GEOLOGICAL STUDY OF MUTHI LIMESTONE, IN AIZAWL DISTRICT OF MIZORAM, INDIA.

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Abstract

The area around Muthi village in Aizawl district is undertaken for geological and geochemical studies to explore the occurrence of limestone as lenses within the Upper Bhuban Formation. The area under study is located within latitudes $21^0$56'N and $24^0$31'N and longitudes $92^0$16'E and $93^0$26'E. The Upper Bhuban formation constitutes sandstone, shale and siltstone and their admixtures in various proportions. The rocks are poor in mega-biota but the limestone, which constitutes detritally accumulated calcite grains, contains worm tubes, foraminifers (*Ammonia, Miogypsina, Globorotalia, Globigerina, Elphidium*) with some bryozoans, mollusc, arthropod, echinoid fragments. These microfossils are good indicator of limestone classification. Representative Samples from the study area were prepared for XRF and ICP-MS analyses. The concentration of CaO varies from 23.2% to 43.48%. The samples in the Muthi limestone area have low Al_2O_3 + SiO_2 content (average 18.947%). This shows that the clay, silt, sand and authigenous mineral content of limestone is low. In the same way, having a low concentration of MgO (average 2.373%) and high concentration of CaO (average 38.053%). Further, the major oxides was used for the discriminant diagram function analyses for the provenance and tectonic setting of Muthi limestone. The REE concentration is low with negative Eu anomaly.

Keywords: Muthi limestone bioclast, provenance, tectonic setting.