

Facies analysis of the Late Neogene sedimentary rocks, Dent Peninsula, Sabah Malaysia

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The study area possesses a good sequence to represent the Late Neogene stratigraphy of the eastern part of Sabah, the Dent Group. It comprises of thick clastic sequence ranging from Late Miocene to Pleistocene and consists, in ascending order, of Sebahat Formation, Ganduman Formation and Togopi Formation. Stratigraphically, the Dent Group unconformably overlies the Middle Miocene volcanic facies, the Segama Group, and underlies the raised Recent alluvial deposits.

The Sebahat Formation, Late Miocene in age, is characterized by dark gray, thickly bedded to massive mudstone intercalated with thin beds of siltstone and claystone, with ferruginous partings and slabby concretions of calcareous argillite, and marl. Sections measured along the lower course of the Sebahat River is about 2,500 m thick and the section is thinning to the south where it ends in the Merabong River. The upper part of the formation is more sandy and grades into sandy facies of the Ganduman Formation. The basal boundary of the Ganduman Formation that separates it from the Sebahat Formation is not easily defined in the field. However, the lower part of the Ganduman Formation can be recognized by its abundance of molluscs and is highly calcareous, while the upper part of the Sebahat Formation is rich in benthonic and planktonic foraminifera, coral, algae and some molluscs.

The Ganduman Formation, Pliocene in age, is characterized by mainly succession of thick light gray sandstone with minor interbeds of carbonaceous claystone. Throughout the sequence, the lithology is rather uniform with common large trough with some planar crossbedding. It occupies the eastern tip of the Dent Peninsula, bounded by the Sebahat and the Togopi Formations. The lithologic change is from well-bedded interbeds, fossiliferous claystone and siltstone to more sandy, lignitic and unfossiliferous beds. The upper boundary could hardly be observed in the field. However, it grades from loose-grained, faintly traced sandstone beds with calcareous claystone to unbedded sandy rubble coral of the Togopi Formation.
