



THE ERCALL FIELD VISIT MARCH 25 2012



Joe Jennings
helps to identify a
specimen.

THE OFFICIAL START OF 2012 British Summertime provided a burst of sunshine for the Oxford Geology Group trip to The Ercall Quarries. Losing an hour of sleep did not deter the prompt arrival of everyone on the fine Sunday morning, although the coffee stop at Warwick service station was very welcome!

URICONIAN VOLCANIC DEPOSITS

DR JOE JENNINGS was our expert guide for the day and, after a brief introduction, led us into the quarries to begin our exploration of the SSSI (Site of Special Scientific Interest). The first section of the quarry comprises of Uriconian volcanic deposits of acidic lavas and tuffs. Flow banding, within the rhyolites, suggests frequent eruptions, followed by rapid cooling and deposition in a submerged environment. We examined samples of this “sedimentary looking” rock which Joe explained, is often used as a trick question for geology students!

We were also tasked with trying to find the dolerite dyke, hiding at the edge of the first exposure. Joe explained that the dyke had originally been a sill but its current position (~ 65 degrees) is an indication of major uplifting and earth movements in the past. Throughout the day, we were looking for clues to confirm or suggest, what had happened in the past and the Ercall Quarry region proved an excellent location to practice geology detective work.

As we made our way to the 2nd quarry, suddenly, out of the blue, we could see the spectacular intrusive granophyres, (rich in alkali feldspar), glistening in the sun, in shades of pink. It was clear to see the changes in the rocks from bright pink to pale grey showing the change between Precambrian to Cambrian with the granophyres (pinks) intruding the volcanic (brown, black colouring). This is the famous Ercall Unconformity and geologists can study the boundaries which signify the monumental shift from Precambrian, where there was little life, to the Cambrian era, where life suddenly explode in lots of different varieties.

Joe pointed out the next exposure of light grey colouring where the Wrekin Quartzites had, originally, overlain the granophyres. We examined exposed bedding planes of the quartzites which showed ripple marks, providing more evidence of the “once upon a time” shallow marine environment. It was amazing to



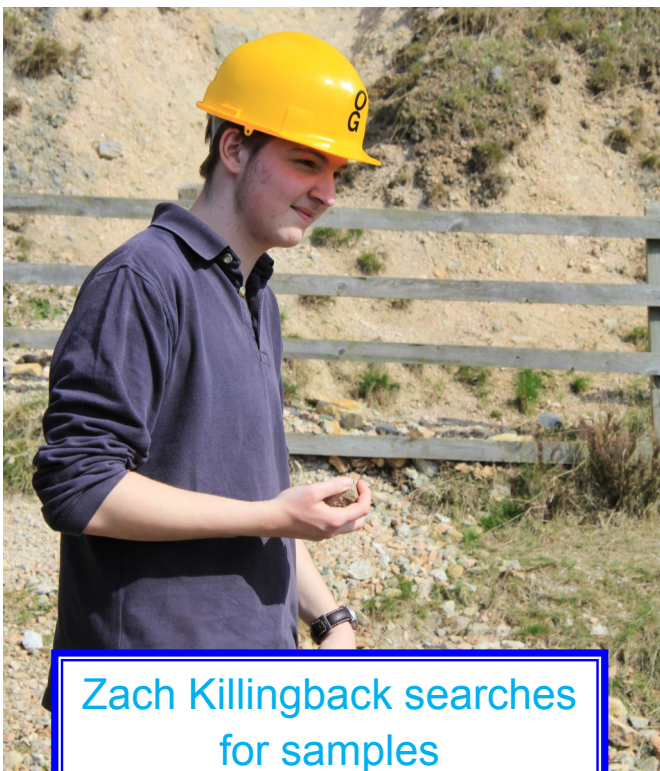
Doug Foster
examining
ripple marks

The Ercall Unconformity under scrutiny



learn that this part of the UK used to be 60 degrees south of the Equator.

Joe helped locate our first slickenslide of the day, where exposed quartzite was highly polished with linear grooves. The direction of movement can be detected by feeling the slickenslide with your fingers – “Smooth” to touch shows the direction of the movement, “rough and irregular touch” is evidence against the direction of movement. An extra tip was to shut your eyes and feel the rock surface..... A puzzling sight for passers-by to witness OGG testing slickenslides movements!



Zach Killingback searches for samples

On our way to the next quarry, we saw some more examples of ripple marks and Attila found (and caught!) a common lizard for us to look at... before returning it to the field.

WREKIN QUARTZITE

Exposed Wrekin Quartzite, in steeply dipping beds, overlain with Comley Sandstone was in the last quarry which we visited. The sandstone had a greenish brown colouring which is due to the presence of glauconite in the sandstone...and another clue to the former marine environment conditions. Joe informed us that the quartzite was used in the construction of the nearby, M54 and, unlike the crumbly Lower Comley Sandstone, is very strong and resistant. The quarries are no longer in operation but their working life spanned from the 1850's to 1986.

Before heading to a local hotel for Sunday lunch, we found another slickenslide and stroked the bedding faces with newly acquired expertise!

The return journey, with Paul at the wheel, was soporific for the passengers (Sunday lunch syndrome!) as we reflected on what a marvellous day we had.....many thanks to Paul and Joe for their diligent preparations, hard work and expert knowledge.

Sue Connell