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ASPECTS OF THE GEOLOGICAL EVOLUTION OF PENINSULAR MALAYSIA

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The complexity of the geology of Peninsular Malaysia is due to the possibility of existence of different tectonic blocks in a narrow peninsula in which outcrops are of average quality. There has been some disagreement over whether the east and west blocks of the peninsula have been separated widely or not and if separated, when did they unite. From evidence ranging from the differences in magmatism, stratigraphy, geologic history, etc., it will be shown that they probably have been separated by a large distance, at least till the later part of the Triassic and that their earliest post union sediments are Rhaetic.

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The differences in granites include those in their ages, elemental and mineralogical compositions, enclaves, associated magmatism and levels of emplacement. The mineralization history in both the belts have also been noted to differ. Even the nature of tin mineralization is not similar.

The stratigraphy of both these belts differs markedly and they have undergone different climatic, depositional, geomorphic and basin evolutionary histories. In the Lower Paleozoic, comparison in the peninsula is not possible as they are not proven in the eastern block, so the histories in their northern counterparts in Indochina and Thailand are compared. In the Upper Paleozoic and Triassic, their dissimilarities are striking.

The absence of oceanic crust in both the belts but the presence of sometimes very thick geosynclinal sequences suggest that subsidence by some process probably in addition to crustal attenuation is needed to accommodate these thick sediments. Probably phase changes in the lower crust may account for some of this subsidence.

Attempts have been made to correlate both the eastern and western blocks with Gondwana and more specifically with Australia but from the evidence available only the correlation of the Western Belt with Gondwana is probable at the moment.

In addition, a model for development of basins both onshore and offshore is provided which explains the presence of tensional, compressional and transcurrent features in this area at about the same time. This model is named "Longkang Tectonics".