fr/f.jorissen/publications>
- [4] <http://okina.univ-angers.fr/christine.barras/publications>
- [5] [http://okina.univ-angers.fr/publications?f\[author\]=6409](http://okina.univ-angers.fr/publications?f[author]=6409)
- [6] <http://okina.univ-angers.fr/publications/ua3930>
- [7] <http://dx.doi.org/10.2113/gsjfr.37.1.12>

Publié sur *Okina* (<http://okina.univ-angers.fr>)