Sedimentology of Taungnyo Formation, Mawlamyine, Mudon and Kyaikmaraw Townships, Mon State

Moe Moe Lwin[1] and Day Wa Aung[2]

[1]Mawlamyine University, Lecturer, Department of Geology, Doctoral Candidate, University of Yangon
[2]University of Yangon, Professor and Head, Department of Geology

ABSTRACT

The study area is situated in Mawlamyine, Mudon and Kyaikmaraw Townships of Mon State. It is mainly composed of Lower Carboniferous to Early Permian clastic sedimentary rocks of the Taungnyo Formation. There are three sub-units (C1-P1t1, C1-P1t2 and C1-P1t3) with stratigraphic thickness of 22.68 m, 126.7 m and 108.22 m respectively. C1-P1t1 unit consists of thick-bedded to massive sandstones and mudstone, C1-P1t2 units are medium to thick-bedded sandstone interbedded with shale and mudstone, pebbly mudstone, grey wacke, gritty sandstone and conglomerate, and C1-P1t3 unit is thin to medium-bedded sandstone and shale. Sandstones of C1- P1t1 unit fall within quartz arenite, C1-P1t2 unit are quartz arenite, lithic arenite, quartz wacke and lithic wacke and C1-P1t3 unit is quartz arenite and lithic arenite. Notably, the nine lithofacies of Taungnyo Formation are (1) dark grey color thick-bedded mudstone facies (34.75 m), (2) dark color pebbly sandstone facies (23.0 m), (3) dark color pebbly mudstone facies (25.5 m), (4) conglomeratic gritty sandstone facies (19.75 m), (5) gritty sandstone facies (36.0m), (6) medium to thick-bedded sandstone facies (30.75 m), (7) thin to medium-bedded sandstone facies (59.5 m), (8) thin-bedded sandstone with shale interbedded facies (49.25 m), and (9) sandstone and mudstone interbeddedd facies (82.5 m). By studying the rocks of Taungnyo Formation representing high velocity turbidity current, low density turbidity current, fine-grained sandstone with low velocity and coarse-grained sandstone with high velocity turbidity current of submarine fan environment, the present study aims to reveal the facies geommetries of theTaungnyo Formation. It is divided into three lithofacies associations termed (1) pebbly greywacke-pebbly mudstone-shale association, (2) conglomerate-gritty sandstone- sandstone-shale association, and (3) sandstone-shale association. Association (1) represents upper fan and lower fan sequence similar to the mouth of canyon in upper fan channel and basin plain of the lower fan environment. Association (2) represents upper fan and mid fan sequence similar to upper fan channel and braided channel of mid fan environment. Association (3) represents mid fan channel and basin plain of lower fan.