

CLARK-LOWES. D.D. 2005. Arabian glacial deposits: recognition of palaeovalleys within the Upper Ordovician Sarah Formation. Al Qasim district, Saudi Arabia. Proceedings of the Geologist's Association, 116. 331-347.

Field work undertaken in 1979 with Professor Douglas Shearman in the Al Qasim district of northwest Saudi Arabia around the Sarah Ridge found evidence for the cutting and filling of large-scale palaeovalleys. This is interpreted to record major glacioeustatic sea-level fluctuations in the Late Ordovician. A new member of the 'Tabuk Formation' was recommended, the 'Sarah Member', primarily comprising glacial mudflow, alluvial fan and braided fluvial deposits. Between 1987 and 1989 the stratigraphy was revised and the proposed 'Sarah Member' was redefined as the Sarah Formation, a stratigraphic interval that is now recognized throughout northwest Arabia and interpreted to be deposited during a shortlived Ashgillian ice age. The characteristics of the Sarah Formation sandstones and diamictites have commercial significance since these Ashgillian glacial deposits represent an important reservoir target in the subsurface of North Africa as well as Arabia, potentially sourced and sealed by the rich petroleum source rocks of the stratigraphically overlying Llandoveryian graptolitic shales.