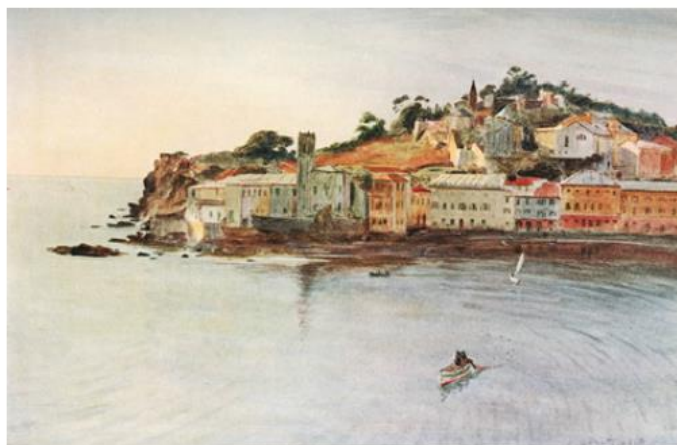


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P89 - CHARACTERIZATION OF THE ELEMENT CONTENT IN LACUSTRINE ECOSYSTEMS IN TERRA NOVA BAY, ANTARCTICA

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In this work nine lacustrine ecosystems belonging to four areas of Terra Nova Bay, Northern Victoria Land, Antarctica, were investigated in order to gain insight into the natural processes regulating species distribution and to point out the occurrence of possible present or future local and/or global anthropogenic contamination [1]. Major, minor and trace elements were determined in freshwater, algae, mosses and (for one site) lichens. Lake water composition was found to be influenced by several factors: marine spray, weathering of rocks and sediments, input of meltwater, presence of biological activity and lake geographical position. Algae show generally higher concentrations of elements than mosses and the calculated enrichment factors confirmed the capability of algae to bio-accumulate elements from waters, not only nutrients but also potentially toxic metals. Data were treated with chemometric techniques; principal component analysis showed interesting correlations among elements, which were interpreted taking into account their sources and chemical behaviour [2]. Hierarchical cluster analysis highlighted differences and similarities among the investigated lakes. No evidence of anthropogenic contamination was found, so it can be assumed that element distribution in such ecosystems still represents the result of natural processes.

[1] M. Gasparon, J.S. Burgess, Human impacts in Antarctica trace-element geochemistry of freshwater lakes in the Larsemann Hills, East Antarctica, *Environ. Geol.*, 39 (2000) 963-976.

[2] O. Abollino, M. Malandrino, I. Zelano, A. Giacomino, S. Buoso, E. Mentasti, Characterization of the element content in lacustrine ecosystems in Terra Nova Bay, Antarctica, *Microchem. J.*, 105 (2012) 142-151.