

Sedimentology and Geochemistry of Carbonate Bearing-Argillites on the Southeastern Flank of Mount Cameroon, Likomba

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Abstract : Background and aim: Sedimentological, geochemical and petrographic studies were carried out on carbonate-bearing argillites outcropping at the southeastern flank of Mount Cameroon (Likomba) to determine the lithofacies and their associations, major element geochemistry and mineralogy. Methods: Major elements of the rocks were analyzed using XRF technique. Thermal analysis and thin section studies were carried out accompanied with the determination of insoluble components of the carbonates. Results: The carbonates are classed as biomicrites with siderite being the major carbonate mineral. Clay, quartz and pyrite constitute the major insoluble components of these rocks. Geochemical results depict a broad variation in their concentrations with silica and iron showing the highest concentrations and sodium and manganese with the least concentrations. Two factors were revealed with the following elemental associations, Fe₂O₃-MgO-Mn₂O₃ (72.56 %) and TiO₂-SiO₂-Al₂O₃-K₂O (23.20%) indicating both Fe-enrichment, the subsequent formation of the siderite and the contribution of the sediments to the formation of these rocks. Conclusion: The rocks consist of cyclic iron-rich carbonates alternating with sideritic-shales and might have been formed as a result of variations in the sea conditions as well as variation in sediment influx resulting from transgression and regression sequences occurring in a shallow to slightly deep marine environments.

Keywords : sedimentology, geochemistry, petrography, iron carbonates, Likomba

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