Title : Microfacies and Depositional Environment of Limestone at Nong Lom and Ban Tham Subdistricts, Dok Khamtai District, Phayao Province

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ABSTRACT

The limestones, which are dispersedly exposed in the Nong Lom and Ban Tham Subdistricts, Dok Khamtai District, Phayao Province, aim to classify carbonate microfacies and grain components for interpreting the depositional environments. Based on the petrographic study of 21 thin sections, the carbonate rocks are classified into four main groups by using the criteria of Dunham (1962) and Folk (1962) including mudstone, wackestone, packstone, grainstone, fossiliferous biomicrite, pelmicrite, packed biomicrite, sparse biomicrite, poorly washed biosparite, pelsparite, washed biomicrite, and oosparite. The main components consist mainly of peloids, ooids, oncoids, intraclasts, and skeletal remains, including algae, unidentified bioclasts, calcimicrobes, bivalves, crinoids, and echinoderms. From the microfacies analysis, nine microfacies are identified, including bioclastic wackestone, peloidal packstone, peloidal wackestone, peloidal grainstone, bioclastic grainstone, oncoidal packstone, bioclastic packstone, bioclastic mudstone, and ooid grainstone. Based on observations and facies analysis, nine major facies, corresponding to specific depositional environments within a carbonate platform, have been established. The depositional environments are lagoon, shoal, and small-scale reef environments. These settings reflect depositional energy levels ranging from low-energy to moderate- to high-energy conditions.

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