DOVE DALE & THORPE CLOUD FIELD MEETING APRIL 22 2012

Examining algal limestones at Thorpe Cloud.

FOLLOWING ANOTHER hearty breakfast at Ilam YHA with the threat of rain showers, hail, thunderstorms and the odd tornado forecast we made our way to the car park at the base of Thorpe Cloud, a short drive from Ilam House, where Paul managed to persuade the car park attendant that the big white 17 seat minibus was in actual fact a small car!

Our tour guide for the day was not able to make the meeting so Paul very ably took command, designating Zach and Kate to be in charge of maps and navigation. Off we set along a track to an information board welcoming us to the 'National Trust Dove Dale and South Peak Estate' with a quote from Byron following a visit he made to the area in 1798 informing us ***'There are prospects in Derbyshire rivalling those of Switzerland and Greece'.***

Across a bridge we went and before us opened up a magnificent view of the River Dove with Thorpe Cloud looking down on us, no doubt sensing the arrival of geologists armed with an array of rock assailing weapons with the intent of doing some mischievous poking and prodding (no hammers).

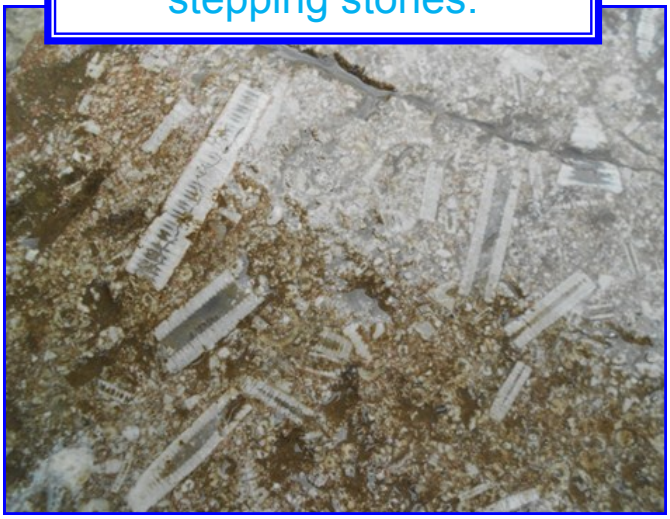
A short scramble brought us to our first rock outcrop of the day to be examined (Grid reference SK148510) Hand lenses came out along with coins for a scratch test. Much discussion took place, then to the penultimate test, a bottle of acid was produced and squirted onto a small area of rock, the reassuring fizz confirmed we did indeed have a limestone before us.

Referral to the geological map of the area informed us we were looking at Milldale Limestone from the Carboniferous.

Regolith

Up Thorpe Cloud we climbed, sampling exposures every 20 metres or so. We found corals, brachiopods and crinoids. In the regolith beneath the mat of grass we found many good fossils including a near intact crinoid. The exposures were heavily weathered and covered in moss and lichens with only a few fresh faces to be seen.

Crinoids in the Dove Dale stepping stones.



Natural Arch

Higher up Thorpe Cloud outcrops became very fine grained, bland and devoid of fossils. A carboniferous mud mound! Was this the result of quieter deposition times? A change in sea pH levels perhaps?

Our geological musings were interrupted by an escape attempt made by one of our safety helmets. Down the hill it rolled, twisting and turning as it was pursued by the one and only Philip Powell. There was no getting away from our President who revealed the agility of a mountain goat. A most impressive arrest was made of the miscreant helmet which was then returned to the safe custody of its owner.

Tissington Spires

Asymetric Valley

The summit reached and a short break to catch our breath and partake in a chewy fruit pastel (thanks Sue), our attention now turned to the V shaped dry valley to the North East of Thorpe Cloud. Paul's teachings were intermittently punctuated by the sharp crack of gun fire from the nearby rifle range. How did he choreograph that? The Thorpe Cloud side of the Valley was distinctly steeper than the Thorpe Pasture side with Lin Dale running between them North West towards the River Dove. We learnt that in periglacial times the sun would warm the Southern exposures, melting the surface resulting in solifluxion of the surface material. This caused the asymmetry of the valley we were looking at. The vegetated valley slope was regularly punctuated by diagonal bands of rock. The top most exposures had distinct dark jagged horizontal banding which was the subject of much conjecture as to their origin.

