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Assessment of impact of geochemical and environmental properties on the meiofauna (benthic foraminifer, ostracod, mollusc) assemblages: A case study in The Late Quaternary Sediments In The Gulf Of Izmir (Eastern Aegean Sea)

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The drilling samples collected from varying depths at 1.00-13.00 m at four different localities of Karsiyaka, Bayrakli, Inciralti and Urla (Çesmealti) in the Gulf of Izmir were studied for their geochemical, sedimantological and micropaleontological properties. The purpose of this study is to describe the meiofauna of the sediments, to determine the pollution history of the gulf and to show the effect of the pollution on the foraminifera and ostracoda. Examination of the loose sediments reveals that the gulf has been affected by the sea for a long time, and it had a rich microfaunal assemblages. Both foraminiferal tests and ostracod carapaces have coloring, and morphological abnormalities have been determined in foraminiferal tests. *Peneroplis pertusus* (Forskal) and *P. planatus* (Fichtel and Moll) have blue and black colored tests, while morphological abnormalities were observed on the tests of *Ammonia compacta* Hofker, *Elphidium complanatum* (d'Orbigny), *E. crispum* (Linné), *E. macellum* (Fichtel and Moll). The ostracod carapaces are generally gray-black colored. Heavy metal (Cr, Mn, Zn, Co, Ni, Cu) analyses have been carried out on the sediments of the Gulf of Izmir. Heavy metal concentrations are high in Bayrakli, and low in Urla (Çesmealti). Cr, Mn and Zn values are the highest in Bayrakli, whereas Co, Ni and Cu values are the highest in Inciralti. Scanning Electron Microscope (SEM) analyses were performed and no heavy metal was detected on the white and colored ostracod carapaces. When the white and colored ostracod carapaces are compared, the coloured ostracode carapace has higher Mg content, and also includes Fe, Al, N, Cl and K. Based on the results obtained, it is observed that the Bayrakli region have been more affected by the pollution than Urla (Çesmealti).