

Palaeoenvironmental Evidence from the Palaeozoic "Nubian Sandstones" of the Sahara

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Abstract. Fieldwork undertaken on the margins of the Murzuq basin of SW Libya has shown that the Lower Devonian and Cambrian to Lower Ordovician sheet sandstone bodies of the Sahara are composed of facies that are similar to those of the Mesozoic "Nubian Sandstones". These are interpreted as braided fluvial, estuarine and shallow marine deposits that were laid down on the margins of the stable ancestral Gondwanaland continent. They are preserved in transgressive sequences that are characterized both internally and at their base by an abundance of scour and channel surfaces that supply evidence of continual reworking of sediment and explain the mineralogical maturity of the sandstones. Palaeocurrent measurements and field mapping relationships indicate that, during relative sea-level low stands, a braided fluvial plain of very low relief extended across vast areas of North Africa and Arabia, the sediment source area lying well within the hinterland of Gondwanaland, to the south of the Arabian/Nubian Shield. As sea level rose the flood plain was progressively inundated creating a very shallow sea of similarly vast proportions. Surprisingly, evidence for wave or tidal current activity is very limited in the sediments of this depositional setting.