

BIVALVES FROM THE CAPE MELVILLE FORMATION, MOBY DICK GROUP (EARLY TERTIARY), KING GEORGE ISLAND, ANTARCTICA

Anelli, L.E.¹; Santos, P.R. ¹; Rocha-Campos, A.C. ¹; Perinotto, J.A.J. ², Tomio, A. ¹

¹Instituto de Geociências da Universidade de São Paulo, IGc/USP

²Instituto de Geociências e Ciências Exatas da Universidade Estadual Paulista, IGCE/UNESP e Universidade Guarulhos, UnG

Bivalve specimens studied were collected from the Cape Melville Formation (Early Tertiary) cropping out at Cape Melville, northern King George Island. The Cape Melville Formation, around 200 m thick, consists of glacial marine, gray to greenish, brownish to dark gray, clayey to silty shales or mudstones with subordinate intercalation of thin calcareous sandstone and fine sandstone (Perinotto *et al.*, 2003, this volume). The shales preserve a rich and diversified invertebrate fauna of mollusks (bivalves, gastropods and scaphopods), brachiopods, solitary corals, polychaetes, crabs, echinoderms and bryozoans. Bivalves occur concentrated or dispersed in the shales. Their taxonomy and taphonomy are under study as a contribution to the understanding of the glacial marine environment of deposition and paleontological age of the Cape Melville Formation. Specimens come from four stratigraphic sections in the upper part of the formation informally denominated: Lava Crag, Hard Ground, Chaminé and Pingüineira. This part of the formation is characterized by metric thick, fining upward cycles of thick shale with dropstones and thin (cm) coarse, bioturbated, calcareous sandstone. These elements seem to represent respectively alternating episodes of mud deposition through settling of fines and turbidity currents and abundant rafting of clasts from icebergs, and condensed sections ("hard grounds") generated under starved basin conditions. Bivalves initially identified include seven species representing the orders: Nuculoidea (families Nuculidae and Nuculanidae?), Arcoidea (families Arcidae and Limopsidae), Myoidea (family Hiatellidae) and an unidentified taxon, of probable Early Miocene age. Muscle scars of nuculoids and arcoids species are exceptionally well preserved and allow interpretation of muscle insertions of the taxons. Taphonomic evidence indicates that bivalves of shell concentrations were displaced laterally across the muddy sea bottom by episodic diluted mass gravity flows (Anelli *et al.*, 2003, this volume). Taxonomic affinity of the bivalve assemblage from Cape Melville Formation with other Early Tertiary faunas southern Hemisphere is not entirely clear yet. Its understanding is relevant for interpreting the paleobiogeographic evolution of western Antarctica during the Paleogene.

CNPq-PROANTAR, Centro de Pesquisas Antárticas-IGc/USP