

PERTEMUAN PERSATUAN (Meeting of the Society)

Ceramah Teknik (Technical Talk)

THE STRUCTURE OF SUMATRA AND ITS IMPLICATIONS FOR THE TECTONIC ASSEMBLY OF SOUTHEAST ASIA AND THE DESTRUCTION OF THE PALEOTETHYS

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Geology Department
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(In collaboration with the Dept of Geology, University of Malaya)

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Abstract

It is now generally accepted that Southeast Asia is composed of continental blocks which separated from Gondwana with the formation of oceanic crust during the Paleozoic, and were accreted to Asia in the Late Paleozoic or Early Mesozoic, with the subduction of the intervening oceanic crust. From east to west the Malay Peninsula and Sumatra are composed of three continental blocks, East Malaya with a Cathaysian Permian flora and fauna, Sibumasu, including the western part of the Malay Peninsula and East Sumatra, with Late Carboniferous-Early Permian 'pebbly mudstones', interpreted as glacial diamictites, and West Sumatra, again with a Cathaysian fauna and flora. A further unit, the Woyla Nappe is interpreted as an intraoceanic arc thrust over the West Sumatra Block in the mid-Cretaceous. There is a dispute concerning the age of collision of Sibumasu with East Malaya and the destruction of Paleotethys. Triassic radiolarites have been used as evidence that Paleotethys survived until after the Triassic. Structural evidence and the ages of granitic intrusions are used to support a mid-Permian to Early Triassic age for the destruction of Paleotethys. It is suggested that the West Sumatra Block was derived from Cathaysia and emplaced against the western margin of Sibumasu by dextral transcurrent faulting along a zone of high deformation, the Medial Sumatra Tectonic Zone. These structural units can be traced northwards in Southeast Asia. The East Malaya Block is considered to be part of the Indochina Block, Sibumasu can be traced through Thailand into southern China, the Medial Sumatra Tectonic Zone is correlated with the Mogok Belt of Myanmar, the West Burma Block is the extension of the West Sumatra Block, from which it was separated by the formation of the Andaman Sea in the Miocene, and the Woyla Nappe is correlated with the Mawgyi Nappe of Myanmar.

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Mr. AJ Barber - the speaker at the talk



GSM's Immediate Past President Prof Dr Lee Chai Peng introducing the speaker



From left: Mr AJ Barber, Mr MJ Crow and Prof Dr Charles Hutchison



Tea break during the talk



A section of the audience at the talk



GSM's Immediate Past President, Prof Dr Lee Chai Peng presenting a memento to Mr. A.J. Barber