

Summary Write Up of the DGAG Talk Tuesday 10 December 2024
The (Complex) Geology of the Somerset Coalfield

Speaker: Andy Gordon

The talk was, as anticipated, a lively and informative mix of geology and history of early geological mapping pioneers and was thoroughly enjoyed by 18 attendees. Although we cannot reproduce entirely the talk, the speaker has been very generous and supplied PDF slides and notes. The many questions after the talk showed a high level of engagement, so much so the speaker has gone above and beyond to supply answers to the three questions he could not answer during the talk (Appendix 1. below in this note). All this material is on the DGAG website as PDF documents to assist in education and future reference. Below are a few short notes of subjects I found particularly interesting but it is suggested that readers refer to the PDF documents mentioned above for their own preferences.

Firstly, the speaker gave us a valuable introduction to early geological mapping pioneers in this area. In particular the Somerset born John Strachey (pronounced “Stray Chee” apparently) for his work and first documented geological cross-section and also the first published use of the concept/word of “strata” in 1719! This is some 50 years before William Smith was even born. So Somerset is truly the birthplace of Geology!

In my (Editor) opinion the top two of the long list of “ Somerset must see” places mentioned by the speaker:

- Radstock Museum
- Writhlington Spoil heap

It was fascinating hearing of the fossils found in the coal measures in particular the large flying insects. The spectacular 3D model done by Palaeo-artist Bob Nicholls was shown on a slide. The model based on the large fossil wing found in the Somerset Coal measures of Carboniferous age. The video clip link is worth looking at (Andy sent through in response to a question). Meganeura “dragonfly”/griffinfly from the TV series First Life with Sir David Attenborough - Episode 2 Conquest (2010).

The meeting concluded well after the scheduled finish time as the discussions continued.

Next DGAG talk is scheduled for 21st January 2025 at the same venue.

Title is The Art of Sand from the Isle of Wight to Iowa: Part 1: Isle of Wight

Speaker: Phil James

More speakers are required for other talk slots in 2025, any topic loosely connected to the Earth and science will be considered, we like variety! Please check all your networks for a speaker.

Chris Webb

DGAG Events – Editor

Additional Links:

1. Bob Nicholls Palaeo-Artist website

<https://paleocreations.com/index.php>

2. Natural History Museum, page on Carboniferous age “Dragonflies”

<https://www.nhm.ac.uk/discover/giant-dragonflies.html>

Questions answered by Andy after the talk

I believe the below are the three open questions that I have tried to find the answers on today:

Q1. When were the post Westphalian North/South faults generated?

The faults we were discussing (highlighted in blue on the slides) were the Clandown and Luckington faults. These faults are subparallel to the axis of the syncline that apparently represents a final tensional phase of earth movement i.e. they were created at the earliest at the end of the 100 million years of the Armorican orogeny (the main Variscan effects on the UK took place in the late Carboniferous to early Permian (about 290 million years ago).

William and Chapman, 1986, state " Major Variscan deformation occurred towards the end of the Carboniferous giving rise to northerly-verging, asymmetric folds and thrust faults".

Q2. Where in Somerset was open-cast mining investigated at the end of the last century?

The BGS Map GeoIndex - British Geological Survey shows locations of proposed / actual opencast mines. There are actually quite a few from the M5 in the North to south of Radstock.

Q3. Where did the Pennant sandstones originate from?

Cope and Bassett (1987): Sediment sources and Palaeozoic history of the Bristol Channel area By late Westphalian times, state

"...the incursion of a thick suite of sand bodies (the Pennant Sandstones) marked a significant change to predominantly northerly-directed sediment transport vectors; Kelling (1974) has given a detailed review of the considerable sedimentological detail now available from these rocks.....Kelling concluded (1974, p. 217) that the source of this sediment was southerly, and consisted of Old Red Sandstone debris augmented by material from a metamorphic source area"

There is a comprehensive bibliography at the end of the slide deck as well.

Additionally, I was not able to play a 1 minute video extract that would have reiterated the answer to Kelvin's question "Why did the dragonfly get so big?" (high O2 levels) which can be accessed at

link below

an extract from First Life with Sir David Attenborough - Episode 2 Conquest (2010)

https://www.youtube.com/clip/UgkxIRb7vxqR87P6Nu0m6nPt_OXs3owLlzEg