

Poster 1**Sedimentological aspects of the Temburong and Belait Formations, Labuan****MAZLAN MADON**

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The stratigraphy of Labuan island is basically an extension of onshore western Sabah, Brunei, and northern Sarawak. Wilson (1964) recognized three lithostratigraphic units on the island (in younging order): Temburong Formation, Setap Shale Formation, and Belait Formation. A major unconformity exists between the Belait and Setap and has been correlated offshore with the Deep Regional Unconformity (DRU) (Levell, 1987). This unconformity is related to the folding and uplift of the Crocker Formation flysch belt during the middle-late Miocene following the cessation of southeastward subduction of oceanic crust beneath Borneo. The rocks beneath the DRU in Labuan are generally highly deformed and indurated, typical of the "Older Setap" which Brondijk (1962) named the Temburong Formation. Hence, in this paper the stratigraphy of Labuan is regarded as comprising the Temburong Formation overlain unconformably by the Belait Formation; the Setap Shale Formation, as has been re-defined by Brondijk (1962), is absent.

The Belait Formation crops out in the northern part of Labuan as a prominent strike ridge that extends from Tg. Kubong to Tg. Layang-Layangan and in the eastern part of

the island from Tg. Kubong to Tg. Batu, essentially forming the two limbs of the northeastward-plunging Labuan Anticline. The Temburong Formation forms the core of this anticline and underlies the remaining part of the island. Excellent exposures of the Temburong Formation occur along the coast near Tg. Layang-Layangan, where the formation consists of an overall regressive (shallowing) sequence of heterolithic facies deposited in environments ranging from relatively deep water and unstable slopes to shallow nearshore settings. The sedimentology of the Belait Formation is described based on field work in the Tg. Kubong area, which included detailed logging of a major road-cut at Chimney. Here, the basal Belait is a sequence of conglomerate and sandstone laid down by fluvial systems that were eroding into the uplifted Temburong Formation. A transition from high-relief low-sinuosity to low-relief high-sinuosity fluvial system is indicated by the upward-decreasing grain size and pebble content in the channel fill deposits, and by the occurrence of coal in the overlying alluvial plain deposits, exposed on Bukit Kubong. The fluvial succession passes upwards into a transgressive (deepening) sequence of nearshore and offshore shallow marine sandstones and mudstone. Syndepositional deformational structures are a common feature of the shallow marine deposits in both the Temburong and the Belait Formations which represent sedimentation on a formerly actively-deforming continental margin.
