

Crystallization of Calcite and Barite in Fossilization Processes

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Fossilization of organic materials is a very rare event in nature. The process requires specific physical and bioquimical conditions after burial of the organism and usually it must be cooperated by geological phenomena. In Sedimentary Araripe Basin, Southern Ceará State (Brazil), it found a rich fossil deposit of extinct fishes belonging to the lower Cretaceous age (approximately 100 million years old), and large collections are found in "American Museum of Natural History" (New York) and "British Museum" (London). The sedimentation and fossilization processes, were influenced by the separation of the South America and Africa plates, and the formation of the South Atlantic Ocean. The fossilization of these animals generally are the result of early infiltration and permeation of tissues by mineral-charged water that allows the crystalline mineral formations occur in the interior of the fossil. In the present study, we characterize crystals grown during the course of the fossilization process by means of X-ray powder diffraction and Scanning Electron Microscopy. Pure crystals of the Calcite (CaCO_3) and Barite (BaSO_4) have been identified and their morphology analyzed. (This work was partially funded by FAPEMA and CNPq)