



Pedobiological processes in the Antarctic coast regions

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Pedobiologic and chemical researches performed to soil samples gathered by Negoita in the time and by occasion of Chinese expedition in Antarctica, in 2003 year, have made evident a clear evolution of the ground to the protosol or podsol, in King George Peninsula, but also an absence of vital manifestation in the thin layer of broken rock from Grove Mountains. Towards the East of Antarctic Continent all the coast regions are barren, rough and sometimes there are birds colonies where are their nests. All long of the small streams, on the slow slope there are some patches of hundred square metres covered with algae, moss or lichens which give to the ground different specific colours: green, brown-reddish or grey. In a few biotops, where in geologic times, some inferior vegetation grew in small water accumulations and dieing, they sank down and changed into peat. When these water accumulations disappeared the peat layer become a good biotope for the development of vital and enzymatic activities.

Our analysis results show that in King George Peninsula the soils reveal some vital and enzymatic activities higher than in Grove Mountains and the other zones towards the east of the Antarctic Continent (Miror Peninsula, Stornes Peninsula and Broknes Peninsula – Law-Racovita Base). We are comparing the different zones by the partial indicators (Indicator of Vital Activity Potential - IVAP % and Indicators of Enzymatic Activity Potential - IEAP %) and the Synthetic one (Biological Synthetic Indicator - BSI %) created by Stefanic (1994) - ISB % of soil from King George Peninsula is 3.83 – 25.69 and in the coast of Antarctica is 0.54 – 28.19. The evolution of soils is limited by the temperatures and moisture realized in the superficial layer of soil and of the

optimal periods. Mc Namara (1963) mentioned some temperatures between $+41^{\circ}\text{C}$ and -41°C at the soil surface and Averianov (1968), between $+25^{\circ}\text{C}$ and -32°C . Mc Namara (1969) registered the thaw of soil till 1 m. But, the warm days are little and the active period for organic matter (biomass and plants) is also very short.