

## Tertiary palynomorph assemblage from eastern Chenor Pahang

AHMAD MUNIF KORAINI<sup>1</sup>, ZAINEY KONJING<sup>1\*</sup> & MARAHIZAL MALIHAN<sup>2</sup>

<sup>1</sup>Biostratex Sdn Bhd, Wangsa Maju, Kuala Lumpur, Malaysia

Email address: zainey\_geo@yahoo.com

<sup>2</sup>Petronas Carigali Sdn Bhd, KLCC Kuala Lumpur

A palynological study has been carried out on the sample from the well exposed outcrop near Kg. Pejing along the road connecting Chenor and Paloh Hinai located in the central part of Pahang. This area is previously mapped as the Tembeling Group, formerly known as the Tembeling Formation, introduced by Koopmans (1968) which consists of four formation namely Kerum Formation, Lanis Conglomerate Formation, Mangkin sandstone formation and Termus Shale Formation. This well exposed outcrop is described as flat bedding of an interbedded coaly/carbonaceous mudstone and sandstone. The lower part of the succession, a coaly lithology is more dominant before it gradually changes to highly carbonaceous mudstone. Possible channelized/erosive contact between sandstone and carbonaceous mudstone can be observed at the upper part of the succession. A total of 20 samples were collected from the outcrop section. The samples were collected from the carbonaceous mudstone and coaly section and a few from sandstone interval. Most of the samples yielded abundant and relatively well preserved palynomorphs, except for sandstone samples which were found to be barren and contained badly preserved palynomorphs. A semi-quantitative method was applied for this study. Due to the condition of the sample which contained highly carbonaceous and coaly material, the samples were treated with Nitric Acid for about 4 to 6 hours. The palynomorphs were identified by comparing to the present day plant community and other published data by previous workers such as Anderson and Muller (1975). A palynological investigation of the outcrop section has revealed that the palynomorphs assemblages were dominated by the typical Tertiary palynomorphs such as *Lanagiopollis emarginatus*, *Discoidites borneensis*, *Taxodiaceae* spp., *Stenochlaena palustris*, *Asplenium* spp., freshwater, peat swamp pollen and abundant of tricolpate and tricolporate pollen. The palynomorphs assemblages from this outcrop show some similarity to the palynomorphs from Batu Arang by Ahmad Munif Koraini, (1993) and from Layang-Layang Formation, Bandar Tenggara Johor by Ahmad Munif Koraini *et al.* (1994). However, there are certain species are not encountered from this area. For example, the freshwater algae species such as *Pediastrum* sp. and *Botryococcus* sp. which characterized lacustrine environment for both of the formation are relatively absent from all of the samples. The identified assemblages also lack of large spores such as *Cicatricosisporites doregensis*, *Crassoretitriletes vanraadshoveni* and *Osmundacidites* sp. where these species are regular in Batu Arang Formation. The freshwater and peat swamp elements are more dominant along with the abundance of angiospermous, tricolpate and tricolporate pollen. This section also recorded regular occurrence of typical climbing ferns taxa such as *Stenochlaena palustris* and a large monolete and bean-shaped spores, *Asplenium* type. The presence of common typical peat swamp pollen such as *Lanagiopollis* spp., an affinity of *Alangium*, *Blumeodendron*, *Cephalomappa*, *Calophyllum* and other fresh water and riparian plant communities such as *Pandanus*, *Eugenia* and *Sapotaceae* (*Palaquium*) may demonstrate the occurrence of an ephemeral peat swamp and/or a former riparian fringe type environment. The abundance of *Stenochlaena palustris*, characteristic of climbing ferns, may reflect the initial stage of peat swamp development which later dominated and substituted by a truly peat swamp plant communities. The age of the rock succession is probably Late Miocene and/or younger based on the presence of certain stratigraphically significant and age restricted taxa such as *Lanagiopollis emarginatus* and *Stenochlaenidites papuanus*.

### References

- Ahmad Munif Koraini, 1993. Tertiary palynomorphs from Batu Arang, Malaysia. *Warta Geologi* 19(3): 116.
- Ahmad Munif Koraini, Azmi Mohd. Yakzan and Uyop Said, 1994. Palynological study of outcrop samples from Layang-layang Formation, Bandar Tenggara, Johor. *Warta Geologi* 20(3): 226-227.
- Anderson, J.A.R. and Muller, J., 1975. Palynological study of Holocene peat and a Miocene coal deposit from NW Borneo. *Rev. Paleobot. Palynol.*, 19: 291-351.
- Koopmans, B. N., 1968. The Tembeling Formation – a lithostratigraphic description (West Malaysia). *Geo. Soc. of Malaysia, Bulletin* 1: 23-29.