Crinoids & Brachiopods

We continued our tour, descending the steep North East face of Thorpe Cloud whilst picking bits of chewy fruit pastel from our molars. Eventually, after a few exciting and dynamic gymnastic demonstrations from certain members of the team we made it safely down to Lin Dale where it joins the River Dove. Here we examined the surfaces of the stepping stones which contained many fossilized critters. Crinoids and

Ilam Rock

Brachiopods were in abundance and their appearance were enhanced by giving them a good wash with river water although this process did make the stones slightly more slippery and sporting for the hordes of walker's intent on interrupting our scientific investigations by walking across the river via the area of interest.

Our walk took us along the river, following its course upstream on the North side towards Lovers Leap. A change in the limestone was observed with evidence of bedding and many crinoids and brachiopods in evidence. Alejandro had a particular interest and appreciation for the crinoids!

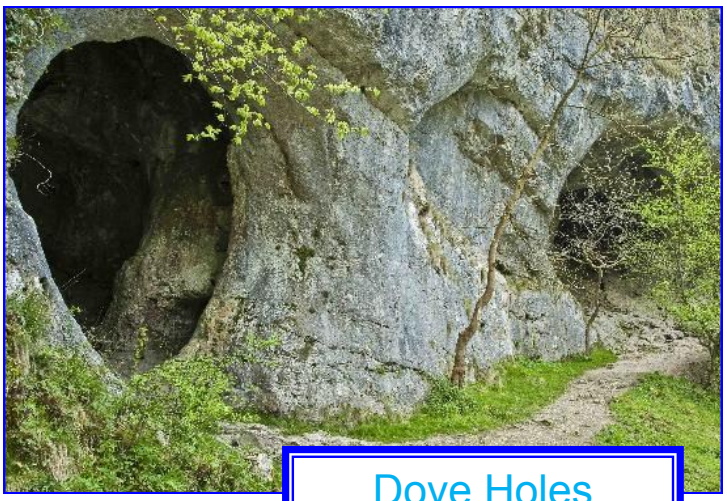
Tissington Spires

Past the Tissington Spires we reached Reynards Cave and the Natural Arch where we decided to take shelter from a passing shower, eat some lunch whilst precariously perched on various ledges and rock projections whilst discussing how the Tissington Spires came about. Why is it that some areas of the limestone are evidently more resistant to erosion than other areas? Our hypothesis was that a subterranean drainage system had evolved in the limestone, over time to forming caves and phreatic tubes. the roofs of which then collapsed to form the spires.

The descent from the Natural Arch gave Alison the opportunity to selflessly demonstrate that when the coefficient of friction between walking boot and muddy slope is too small, gravity takes over and decides the direction of motion. Well done to Zach for a well placed boot thereby arresting Alison's back side slide. Although I did not witness this particular event I understand it was caught on camera...

Further upstream we came across the magnificent Dove Holes, natural water-worn caves in poorly stratified pale grey reef limestone. We then reached our turning point at Ravens Tor where we saw the transition between reef limestone and the basin facies.

On our return journey we stopped to look at a small cave through which a stream emerged to join the River Dove. The cave had a distinct rectangular door shape and two closely spaced minor faults could be seen in the roof.



Dove Holes

The day ended with a welcome coffee and some of Kate Vandersteen's home made cake in the car park, a quick luggage pickup at Ilam House then an uneventful journey home. A glance around, from the front seats of the minibus to see what all the silence was about revealed a bus load of exhausted, sleeping geologists.

Filed by

Doug Foster