

Stratigraphic analysis of the Sungai Arip area and
its regional implications

Ho Chee Kwong
Dept. of Geology, University of Malaya, Kuala Lumpur.

The Sg. Arip area is located south of the Tatau Horst and north of the main area of Belaga Formation in central Sarawak. The area has a tectonic trend that deviates from the regional strike of the Northwest Borneo Geosyncline. The regional strike is gently arcuate, convex to the south, whereas, the Sungai Arip area has an arcuate trend which is shown by the easterly pitching Arip-Pelugau Anticline.

Four lithostratigraphic units are present in the area, namely, the Bawang Member of the Belaga Formation, Tatau Formation, Buan Formation and Nyalau Formation. Detail fieldwork shows that the Bawang Member was inadequately defined and there is a need to redefine the Member.

The oldest rock unit in the area is the Bawang Member. This is a turbidite unit that was deposited in the Eocene. It suffered folding and faulting in the Late Eocene. The Late Eocene Tatau Formation is unconformable on the Bawang Member. The lowermost part of the Tatau Formation is composed of argillite with globigerinid marl which was probably deposited in open marine environment. It was later uplifted and volcanic rocks was extruded subaerially. Lying on top of the volcanics are conglomerate and sandstone which are probably near shore deposits. The uppermost part of the Tatau Formation is represented by a shallow marine calcareous unit. The transition from the volcanics to the calcareous unit shows that the basin was rapidly subsiding. A major folding phase took place in the Early Oligocene which gave rise to the Arip-Pelugau Anticline. The Kelawit Fault which is a left lateral wrench fault was probably activated at this time. The Buan Formation was deposited in the Oligocene after the folding phase in the deeper part of the basin. In Late Oligocene, a regression took place and caused the lower part of the Nyalau Formation to be deposited in a shallow sea to near shore environment. The Kelawit Fault was rejuvenated during the Miocene where the northern fault block was uplifted. No sediments of Late Miocene age are found in the study area except the Tunggal Tutong Conglomerates which are believed to be of Late Pliocene to Pleistocene age. Presumably the area was uplifted during the Late Miocene causing sedimentation to cease.

Igneous intrusion at Piring Hill is believed to post-date the first movement of the Kelawit Fault in Oligocene. In Quaternary, alluvial sediments were deposited here and there in the lowland.
