

OLIGOCENE FOSSILS FROM CAPE VAURÉAL (LOW HEAD MEMBER, POLONEZ COVE FORMATION), KING GEORGE ISLAND, ANTARCTICA *

Fernanda QUAGLIO ¹; Luiz Eduardo ANELLI ¹; José Alexandre J. PERINOTTO ^{2,3};
Paulo Roberto dos SANTOS ¹; Antonio Carlos ROCHA-CAMPOS ¹

¹ Departamento de Geologia Sedimentar e Ambiental-IGc-USP

² CEPPE/Universidade Guarulhos-UnG

³ Departamento de Geologia Aplicada-IGCE-Unesp – Rio Claro

Keywords: Invertebrates; Taxonomy; Oligocene; King George Island; Antarctic

New data on Paleontology from the Low Head Member (Early Oligocene, Polonez Cove Formation), cropping out at Vauréal Peak, Admiralty Bay, King George Island are presented here.

Preliminary results of geological studies at Vauréal Peak locality (Perinotto *et al.* 2004) indicate that Polonez Cove Formation corresponds to a transgressive sequence of glacioterrestrial sediments, including polymictic diamictites bearing exotic clasts of igneous and metamorphic lithologies at the base (Krakowiak Member), and intercalated matrix-supported conglomerates, sandstones and sandy diamictites bearing marine fossils at the top (Low Head Member) (fig. 1).

Available data based on K-Ar dates, stratigraphy and Sr-isotope dating from the type-area indicates probably Early Oligocene age for this member (Birkenmajer and Gazdzicki, 1986; Dingle *et al.*, 1997).

The type section of the Low Head Member is richly fossiliferous and contains marine invertebrate, macro- and microfossils, including nannoplankton, diatoms, foraminifers, polychaetes, worms, bryozoans, brachiopods, gastropods, ostracods and echinoderms (Gazdzicki, 2003).

This work represents the first taxonomic study on Early Cenozoic invertebrates of the Vauréal Peak locality. Specimens identified include three bryozoan species of the Order Cyclostomata; one terebratulid brachiopod (*Paraladingia?* sp.); one indeterminate scaphopod; two bivalve species of the orders Pterioidea [*Limea?* (*Limea*) sp. and *Adamussium* sp.]; two *Bivalvia* species *incertae sedis* and one probable fragment of plant (fig. 2). Some of these taxa are known from Paleogene and Early Neogene strata of other localities in Western Antarctica suggesting relative cosmopolitan distribution of the fauna.

The paleontological study is being complemented by Sr-Sr dating and stable isotopic analyses of biogenic carbonate (shells) in order to refine the age of the Low Head Member and the understanding of the environment of deposition of the glacial-marine rocks. These data will help to clarify the correlation and affinities of the Low Head assemblage with regard to other southern hemisphere Cenozoic faunas and the marine gateways of migration of the Cenozoic invertebrate biota which resulted in the modern biogeography distribution in Antarctic.

BIRKENMAJER, K., GAZDZICKI, A. 1986. Oligocene age of the Pecten Conglomerate on King George Island, West Antarctica. *Bulletin, Polish Academy of Sciences: Earth Sciences* 34(2): 219-226.

DINGLE, R.V.; MCARTHUR, J.M.; VROON, P. 1997. Oligocene and Pliocene interglacial events in the Antarctic Peninsula dated using strontium isotope stratigraphy. *Journal of the Geological Society, London* 154: 257-264.

GAZDZICKI, A. 2003. Tertiary ecosystems of Antarctica. *XXIX International Polar Symposium, Cracow*.

PERINOTTO, J.A.J.; ANELLI, L.E.; SANTOS, P.R. DOS; ROCHA-CAMPOS, A.C. 2004. Geologia Terciária da área de Cabo Vaurel, Ilha Rei George, Antártica. *XII Seminário Sobre Pesquisa Antártica, Instituto de Geociências, Universidade de São Paulo*.

