**THE MAJOR TRENDS OF PALYNOMORPHS DISTRIBUTION IN THREE FLUVIAL SYSTEMS, PENINSULAR MALAYSIA**

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Three fluvial systems on the west and east coast of Peninsular Malaysia were assessed in term of their palynomorphs distribution pattern. They were chosen on the basis of their contrasting depositional setting, accessibility, availability of supporting published data and extent of disturbance by development. The one on the west coast is tidal-dominated Klang-Langat River. The other two rivers are located on the east coast. The first one is Pahang River which is characterized by a huge sediment output and located on a wave-dominated coastline. The other is Sedili Besar River which also debouches into a wave-dominated coastline but with low sediment output.

The study was conducted on 352 sea bed and river bottom sediment samples that were collected between April to December, 2007. Samples were processed using a standard palynology preparation technique and ‘spiked ‘ with *Lycopodium* tablet which allow estimation of the absolute pollen abundance. The data for mangrove and hinterland pollen are evaluated and presented separately, each as pie chart diagrams that depicts the relative abundance of palynomorph in broad ecological groups. For mangrove, the ecological groups are *Rhizophora*, back mangrove, *Acrostichum* and *Nypa*, while the hinterland pollen groups are freshwater, riparian, peat swamp, coastal, seasonal, kerapah and temperate.

The trends indicate that pollen grains and spores, are widely distributed by mainly water currents and to lesser extent by wind. Overall, palynology tells us less about the local environment, but more about the nature of the local or regional landscape.

Mangrove pollen from the coastal plain is transported upstream up to the upper reach of the tidal limit and downstream with the dominant stream flow, out to the sea. As a result, sediments in the offshore area contain pollen signals which approximately mirror the main vegetation character onshore. Pollen from the river sources may not travel far beyond the offshore as shown by a drastic decrease in pollen abundance in the offshore area. It appears that, in the offshore area pollen could have originated from other places and carried via tidal current and that they reflect the vegetation in those areas. *Rhizophora* group is more common in the west coast, reflecting the broader lower coastal plain and dominance of tidal influence. Away from the pollen source on both coastlines, the pollen abundance gradually decreases, demonstrating the effect of pollen dispersal by wave and tidal current.

The hinterland pollen reflects the broader aspects of the landscape. This is indicated by the dominance of alluvial swamp pollen as opposed to peat swamp. The effect of ecological disturbances by development and plantation is also clearly observed in pollen distribution pattern.