

Permo-Triassic geology and paleontology along the Dada Kering-Merapoh Highway, Pahang

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The Dada Kering-Gua Musang Highway cut across various rock types including igneous, metamorphic and sedimentary rocks. Richardson (1950) has divided the sedimentary rocks which dominate the geology of Merapoh area into three main facies, i.e. the calcareous, argillaceous and volcanic (pyroclastic) facies. All this facies were group together in his Calcareous Series which seems to be rather similar to the Gua Musang Formation.

The calcareous facies occurred as several isolated hills or mogotes as well as some low lying karst features in Merapoh village, extend to the south, up to Sungai Yu halt. Another karst features can also be found around Gua Mesah at Sungai Temau. The calcareous facies is mainly made of thinly bedded to massive light grey to dark grey limestones which can be classified into oosparite and biosparite. Tuffaceous and argillaceous limestones are also common. In places, the limestones are crystallised.

Macrofossils in limestones are very difficult to be identified, but microfossils have given some idea about the age of these limestones. The actual age range of the limestones is not very certain. However, from Gua Panjang Upper Permian (Dorashamian) *Colaniella media* was reported while from south of Sungai Jeleteh some Lower Triassic (Spathian) conodonts including *Neosphathodus triangularis* were recorded by Metcalfe (1990). In places, the limestones are also found interbedded with or occurred as lenses in Upper Permian brachiopod rich shales.

The Argillaceous facies comprises thickly bedded to massive tuffaceous or sometimes calcareous mudstones and shales, and thinly bedded tuffaceous shales. When fresh, some of the massive mudstones seem to be slightly metamorphosed to slates. These massive mudstones and shales usually are richly fossiliferous with dominant brachiopod fauna. Other fossils include bivalves, gastropods, nautiloid cephalopods, solitary corals, bryozoans, crinoids, algae and some plants. Where exposed the basal part of these fossiliferous shales and mudstones are commonly overlying weathered rudaceous beds of probably lapili in origin.

The brachiopod fauna is usually associated with *Leptodus*. The presence of *Oldhamina dicipens* at Sungai Toh and from another road exposure in between Gua Panjang and Sungai Yu halt indicate that

Warta Geologi, Vol. 20, No. 2

these *Leptodus* bearing shales and mudstones are Upper Permian (Middle Dorashamian or slightly older) in age. *Haydehella minuta* which marked the uppermost Paleozoic brachiopod horizon in this region are found at Sungai Jeleteh. The thinly bedded shales are scarcely fossiliferous, but the occurrence of Paratiroliites at Sungai Temau suggested that they belong to uppermost Permian.

The volcanic (tuffaceous) facies comprises some massive fine-grained tuff northeast of Sungai Jeleteh and some thickly bedded coarse-grained south of Sungai Jeleteh and in between Sungai Yu halt and Sungai Yu bridge. In other places, it is very difficult to differentiate this facies from other facies.

One small body of olisthostrome and coarse-grained arenaceous and rudaceous sediments exposed in between Sungai Temau and Sungai Jeleteh.

The metamorphic rocks are found blanketing the Bukit Tujuh granite intrusion. They are made of slates, phyllites and metatuff.

Igneous rocks exposed at Bukit Sembilan comprise of porphyritic quartz granites, porphyritic biotite granite and some microgranites with some xenoliths which characterise the marginal zones of the intrusive body.

Hematite-bearing quartz vein, probably related with the Batu Yon iron mineralization are found cutting the coarse-grained tuffaceous sediments south of Sungai Jeleteh.