Tectonic geomorphology of the active Kyaukkyan Fault, Myanmar

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AThe dextral Kyaukkyan Fault is part of a complex zone of active strike-slip and thrust faults on the Shan Plateau, in central and eastern Myanmar (Burma). The Kyaukkyan Fault originates south of the eastern Himalayan syntaxis, and appears to link southwards to the Mae Ping Fault in northern Thailand, where Neogene dextral displacement has been recorded. The present-day northward motion of India relative to Sundaland is largely accommodated west of the Shan Plateau along the Sagaing Fault. Several M>7.0 earthquakes have occurred along this transform boundary during the last 100 years. However, significant dextral deformation also occurs on the Shan Plateau, in particular along the Kyaukkyan Fault, which caused Myanmar's largest recorded earthquake (Mw 8.0) in 1912. Abundant displaced and beheaded streams, asymmetric wine glass canyons, triangular facets and en-echelon normal faults along the fault attest to a history of recent movement. Lakes, including Inle Lake, lie in depressions along the fault, and geomorphic study of them and the rivers that feed them has lead to an understanding of their evolution, to yield important insights into the recent development of the fault. The Kyaukkyan Fault is sub-parallel to the Sagaing Fault, and is in the position of a seismic gap on the Sagaing Fault. A major earthquake on one is likely to load the other, so an understanding of the palaeoseismic record of the Kyaukkyan Fault is as important as understanding the plate-bounding Sagaing Fault. Further large earthquakes are likely along the Kyaukkyan Fault, and a significantly larger population is now exposed to their effect than was in 1912, emphasising the need for further palaeoseismic study of the fault.