

Removal of Alkaline Earth Elements from the Porewaters of Recent Sediments of King George Island, Antarctica

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A prominent removal of alkaline earth metals from the porewaters of recent sediments was observed from a 266 cm-long core that was retrieved from the coast of Brazilian Base in King George Island; Porewater Ca, Mg and Sr decrease by 53%, 15% and 49%, respectively, compared to their bottom water composition. Their decreases appear to be associated with carbonate precipitations in the sediment columns. It is very likely that carbonate ions, accumulated in porewater due to the decomposition of sedimentary organic matter, are combined with those alkaline earth elements to form carbonate precipitations in the sediments. Since carbonate precipitation could serve as a new mechanism in lowering the level of carbon dioxide in the atmosphere, increasing reports on the carbonate precipitation, particularly from the polar sedimentary environments, should deserve to solicit systematic investigations on this context.