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Epifaunal sampling in the Celtic Sea

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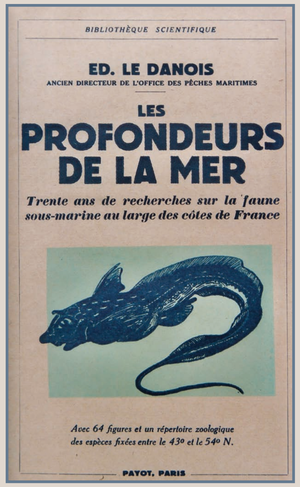
The Celtic Sea is an extensive area of continental shelf to the south-west of the British Isles. Despite having important fisheries for hake, megrim and anglerfish, the structure of epibenthic communities in this area have been little studied since the pioneering studies of Le Danois in the first half of the 20th Century. During the period 2000–2006, approximately 150 tows with 2m-beam trawl have been undertaken during groundfish surveys of this area. Catches along the edge of the continental shelf (130–350 m deep) were characterised by large numbers of the anemone *Actinauge richardi*, with the hermit crab *Pagurus prideaux* dominating on coarse grounds in shallower waters. This poster describes the spatial distribution of the epibenthic fauna.

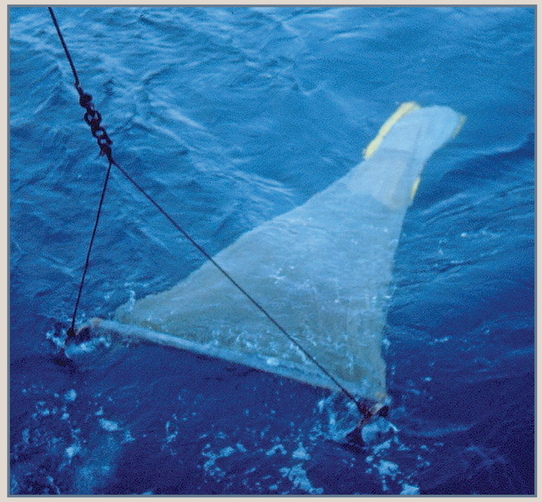
1948 saw the publication of *Les Profondeurs de la Mer* by Edouard Le Danois[1,2]. This book describes the marine fauna occurring in the Celtic Sea and Bay of Biscay, from south-western Ireland to the Cantabrian Sea.



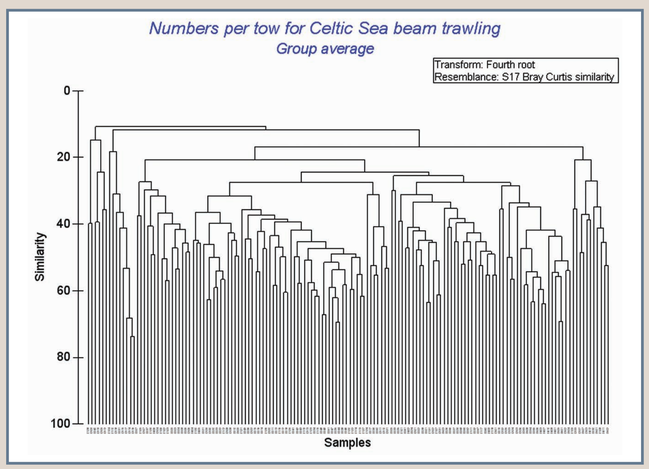
Despite the important demersal fisheries in this region, there are comparatively few contemporary accounts of the epibenthic fauna and their assemblages[3].

Epibenthic sampling has been undertaken on RV *Cirolana* (March, 2000-2002) and RV *Cefas Endeavour* (November, 2003-2006) during annual groundfish surveys. To date over 150 samples have been taken, in waters ranging from 35-480 m depth.

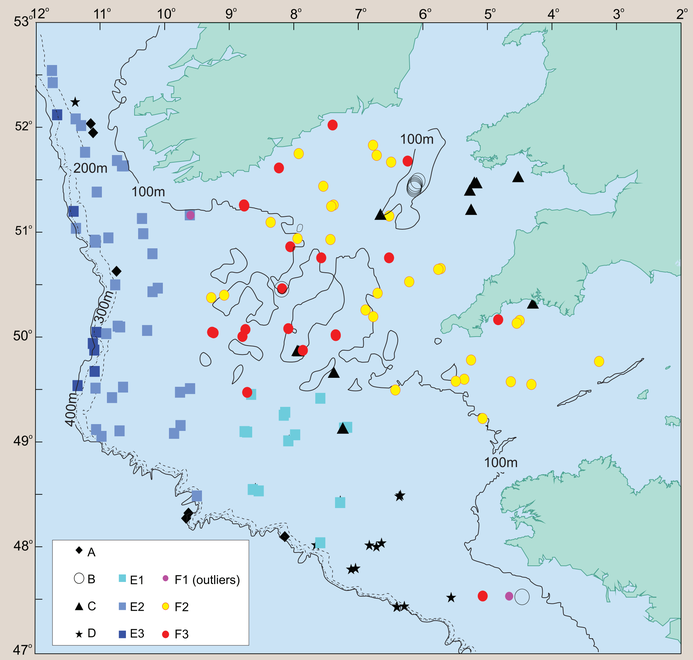
Samples were collected with a steel 2m-beam trawl, with tows of five minutes duration.



