GEOCHEMISTRY OF CYANOBACTERIAL MAT ASSOCIATED INTERTIDAL SEDIMENTS FROM MANNAR LAGOON

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Surface sediment samples from the intertidal flats of the Mannar lagoon were collected and analysed microscopically and chemically employing various analytical techniques (Binocular microscope, Scanning Electron Microscope, Microprobe, X-ray diffraction. X-ray Flourescence. Atomic Absorption Spectrometry, Neutron Activation Techniques, Etc.).

Microchemical investigations revealed the presence of biological as well as chemical zoning microbial mats and also their contribution to the sediment. The trace such as Rb, Y, Ni, Cu, Co, Cr, Zn in intertidal sediments were found to be associated with iron and manganese oxide hydrates as well as with the clay contents of the sediments.

The heavy rare earth elements (e.g. Yb and Pr) were also found to be associated with iron and manganese oxide hydrates while the lighter counterparts (e.g. C and La) are associated with heavy minerals (zircon and ilmenite) of the Intertidal sediments.

Further it is found that all REE except Ce are depleted during diagenesis buried alluviam and in peat sequences.

The source of the trace elements in the intertidal sediments were found to be the red beds in the hinterland of the north western coast.