

The genesis and occurrence of mottled limestone in the Miocene Subis Limestone, Sarawak

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The occurrence of mottled limestone in the Subis Limestone is restricted to the coral-algal facies found in the Garagok Quarry. Mottles are defined by their dark grey colour in contrast to the cream-coloured limestone that enclosed them. The formation of mottles is partly controlled by the lithology. This can be seen by some mottles having essentially mimicked the forms of fossils or some selective fabric of the rock. Mottles are generally composed of fossiliferous micrite that contains a significantly higher proportion of microspar and/or sparry cement. The types of cement in the mottles is interpreted to have been formed partly in marine waters and partly in phreatic fresh-waters. This indicates that the development of mottles in the Subis Limestone was an early diagenetic event and that their formation is the result of selective fresh-water leaching of partly cemented marine sediments and their subsequent recementation. The absence of mottles in the flank and basal facies of the Subis Limestone gives support to this interpretation.

May-Jun 1992