Cluster analysis of abundance data (numbers per tow) was used to identify broad categories of epibenthic assemblage in the area.



Distribution of epibenthic assemblages in the Celtic Sea



Dominant fauna occurring in epibenthic assemblages in the Celtic Sea. Species are the ten dominant species and are listed in descending order.

E3; Depth: 260–480 m; Mean similarity: 41.0%	
Leptometra celtica	*Actinauge richardi*
Dichelopandalus bonnieri	*Macropipus tuberculatus*
Processa spp.	*Philocheras echinulatus*
Pontophilus spinosus	*Phycis blennoides*
Scaphander lignarius	*Lepidorhombus boscii*
E2; Depth: 114–350 m; Mean similarity: 42.3%	
Actinauge richardi	*Processa* spp.
Pycnogonum littorale	*Lepidorhombus whiffiagonis*
Caryophyllia smithii	*Pagurus variabilis*
Ophiothrix lütkeni	*Macropipus tuberculatus*
Pagurus prideaux	*Callionymus maculatus*
E1; Depth: 132–185 m; Mean similarity: 41.6%	
Pagurus prideaux	*Crangon allmanni*
Anapagurus laevis	*Ophiura affinis*
Processa spp.	*Galathea* spp.
Macropipus tuberculatus	*Pycnogonum littorale*
Caryophyllia smithii	*Ophiura ophiura*
A; Depth: 152–400 m; Mean similarity: 22.0%	
Actinauge richardi	*Pagurus variabilis*
Pycnogonum littorale	*Helicolenus dactylopterus*
Luidia sarsi	*Galathea* spp.
Scaphander lignarius	*Pennatula phosphorea*
Aporrhais serresianus	*Sepiola atlantica*
D; Depth: 132–232 m; Mean similarity: 34.0%	
Pagurus prideaux	*Colus gracilis*
Stichastrella rosea	*Antedon petasus*
Porania pulvillus	*Caryophyllia smithi*
Macropipus tuberculatus	*Ebalia tuberosa*
Anseropoda placenta	*Hyalinoecia tubicola*
C; Depth: 35–130 m; Mean similarity: 28.9%	
Ophiura ophiura	*Pagurus prideaux*
Crangon allmanni	*Turritella communis*
Liocarcinus holsatus	*Macropodia rostrata*
Pagurus bernhardus	*Trisopterus minutus*
Anapagurus laevis	*Astropecten irregularis*
B; Depth: 110–116 m; Mean similarity: 36.8%	
Nucula sulcata	*Aporrhais pespelecani*
Alpheus glaber	*Pontophilus spinosus*
Amphipoda	*Dichelopandalus bonnieri*
Nephrops norvegicus	*Amphiura* spp.
Processa spp.	*Goneplax rhomboides*
F2; Depth: 66–130 m; Mean similarity: 37.0%	
Pagurus prideaux	*Inachus dorsettensis*
Asterias rubens	*Ophiura ophiura*
Crangon allmanni	*Hyalinoecia tubicola*
Pagurus bernhardus	*Anapagurus laevis*
Processa spp.	*Liocarcinus holsatus*
F3; Depth: 49–148 m; Mean similarity: 39.7%	
Crangon allmanni	*Dichelopandalus bonnieri*
Processa spp.	*Astropecten irregularis*
Liocarcinus depurator	*Philocheras echinulatus*
Pontophilus spinosus	*Munida rugosa*
Turritella communis	*Anapagurus laevis*

References

1. Le Danois, E. (1948) *Les Profondeurs de la Mer. Trente ans de Recherches sur la Faune Sous-Marine au Large des Côtes de France.* Payot, Paris, 303 pp.
2. Letaconneux, R. (1970). Edouard Le Danois (1887–1968). *Journal du Conseil International pour l'Exploration de la Mer*, 33, 122–123.
3. Ellis, J. R., Lancaster, J. E., Cadman, P. S. and Rogers, S. I. (2002) The marine fauna of the Celtic Sea. In *Marine biodiversity in Ireland and Adjacent Waters* (ed J. D. Nunn). Ulster Museum, Belfast, pp. 45–65.