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THE SOUTHWARD TILTING OF SUNDALAND: TECTONIC VS EUSTATIC CONTROL ON SEDIMENTATION IN THE CENOZOIC BASINS OF THAILAND AND OFFSHORE PENINSULAR MALAYSIA

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The Cenozoic basins of Thailand and offshore Peninsular Malaysia occur in a zone that extends from northern Thailand into the offshore area east of Peninsular Malaysia. These basins are generally N-S trending fault-bounded basins believed to have formed in a strike-slip stress regime associated with the collision of India and Eurasia in the early Cenozoic. Regional stratigraphic correlation shows similarities in the sedimentation patterns in these basins. From north to south, the present-day elevation of the basin floor generally decreases, whereas the thickness of basin-fill and "marine character" of the sediments increase. Palynological records from the Thai basins suggest that marine incursions had reached as far north as the Fang Basin by early Miocene. The Fang Basin lies approximately 700 km north of the present shoreline, more than 1000 m above sea-level. The rise in sea-level during the late Oligocene to early Miocene probably reached only 150 m above present level, and could not have been sufficient to cause marine incursion to reach that far north. This must mean that the 'intermontane' basins of Thailand were at a much lower elevation than at present.

The data suggest that there has been a regional southward tilting of Sundaland during the Cenozoic, which has caused the basins in the north to rise relative to those in the south. The observed sedimentation patterns in these basins were controlled both by this tilting and the changes in sea-level.