

## The Earth beneath your feet – musings on the Triassic Arden Sandstone Formation

with accompanying thoughts why learning more about geology is important and global warming isn't – at least as far as the Earth is concerned.

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The rocks around Leamington Spa and much of Warwickshire are Triassic in age and include a hundreds of metres of red coloured mudstones, the lower part of which are termed the Sidmouth Mudstone Formation and the upper part the Branscome Mudstone Formation, which are largely barren of life. These mudstones were deposited on expansive desert alluvial plains on the edge of a hot supercontinent, called Pangea, between ~240 and 210 million years ago. At this time average global temperatures exceeded 30°C (compared with 12°C today) but we know from fluid inclusions that day-time temperatures reached 60°C. In the middle of this sequence a thin unit of green coloured sandstones, little more than 10m thick, are the deposits of lakes fed by fast flowing rivers during a period known as the Carnian, 232 million years ago. This wet interlude, when it rained for the best part of a million years, is now called the Carnian Pluvial Event, resulted in the creation of large lakes in which fish, sharks, bivalves, clam shrimps and algae thrived. Early amphibians, the precursors of crocodiles, and reptiles, *rhynchosours*, roamed the edge of the lakes and initiated a faunal diversification from which the dinosaurs evolved.



*The Arden Sandstone type section SSSI at Shrewley on the Grand Union Canal*

So why did the intense rains turn the desert plains around Leamington Spa into a vast lake, the deposits of which you can visit on the Grand Union canal Arden Sandstone Formation SSSI exposure at Shrewley ? In this talk we will find some intriguing answers, think about the concept of deep time and explore why global warming is nothing new to the Earth.

Stuart is a geologist who has worked in academia and industry since the late 1970s and now lives in Lapworth, Warwickshire. He has travelled widely, having lived and worked in the USA, Switzerland, Egypt, India, Trinidad, Malaysia and Pakistan. He has published almost 150 academic papers and 2 books, retains an Emeritus Chair at the University of Keele and is the Chairman of the Warwickshire Geological Conservation Group <https://www.wgcg.co.uk/> as well as running his own consultancy, *Discovery Geoscience*.

Stuart's interests are in understanding past climates and palaeogeography from investigating the stories that rocks reveal from their sequences, sedimentology, palaeontology and geochemistry. He continues to learn and enjoys teaching how geology reveals that the Earth's History is often much, much stranger than science fiction.....