New 203

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

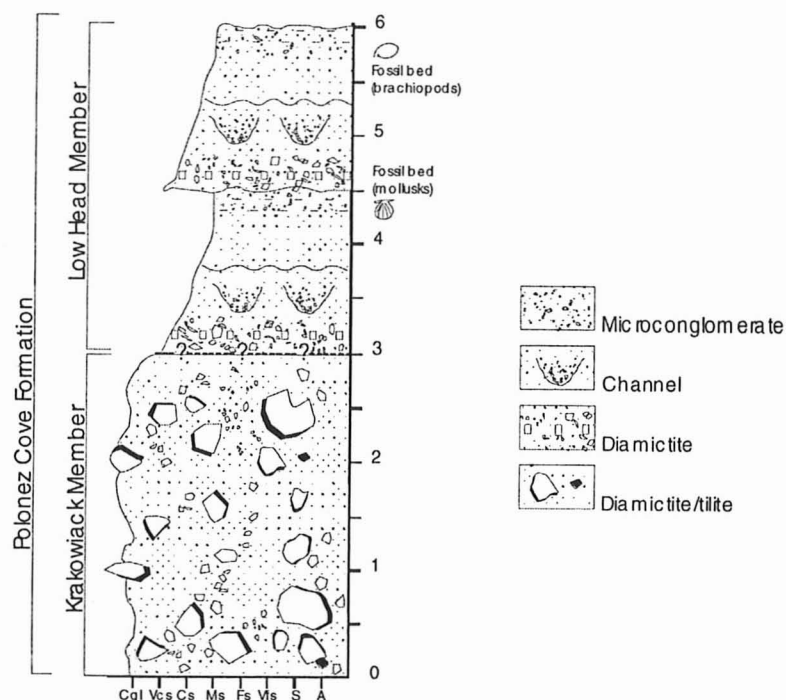


Fig.1: Stratigraphic section of the Polonez Cove Formation at Vauréal Peak, King George Island, Antarctica.

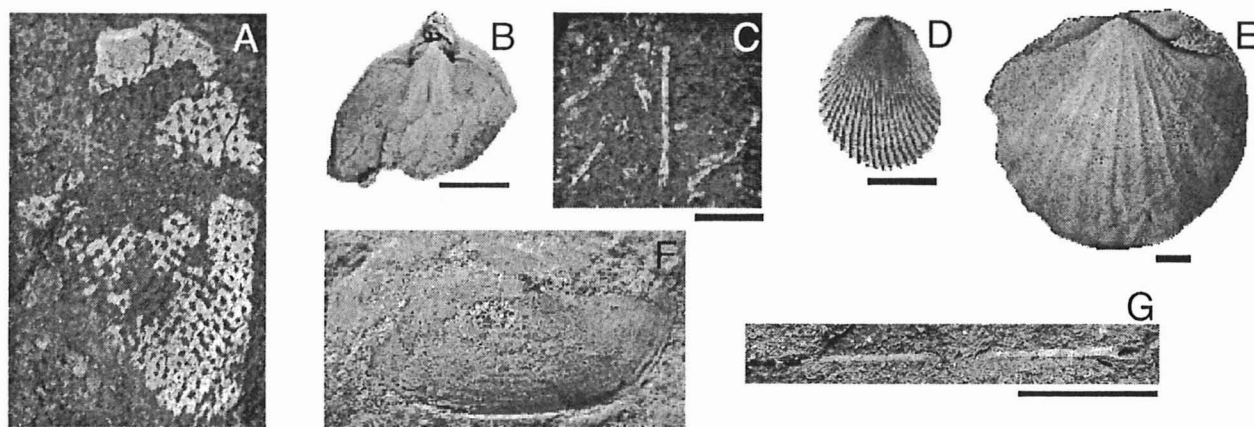


Fig.2: Fossils from Low Head Member at Vauréal Peak locality. A, Bryozoa. B, Brachiopoda. C, Scaphopoda. D-F, Bivalvia; D, Limidae; E, Pectinidae; F, *incertae sedis*; G, plant fragment. All bars = 1 cm.

(*) Programa Antártico Brasileiro (PROANTAR) / CNPq

(**) CAPES fellowship