

**STABLE CARBON ISOTOPES OF THE LATE CAMBRIAN MINARET FORMATION,  
ELLSWORTH MOUNTAINS, WEST ANTARCTICA**

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The Late Cambrian Minaret Formation is exposed in the Heritage Range of the Ellsworth Mountains. Its thickness increases from about 8 m at Springer Peak to several hundred meters in the Marble Hills area. The limestones mainly consist of open marine oolitic and oncolithic grain- to rudstones at Springer Peak (Buggisch and Webers, 1992). Trilobites represent the Late Dresbachian *Elvinia* Zone (Shergold and Webers, 1992).

Analyses of stable carbon and oxygen isotopes were performed on whole rock samples, components and cements. Measured  $\delta^{13}\text{C}$  values range from -2 to +6 ‰ (V-PDB),  $\delta^{18}\text{O}$  values are between -9 and -14 ‰. Whereas oxygen isotopes are clearly altered during diagenesis and low grade metamorphism, most carbon isotopes values probably represent sea water composition during limestone deposition.  $\delta^{13}\text{C}$  values are between -2 and +2 ‰ in Phanerozoic times with only few excursions to extreme positive or negative values. A large positive  $\delta^{13}\text{C}$  "SPICE" excursion during the Late Cambrian Pterocephaliid bioterm was described by Saltzmann et al. (1998) from Utah and Nevada. The  $\delta^{13}\text{C}$  values of the Minaret Formation fall in the range of the SPICE excursion and corroborate the biostratigraphic assignment within the Late Cambrian.

Buggisch, W. and Webers, G.F. 1992: Facies of Cambrian carbonate rocks, Ellsworth Mountains, West Antarctica. Geol. Soc. Amer. Mem. 170, 81-100.

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Saltzmann, M.R., Runnigar, B. and Lohmann, K.C. 1998: Carbon isotope stratigraphy of Upper Cambrian (Steptoean Stage) sequences of the eastern Great Basin: Record of a global oceanic event. Geological Society of America Bulletin, v. 110, p. 285-297.