Natural Resources and Environmental Issues

Volume 15 *Saline Lakes Around the World: Unique Systems with Unique Values*

Article 35

1-1-2009

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The Role of Phytoplankton in Sediment Formation in Lakes with Pelogenous Potential

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The peloids formed in lakes and reservoirs with saline water differ in composition, depending on the organic and the inorganic compounds that participate in their formation. Based on the contribution of plant material in the formation of sediments in pelogenous lakes, the micro- and macrophyte populations in Braila Salt Lake, Fundata Lake, Techirghiol Lake and Amara Lake, differing in physico-chemical characteristics, were studied in the years 1983–2005, to monitor their presence and distribution in lenthic facies and to elucidate the structure of the phytoplankton communities (Figure 1). Samples have been collected from pelogenous lakes during the summer season, when the plankton is well developed, from a number of represetative sampling stations. Total plankton was analyzed qualitatively, and quantitative determinations were performed for phytoplankton. Samples were also collected for the determination of the physical and chemical properties of the water and its microbiological quality, determining the level of the bacterial pollution. After identification of the phytoplankton species and the determination of their abundance, the following types were found to play an important role in the productivity of these lakes with pelogenous potential:

–Filamentous algae: *Cladophora crystallina*, *Enteromorpha clathrata*, *Spirogyra tenuissima*, *Ulotrix zonata*, *Rhizoclonium hieroglyphicum*. These species contributed important amounts of organic material in Techirghiol, Fundata and Braila Salt Lakes.

–Submerged macrophytes: *Potamogeton pectinatus*, *Myriophyllum spicatum*; these represent the major source of organic material in the Fundata and Amara lakes.

–Emerged macrophytic vegetation: *Phragmites communis*, *Typha angustifolia*; these are important in the ecosystem of the therapeutical lakes Amara and Fundata.

Microalgae (cyanobacteria, diatoms, euglenophyta) contribute a smaller, but constant amount of organic material to the peloidogenesis process in all four studied lakes. When the salt composition of the lakes increases to values exceeding 100 g/l, as happens for example in Braila Salt Lake, the biological diversity and biomass are reduced, and the contribution of organic material is accordingly lower, relative to the amounts of inorganic material deposited.

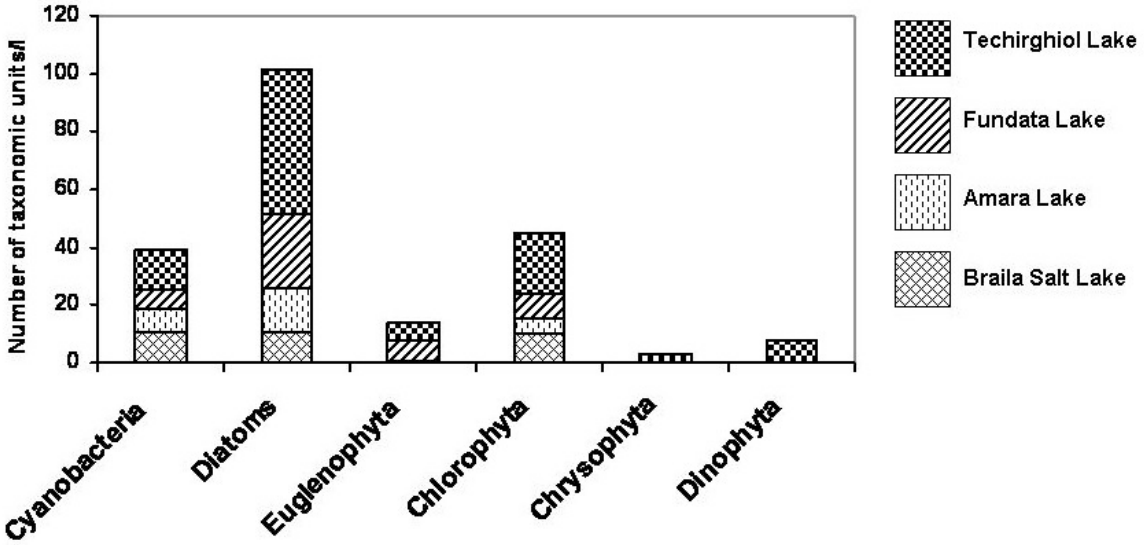

Figure 1–Variation of phytoplankton composition in lakes of different salinities (1983–2005).