Quaternary deposits at Pantai Remis, Perak: Preliminary results and significance to tectonics and sea-level changes

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A 20 m-thick Quaternary sequence is exposed at the Pantai Tin Mine, near Pantai Remis, Perak. The sequence consists of two lithostratigraphic units:

1) a **lower unit** (≈ 17 m thick) of alternating fining-upward sand and peat layers. This unit is interpreted as nonmarine to brackish fluvial and peat-swamp deposits.

2) an **upper unit** (≈ 3 m) of shelly gravelly sand overlain by mud, interpreted as nearshore-marine deposits.

The contact between the **lower** and **upper** units, at 1.5 m below present sea-level, is marked by an irregular unconformity surface underlain by an indurated humic sandstone with root casts, identified as a paleosol. Large oysters found in living position on this surface suggest that the unconformity is in part a marine hardground.

Preliminary results of radiocarbon dating indicate that the **lower unit** is no younger than 50000 yrs. Based on published records of Quaternary sea-levels, the undoubtedly marine **upper unit** cannot be older than 6-7000 yrs when the Holocene sea-level had risen to within 2 m below present level. The hardground and paleosol therefore represent a significant hiatus of at least 40000 yrs in the Pleistocene sedimentary record, probably due to removal of part of the sequence as a result of uplift of the area during the late Pleistocene. The top of the **upper unit**, at 1 m above present sea-level, may be interpreted as evidence for a higher sea-level in the Holocene. Our data suggest that tectonics may have influenced sea-level changes during the Quaternary, and should be considered when interpreting ancient sea-level changes.

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