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The relationship between distribution of benthic foraminiferal assemblages and geochemical properties in the Iznik Lake (Turkey) bottom sediment

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Abstract

Iznik Lake, which is the largest freshwater lake in the Marmara region, lies at the tectonically active interface between the Eurasian plate to the north and the Anatolian plate to the south. The Iznik Lake basin has a tectonic origin and is predominantly controlled by the E-W trending middle branch of the North Anatolian Fault Zone (NAFZ). There occur numerous small-scale gradual faults running parallel to the main fault line. Apart from faults that exclusively control the lake area, the Iznik Basin is also actively controlled by land faults that bound shore alluvium. Pleistocene sediments and terraces that were affected by tectonic activity occurring around the basin indicate that the lake uplifts from time to time. In the northern parts of the basin, normal gradual faults developed at an angle to the strike-slip fault as well as alluvial fans of the Quaternary age which were deposited at the mouth of the fault scarps on the southern shores.

Although they are found in very low quantity, finding of marine origin genus and species of foraminifera such as, *Rhapdammina abyssorum*, *Spiroloculina ornata*, *Siphonaperta aspera, Cycloforina contorta*, *Quinqueloculina* cf. *Auberiana, Q. laevigata*, *Q. seminula, Miliolinelle subrotunda*, *Triloculina marioni*, *Sigmoilinita costata*, *Peneroplis pertusus*, *Globocassidulina subglobosa*, *Neoeponides bradyi*, *Neoconorbina terquemi*, *Rosalina bradyi, R. floridensis, Cibicides advenum, Lobatula lobatula*,

Asterigerinata mamilla, *Nonion depressulum*, *Ammonia parkinsoniana*, *A. tepida, Elphidium aculeatum, E. depressulum.* These data suggest that water connection between the Black Sea and the Marmara Sea in the Quaternary may have been established such a water-way the Sakarya River-Geyve Gorge-Iznik Lake besides the Strait of Istanbul.

This study is aimed at investigating the geochemical properties of 7 surface sediment samples compiled from 3 lines in Iznik Lake. According to the survey, sediments encountered in the formation of gypsum crystals feature when considered together with the magnetism of Iznik Lake and the surrounding area suggest that are affected by new tectonics. Again this geochemical study the magnetic properties of the heavy-mineral contents, the entire amount of magnetite and hematite and heavy-mineral content has appeared to be affected by changes in the process.

Key words: benthic foraminifer, bottom sediment, Iznik Lake (Turkey), sediment geochemistry.