Preliminary data on abundance and structure of macrozoobenthic assemblages from West Antarctica (Bellingshausen Sea and Antarctic Peninsula)


INTRODUCTION
In contrast to the Weddell Sea, where several expeditions have been carried out and the benthos has been more thoroughly investigated, no expedition has focused its research efforts on studying the Pacific High Antarctic sector and as consequence our knowledge regarding the wide distribution and composition of benthic fauna of this zone is quite poor.

MATERIAL AND METHODS
During ‘Bentart-2003’ Spanish cruise (January-March 2003), 28 stations were sampled on board the R/V Hespérides using an Agassiz trawl, covering an area from the Bellingshausen Sea to Antarctic Peninsula continental shelf, from 48 m to 2045 m depth. Macrozoobenthos numerical abundances and biomass data of were collected to characterize its assemblages composition. Furthermore sedimentologic parameters, CTD profiles and water samples were taken at 18 stations to determine vertical distribution of temperature, salinity, and fluorescence, inorganic nutrients, dissolved oxygen, nitrogen concentrations, chlorophyll a and production.

RESULTS
A total of 27,781 macrobenthic invertebrates specimens, belonging to 45 high-range taxa (phylum, class, order) were collected. The taxa with highest number of individuals were Polychaeta Sedentaria (34.6%) and Bryozoa (20.3%), while highest biomass were yielded by Holothuroidea (28.6%), Ascidiae (27.3%) and Demospongia (14.4%). Ophiuroidea was the more frequent taxon, collected at 26 stations; Polychaeta Errantia, Bryozoa, Demospongia, Holothuroidea and Polychaeta Sedentaria were collected at more than 70% of stations. The cnidarians Styl洛杉, Scyphozoa, Pteropodacea and Pycnogonida were collected at only one station.

The preliminary results shows faunistic composition differences between E Bellingshausen sector and remaining zones (Amundsen Sea, Bellingshausen W, Peter I Island and Antarctic Peninsula), indicating two different environmental conditions of sea bottom and water column (Fig. 1 & MRF).

Figure 1. Occurrence of main taxa

Figure 1. Dendrogram (log x+1 transformed numerical abundance data, Bray-Curtis index, complete linkage)

Remaining zones
- 17 stations
- Suspension-feeders dominance (green colour in cakes) (68% in weight)
- Highest density and biomass (1233 indiv., 11.4 kg and 20 stations)
- Different depths (45 to 1,440 m)
- Mud-sandy bottoms
- Coldest waters with highest dissolved oxygen and primary production.

Bellingshausen East
- 10 stations
- Dominance of detritivore and carnivore fauna (grey colour) (83.4% of weight)
- Low taxonomic richness, abundance and biomass (14 taxa, 70 indiv, and 660 g, mean average by station)
- Deep stations (490-1950 m)
- Fine mud with higher gravels percentages (>20%) and stones
- Highest salinity and lowest primary production.