

S27A - SEDIMENTARY PROCESSES AND PALAEOGEOGRAPHY AT THE DINOSAUR SITES, UPPER KHOK KRUAAT FORMATION OF NAKHON RATCHASIMA PROVINCE, NE THAILAND

Duangkrayom, Jaroon¹, Noda, Yoshikazu², Jintasakul, Pratueng¹ and Azuma, Yoichi²

¹Northeastern Research Institute of Petrified Wood and Mineral Resources (in Honor of His Majesty the King) Nakhon Ratchasima Rajabhat University, 184 M 7, Suranaree, Mueang, Nakhon Ratchasima 30000, Thailand

²Fukui Prefectural Dinosaur Museum, 51-11, Terao, Muroko, Katsuyama, Fukui 911-8601, Japan

e-mail: jakrub2008@hotmail.com

This study aims to explain the sedimentary depositional processes and to interpret the paleogeography at the dinosaur site of the Suranaree and Khok Kruat subdistricts, Mueang District, Nakhon Ratchasima Province. Field observations at the excavation site included the collection of fossils, sedimentology, and stratigraphy. Fossil assemblages include dinosaurs (allosaurid, iguanodontid, and sauropod), pterosaurs, hybodont sharks, fish (*Lepidotes* sp.), crocodiles (*Khoratosuchus jintasakuli*), turtles (*Kizylkumemys khoratensis*), and carbonized plant compressions. The scattered deposition of the fossils suggests a fluvial environment. The sedimentary facies were subdivided into nine types as follows: Gms (matrix supported, caliche-siltstone pebble to cobble calcareous conglomerate with sandstone alternation), with all the vertebrate fossil types and plants; Gp (planar cross-bedded, caliche-siltstone pebble calcareous conglomerate), with all the vertebrate fossil types and plants; Ss (shell-bedded, caliche-siltstone granule calcareous sandstone), with shells, hybodont sharks, fish scales and plants; Sc (carbonaceous calcareous medium- to coarse-grained sandstone), with fish scales; Sm (massive calcareous sandstone); Sh (horizontally laminated fine-grained calcareous sandstone); Sr (rippled fine-grained calcareous sandstone); Fr (rippled, calcareous red siltstone, low resistance); and Fm (calcareous red mudstone, low resistance). The depositional processes were in a meandering system with crevasse splay and a shallow pond near the main river under semi-arid to arid conditions in the late Early Cretaceous.

S1 - USING REMOTE SENSING AND A GIS TO QUANTIFY ROCK EXPOSURE AREA IN THE UNITED KINGDOM: IMPLICATIONS FOR PALAEODIVERSITY STUDIES

Dunhill, Alexander M.

Department of Earth Sciences, University of Bristol, Wills Memorial Building, Queen's Road, Bristol BS8 1RJ, UK

e-mail: Alex.Dunhill@bristol.ac.uk

Rock exposure area is a better proxy for the amount of sedimentary rock available for study than the widely used measures of outcrop area or number of sedimentary formations. This is because the majority of fossil specimens are collected from exposed horizons. With the use of remote sensing and GIS it is possible to accurately quantify rock exposure area on a regional scale. Rock exposure area, at least in the UK, does not correlate well with either outcrop area or number of sedimentary formations and the proportion of rock exposed in different areas can vary considerably with proximity to the coast, bedrock age, land use and elevation. It is therefore evident that palaeodiversity studies that have used rock outcrop area or number of sedimentary formations as sampling proxies may have produced inaccurate conclusions. This novel technique offers an efficient and accurate method of quantifying regional sedimentary rock exposure and represents a significant step forward in the methodology of assessing the effects of geological bias on patterns in the fossil record.