A preliminary result on the study of smaller foraminifers and algae from theMiddle to Upper Permian (Midian-Dzhulfian) carbonate rocks of the Sai Yok District, Kanchanaburi Province, Western Thailand

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ABSTRACT

A preliminary result on the stratigraphy and micropaleontology focusing on the upper part of the Ratburi Group carbonate rocks at three representative sections including a) Tham Suea Dao Temple section, b) Khao Kwang – Mahidol Sai Yok Campus section and c) Khao Wang Kamen section at Sai Yok District, Kanchanaburi Province are presented and discussed. The common lithological characteristics of the limestones from above three sections are light gray to gray, medium- to thick-bedded with limited chert nodules and lenses of packstone/grainstone and mudstone/wackestone facies. The Tham Suea Dao limestone lies conformably on the Middle Permian Ban Phu Plu limestone which contains abundant chert nodules and lenses. The lower boundaries of the other two limestones, the Khao Kwang-Mahidol Sai Yok Campus and the Khao Wang Kamen are both obscured by the rail track and the Quaternary Khwae Noi River deposits. However, at the western frank of the Khao Wang Kamen, an excavated outcrops of the weathered pebbly sandstone and mudstone of the Kaeng Krachan Formation are observed near the Kwae Noi river beds at Ban Kaeng Palom.

Several lines of microphotographical evidence, such as the abundance of pellets, algae, smaller foraminifers and other shell fragments in the packestone/grainstone clearly indicate the shoal environment and the presence of large number of dasycladales algae and smaller foraminifers in the mudstone/wackstone suggests the low-energy lagoon environment. Further detailed studies on smaller foraminifers reveal that the taxa belong to some families such as Biseriamminidae (Dagmarita), Tuberitinidae, (Eotuberitina reitlingerae), Geinitzinidae (Geinitzina), Protonodosariidae (Nodosinelloides), Pachyphloiidae, Palaeotextulariidae (Climacammina), and Syzraniidae (Rectostipulina). According to the calcareous algae Dasycladales (Permocalculus aff. digitatus), and some microproblematics (Tubiphytes obscurus), the upper part of the Ratburi Group has been deposited in the inner environment. The Upper Permian carbonate units of these three areas were in turn overlain by well bedded to massive dolomitic limestone which contains rare smaller foraminifers (Glomospirella-Pilammina) of Middle Triassic (Anisian). The above findings are important and crucial for a better understanding of the depositional environment of the Shan-Thai (Sibumasu) Terrane during the Middle to Upper Permian time.

Keywords: Permian, Smaller foraminifera, Algae, Sai Yok District, Kanchanaburi Province, Western Thailand, Shan-Thai (Sibumasu) Terrane