Comparative geochemistry of the sedimentary and metasedimentary clastic rocks of the Kuantan area, Pahang

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In Northeast Pahang and South Terengganu, the Kuantan Group and Taweh Bed rocks are redefined in terms of stratigraphic nomenclature. The Kuantan Group consists of 3 formations, viz: Charu Formation, Panching Limestone, and Sagor Formation.

Charu Formation which is the oldest sequence (Lower Carboniferous), is subdivided into 3 units with a status of member for each, i.e. Kolek Member, Cheneh Member, and Lepar Member. The Cheneh Member is synonyme of Sg. Perlis Bed. In the Berkelah area, the lower and metamorphosed part of the Lepar Member is assigned a status of bed, i.e. the Berkelah Bed.

The Taweh Bed is upgraded to the status of formation, and is considered as part of the Tembeling Group.

The stratigraphic classification is supported by statistical geochemical data interpretation. Factor Analysis, as a statistical technique, is used to discriminate the various rock units based on their geochemical variables such as major elements concentrations. In the method, a large number of correlable variables (concentrations) are reduced into a small number of uncorrelable variables (factors). The elements which characterise the factors are selected.

Charu Formation is characterised by the predominance of K_2O, Al_2O_3, and Fe_2O_3 in the shales of the Kolek Member, by the feldspathic and MgO rich mudstones of the Berkelah Bed, and by P_2O_5 and Mg-Ca rich mudstones of the Lepar Hilir section.

Sagor Formation is dominated by potassic shales and arkoses, both of which are poor in Fe_2O_3 and Al_2O_3.

Taweh Formation is composed of shales rich in SiO_2, and sandstones rich in ferromagnesian elements.

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