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# Collision history of the Indo-Burman Ranges: insights from Nagaland and Manipur

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Recent field expeditions supported by the Australia-India Strategic Research Fund (AISRF07021) have allowed collaborative teams of Australian and Indian geologists to conduct field investigations of regions in the Indian states of Nagaland and Manipur that lie immediately west of the border between India and Myanmar. This area has previously been little explored and our work has yielded some important new field and laboratory observations.
The Burma microplate has been dextrally translated over 480 km northwards along Sagaing Fault system since the early Miocene. Clearly, it did not originate where it presently lies but how far it has travelled remains uncertain. The Indo-Burman Ranges include the Naga Hills, which are dominated by Cenozoic sediments that are thrust westwards over an Indian passive-margin sequence that includes the Gondwana break-up rift-drift counterpart to parts of the NW Shelf of Australia. Near the India - Myanmar border this giant imbricate thrust stack also contains thrust sheets of ophiolitic mélange. The ophiolite is heavily disrupted and subsequent to its dismemberment was overlain by a succession of Eocene shallow marine shelf sediments known as the Phokphur Formation. Further east a further nappe of high-grade metamorphic units is thrust westwards over the ophiolite.
Well-preserved radiolarian microfossils and U/Pb SHRIMP data provide important new age constraints. While superficially it appears that rocks in this area can be correlated with units known from the Himalaya in fact this is problematic. As oceans to the north and west of Australia have opened, grown and been recycled through subduction various continental fragments that originated as part of Gondwana have departed and, with time, transferred to Asia. They have not necessarily all followed the same tectonic pathways. The area we investigated lies beyond the Eastern Himalayan Syntaxis around Namche Barwa and tectonic reconstructions indicate it has not participated directly in continent-continent collision. Indeed, stratigraphic and structural architecture differ markedly from that seen in classic Himalayan transects. New detrital zircon U/Pb studies reveal a fascinating history that suggests derivation of some units from Sibumasu rather than the Lhasa or Qiangtang terranes. Detailed study of this area sheds new light on the tectonic evolution of parts of the SE Asian region.