



## Stratigraphic correlation between the Sukhothai Island Arc in Thailand and the East Malaya Terrane in Peninsular Malaysia

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A Permo-Triassic magmatic arc system, the Sukhothai Island Arc, is recognised between two major continental masses, the Indochina Terrane and the Sibumasu Terrane; it is bounded by sub-parallel sutures of contrasting tectonostratigraphic histories. These sutures are the Devonian–Triassic Palaeo-Tethys Ocean (the Changning–Menglian and Inthanon sutures in SW China and Thailand and the Bentong–Raub Suture in the Malay Peninsula) in the west and a short-lived Permian back-arc basin (the Jinghong, Nan, and Sra Kaeo sutures in SW China and Thailand) in the east, respectively. The Sukhothai Island Arc and bounding sutures resulted from prolonged subduction of the Palaeo-Tethys beneath Indochina during the Late Carboniferous–Triassic and subsequent Sibumasu collision.

The Sukhothai Island Arc of mainland SE Asia consists of three terranes, namely, from north to south, the Lincang, Sukhothai, and Chanthaburi terranes. The arc system is considered to extend southwards to the East Malaya Terrane of the Malay Peninsula. This is supported by the distribution pattern and emplacement range of Permo-Triassic I-type granitoids (i.e. the so-called Eastern Granite Province). Moreover, the Sukhothai Arc and the East Malaya Terrane show similar stratigraphy of Carboniferous to Triassic marine sediments, and no confirmed pre-Carboniferous rocks are known. In particular, lithostratigraphic and biostratigraphic patterns from Late Permian to Early Triassic are notably comparable between the Sukhothai Arc and the East Malaya Terrane. The Late Permian is typically dominated by shallow-marine shale facies, which is often tuffaceous and is rich in warm-water Cathaysian-type macrofossils, commonly lyttoniid brachiopods. It is then progressively succeeded by foraminifer-bearing limestone facies towards the latest Permian (Changhsingian) and this continues to the Early Triassic. This Late Permian–Triassic stratigraphic pattern is recognised commonly in the Sukhothai, Chanthaburi and East Malaya terranes. This clearly distinguishes those island-arc terranes from the neighbouring Sibumasu and Indochina terranes, where the correlated strata are either carbonates with lower biodiversity (the Ratburi/Chuping limestones in Sibumasu) or are absent (western Indochina).

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