

A preliminary model for the stratigraphic-tectonic evolution of Eastern Borneo

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*Eastern Borneo has been nucleated since Late Cretaceous time around the Miri Zone, whose basement like the Luconia Province with which it is continuous, appears to be a microcontinent rifted from Vietnam or South China.*

*The eastern margin of the Miri Zone is interpreted as an Atlantic-type continental margin, with downfaulted continental crust giving way eastwards to Late Cretaceous to Eocene oceanic lithosphere (Chert-Spilite Formation), of the same age as the ocean floor of the Celebes Sea marginal basin.*

*The NE-trending Rajang Group was deposited as a Late Cretaceous to Paleogene turbidite fan directly on this oceanic crust ('Crystalline Basement' and Chert-Spilite Formation).*

*Eastwards subduction of the oceanic basement resulted in the western and northern Sulawesi Volcanic Arc. Continuing subduction narrowed the marginal sea basin, causing growth of an accretionary prism and shoaling of the infilling flysch basin (Rajang Group) to locally give carbonate reefs through the Paleogene.*

*By Early Miocene time, the Rajang Group flysch basin had been compressed between the Miri Zone microcontinent and the Sulawesi arc-trench system into a fold-thrust collision orogenic zone. Ophiolite was obducted and it shed blocks of itself into extensive olistostrome deposits of the Dent and Segama Valley Areas.*

*Thrust tectonics, as the Miri Zone underthrust the Rajang Group,*

resulted in Late Oligocene-Early Miocene granite intrusions in the Long Laai, and Late Miocene in the Mount Kinabalu area. The tin mineralization of the Long Laai plutons is interpreted as mobilized from the Miri Zone underthrust basement.

Aulacogen-like rift arms extended outwards from the opening Makassar Straits, and the rift system was filled by fluvio-deltaic sediments of the Tanjong Formation, which is oil, gas and coal-bearing in the Tarakan Basin, but unexplored for oil in Sabah, although its coal deposits are well known at Silimpopon.

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