



Instituto do Petróleo e Geologia – Instituto Público
(IPG)

4th IPG International Geosciences Conference on

Timor-Leste Geological Data and Information for Economic Diversification and Development

Dili 23-26 October 2018

Note Taker's Document

Date: 24-10-2018

Time: 13:40-13:05

Conference Day: 2

Venue: CCD

Conference Speaker: **Professor David Haig (UWA)**

Presentation Title/Topic: **Key Stratigraphic Horizons for assembling a Revised Tectonostratigraphic Framework for Timor Leste**

Presentation Notes	Q&A
<p>1. Stratigraphic nomenclature for sustainable geological maps</p> <p>Lithostratigraphic classification. The organization of rock bodies into units on the basis of their lithologic properties and their stratigraphic relations.</p> <p>(Stratigraphic Guide of <i>The International Commission on Stratigraphy</i> (www.stratigraphy.org)</p> <p>Lithologic components of sedimentary rock:</p> <p style="padding-left: 40px;"><i>Lithogenic grains</i> (derived from erosion of pre-existing rocks)</p> <p style="padding-left: 40px;"><i>Biogenic grains</i> (derived from skeletons of animals and plants)</p> <p style="padding-left: 40px;"><i>Authigenic grains/crystals</i> (formed within sediment during various stages of diagenesis)</p> <p>Fossils (= biogenic grains) are components of the rock and part of the rock's "lithologic properties"</p> <p>Fossils (= biogenic grains) also provide information on relative age of the rock and are valuable indicators of stratigraphic relations in highly deformed successions.</p> <p>Lithostratigraphic units (as in ICS Stratigraphic Guide)</p> <p>Group - two or more formations</p>	<p>Name: YOGI</p> <p>Institution: Peak Everest Mining</p> <p>Question/Clarification:</p> <p>My question is related to your stratigraphic mapping of Timor Leste: What I know the from the geological map of Timor Leste is that Bobanaro Complex which is consist of chaotic blocks. How do you suggest the mixing chaotic blocks consist of oldest rock of volcanic/igneous etc?</p> <p>Answer:</p> <p>Thanks for the questions about the Bobanaro. The Audley Charles in 1968 he worked as Timor oil geologist. He mapped the Bobanaro as gravity slides. No, it is not gravity slides. In my observations suggest, it is a broken formation deformation of the Babulu Group. They consist of shale with slash of sandstone. And sandstone has thin bedded or laminated with</p>

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Formation - primary unit of lithostratigraphy

Member - named lithologic subdivision of a formation

Bed - named distinctive layer in a member or formation

Flow - smallest distinctive layer in a volcanic sequence

For definition:

- **Strat types** must be designated
- No regional unconformities/hiatuses within unit

With our present knowledge, **these criteria cannot be followed** for most

units in Timor-Leste (because of great structural disruption of successions)

Use broad “Groups” to designate units whose stratigraphic relations have

been determined by the biogenic component of the sediment

In future “Formations” may be defined within “Groups”

We could not define the Formation/Groups just based on the rock type.

***P. confluens* Zone**

Earliest Permian

Cribas Group

***S. quadrifidus* Zone**

Middle to early Late Triassic

Babulu Group

***C. torosa* Zone**

Early Jurassic

Wailuli Group

Late Cretaceous

Palelo Group

typical carbonaceous.

When we run palynology from the samples of mud and shale, the age of Babulu Group is Middle to early Late Triassic.

But there are structure mélanges. I think we need to map separately.

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2. Methodology for stratigraphic mapping in Timor-Leste

At each outcrop

- (a) **Record:** locality co-ordinates, rock types, bedding characteristics, bioturbation, visible fossils (use hand lens), structural information
- (b) **Collect** sample(s) of each rock type present (*a portion of each of these should be placed in an IPG rock store*)
- (c) **Photograph** outcrop (with scale)
 - **At base camp each day**
- (a) **Cut** indurated rock with portable drop saw
- (b) **Make acetate peel** of acid-etched slabbed surface of rock
- (c) **Disaggregate and wash** friable mudstone and sandstone – retain “sand”
fraction
- (d) **Examine peels and washed residues under stereomicroscope and recognize diagnostic (micro)fossil assemblages**

3. Tectonostratigraphic framework – broad details

- Gondwanan Interior Rift Association
- Timor Scot Plateau Association
- Over trust Terrane Association (Collision)
- Synorogenic Association

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