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BIVALVES FROM CAPE MELVILLE FORMATION (EARLY MIOCENE, KING GEORGE ISLAND, ANTARCTICA): TAPHONOMIC SIGNATURES AND PRELIMINARY INTERPRETATIONS

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The Cape Melville Formation, cropping out at Melville Peninsula, northern King George Island (Fig.1) consists of about 200 m of shales and silty shales with subordinate intercalation of siltstone and fine-grained sandstone of glacial marine facies. Among the rich invertebrate fauna that includes corals (Roniewicz e Morycowa, 1987), brachiopods (Biernat *et al.*, 1985), echinoderms (Jesionek-Szymañska, 1987) and crustaceans (Förster *et al.*, 1987), bivalves are an important but yet poorly studied component (Anelli *et al.* no prelo).

We present herein the results of a qualitative and quantitative taphonomic analysis of the bivalves concentrations obtained from four geological sections from Cape Melville Formation (Fig.2).

1. Penguin Rookery Section: the section consists of two assemblages represented by eight taxa (n=227) shared in two beds; the first bed (n=137, 60%) is mainly composed by remais of the shalow infaunal deposit-feeder *Ennucula musculosa* (n=91, 66%) and subsidiary gastropods and indeterminate bivalves. *E. musculosa* is chaotically distributed (Perpendicular=37%, Oblique=31%, Concordant=30%), mainly with closed articulated valves (n=86, 95%) and few disarticulated (n=76, 84%) with good quality of preservation (n=72, 79%); the assemblage from the second bed (n=90, 40%) is mainly composed by the shalow infaunal deposit-feeder *Yoldia peninsularis* (n=76, 84%) and subsidiary gastropods and indeterminate bivalves. *Y. peninsularis* is preferred concordant accordingly to the bed (n=43, 57%) and most of them with closed articulated valves (n=52, 69%), almost with no fragmentation (n=64, 84%) and good quality of preservation (n=17, 22%).

2. Hard Ground Section: the section consists of an assemblage represented by seven taxa (n=211) where stands out the shalow infaunal deposit-feeder *Ennucula frigida* (n=130, 62%) and subsidiary gastropods, corals and indeterminate bivalves. *E. frigida* is chaotically distributed (Perp.=30%, Obl.=36%; Conc=39%), preferred closed articulated (n=117, 90%), almost with no fragmentation (n=94, 72%) and with good quality of preservation (n=59, 45%).

3. Chamine Section: the section consists of an assemblage represented by seven taxa (n=69) where stands out the infaunal deposit-feeder *Neilo* (*Neilo*) *rongelii* (n=22, 32%), the deep infaunal suspension-feeder *Panopea* (*Panopea*) cf. *Panopea* sp. (n=10, 14%) and subsidiary gastropods, crustaceans and indeterminate bivalves. *N.* (*N.*) *rongelii* is preferred concordant (n=11, 50%), closed articulated (n=16, 73%), with no fragmentation and good quality of preservation; *P.* (*P.*) cf. *P. regularis* is preferred perpendicular (n=8, 80%), with closed articulated valves (n=9, 90%), no fragmentation and good quality of preservation.

4. Lava Crag Section: the section consists of an assemblage represented by four taxa (n=40) where are included infaunal deposit-feeder *Neilo* (*Neilo*) *rongelii* (n=17, 43%) and subsidiary crabs and indeterminate bivalves. *N.* (*N.*) *rongelii* is preferred concordant (n=12, 71%) and all the specimens are disarticulated, with no fragmentation and good quality of preservation.

Therefore, the objective of this study is to characterize the taphonomic signatures and elucidate if these acummulations were controled by paleoeologic, biostratinomic and/or diagenetic patterns. The Penguin Rookery and Hard Ground Sections are very close for its faunal composition and taphonomic caracteristics, as well as Chamine and Lava Crag Sections. This sort of study is essencial for the comprehension of the genesis of the fossil concentrations and for modern paleobiology analysis.

Seminário de Pesquisa Antártica, 13, 2005, São Paulo. Resumos.

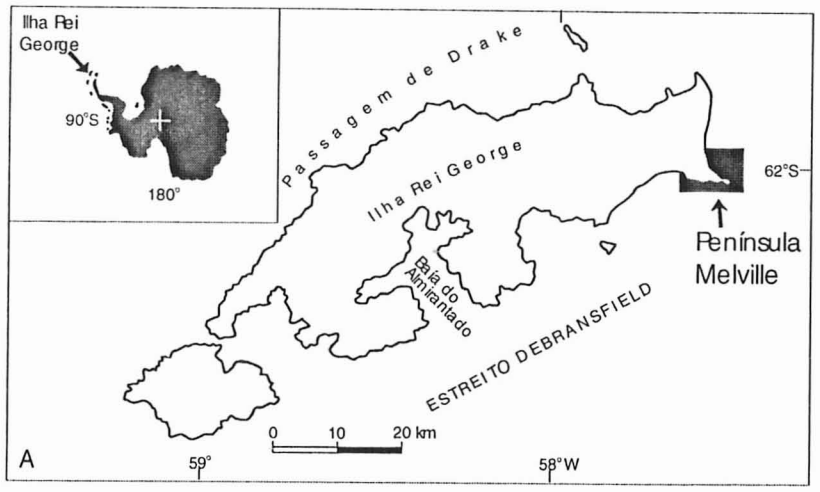

Fig.1: Locality map

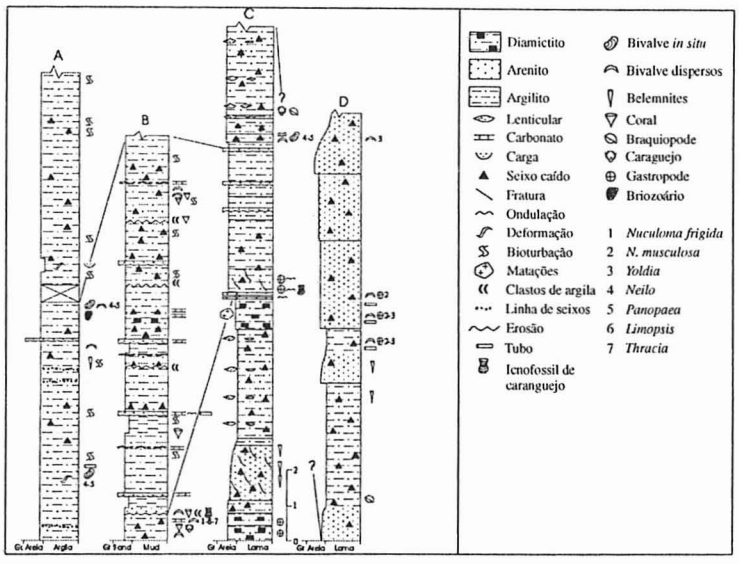

Fig.2: Geological sections from Cape Melville Formation

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