Middle Permian brachiopods from central Thailand and western Cambodia: faunal correlations over the pre-Indosinian carbonate platform of the Indochina Block

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ABSTRACT

Permian carbonate-dominant deposits are widely distributed over the western part of the Indochina Block. Their strata extend up to the late Middle Permian as are generally terminated with the Indosinian I unconformity (due to a later Permian uplift). Abundant and diverse brachiopod shells occur in the Tak Fa Formation of the Khao Khwang Platform in central Thailand. So far confirmed by the co-occurring microfossils, the Tak Fa brachiopod deposits are mainly Murgabian (Middle Permian) in age; plus, a minor Kungurian (Kubergandian) deposit is scarcely present. Another rich calcareous fossil fauna has been known from the classic Sisophon Limestone in Cambodia over the century since the French colonial period. Although a modern study has been halted for many decades, the Sisophon Limestone (Murgabian–Midian) is well correlated to some strata of central Thailand with similar fossil faunas. A suite of Cambodian calcareous fossils has been recovered from the storage of the University of Malaya. The samples were originally collected from Member C of the Sisophon Limestone by the late Dr Derrek Gobbett, then a palaeontologist at the same university who visited Cambodia in 1965 (before the ruling of the nation by the Khmer Rouge). This 1965 collection enables us to make modern revisions to some Sisophon brachiopod species. Many Tak Fa and Sisophon brachiopods appear to be conspecific, or otherwise closely related to each other with subtle differences, and some of them are endemic to the Indochina Block. Any differences are presumably owing to their slight age gap, that is, Murgabian (Tak Fa) and Midian (Member C of Sisophon). This implies possible regional speciation (evolution) that took place within the extended platform between Thai and Cambodian waters. Besides, the present revisions did not reconfirm any trans-Tethyan occurrence of brachiopod species that were previously thought in common between Tak Fa Formation (Indochina Block) and Ratburi Limestone (West Malaya Block / Sibumasu).