

Tectonic Setting of Active Mud Volcanism on Ramree and Cheduba Islands, Offshore West Myanmar

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Abstract

The Indo-Myanmar Ranges (IMR) of western Myanmar are an active accretionary prism formed of offscraped Bengal fan sediments. Ramree and Cheduba Islands, offshore of west-central Myanmar are an actively uplifting older section of the prism formed of deep-water Eocene to Oligocene siliciclastic turbidites (Indo-Burman Flysch; that are overlain by Miocene and younger trench slope strata. In the southern parts of Ramree and Cheduba Islands, and along the Ngapali coast, strongly folded and sheared ophiolitic rocks are exposed in fault contact with the turbidites. The assemblage consists of strongly sheared serpentinite and greenstone along with bluish silicified limestone and bedded red and green chert that contain Maastrichtian radiolarians.

On a regional scale, the turbidite section is deformed into a series of NNW-trending folds with steep limbs ($> 50^\circ$) that are laterally continuous for tens of km. We have mapped several zones within the turbidites that exhibit “broken formation” styles of deformation, with fold wavelengths less than 1 m and evidence of small-scale thrusting. Some of the strongly deformed shear zones transition into tectonic mélangé.