

Rocks of the Month – Maddocks Hill Quarry, the Ercall.

The hills in the area of the Wrekin in Shropshire have some of the finest sites in England for teaching geology. The area includes the Wrekin itself, the Ercall and probably the least known of all, Maddock's Hill. The Maddocks Hill quarry is hidden behind and earthwork at the end of a track and supplied the M54 with aggregate but was closed as soon as it was finished.

I have been to the quarry several times and I have 5 samples to show you..

- 1) Shineton shale with graptolite *Dictyonema* (Tremadoc epoch, currently early Ordovician). Typical shale dull green colour.

- 2) Shineton shale different colour, harder but still showing sedimentary bedding structure. Reported to yield *Dictyonema* but I've never seen any on several visits. Reminds me of poor quality china that hasn't been properly fired.

- 3) "Grand Canyon rock". Tentatively I would suggest it is a banded hornfels. Lost the sedimentary structure. No visible crystals. Hard. Dr Olver has suggested that it was probably oriented vertically with the banding possibly iron oxide (magnetite). Much less interesting than horizontal banding but more accurate!

- 4) All structure has been lost. Dark colour. Seems to have fine uniform sized crystals although the individual crystals are not visible in a hand lens. I would suggest that the lovely term "granoblastic" could be used. The sample has a shiny "crust" which could be slickenside suggesting the rock has been subjected to small scale faulting.

- 5) Lastly, the geological master-mind behind all the baking and stressing. The crystals are clearly visible to the naked eye but typically 1 mm or less. This is obviously a medium to fine grained igneous rock. In the books and field descriptions it is referred to as a camptonite or a lamprophyre but it is so varied in the quarry that it is impossible to give it a single name.

What we have here, then, is a shale which has suffered from an igneous intrusion where the local temperature is high but the pressure is low. The normal term for this is Contact Metamorphism. There are similar small areas of contact metamorphism at the Southern end of the Malvern Hills.

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