

IN SEARCH OF A TRILOBITE

Iain Brown

On a May weekend last year I travelled to Shropshire to try and scratch an old itch of mine which was to find a trilobite. I already have a couple of examples (*Calymene* and *Elrathia*) which I received as a present bought from the Lyme Regis fossil shop, but nothing compares to actually finding the specimens yourself. Words like context and provenance spring to mind along with more personal ones like satisfaction and achievement. I had lived in Shropshire previous to moving to the Bath area and had even tried to find trilobites on my own a couple of times. This involved locating disused quarries on the map from around the Wrekin area and then if possible having a look. Like most things, if I were looking for rusty old farm machinery and sheep carcasses, I'd have found loads of trilobite fossils. As it was, the itch remained unscratched.

Moving on some eight years and now as a new member of the Bath Geological Society, I became aware of another society (the Essex Rock and Mineral Society - ERMS for short) who were planning a trip to Shropshire to look for trilobites. I contacted their field trip organiser and arranged to join the hunt. I had thought of exploiting the fact that Bath Geological Society has the same initials as the British Geological Survey by saying something like 'Hello, Brown here, from the BGS'. Which I thought sounded very grand and although strictly true I was concerned that any false assumptions derived would be quickly discovered on the actual trip through my obvious lack of knowledge and perplexed expression at most things geological.

This then is my personal recollection of the weekend extracted from an all too fallible memory. It is intended more to divert rather than inform, mainly to hide my ignorance of the subject. Hopefully, it contains enough technical stuff not to be burnt on sight by the more academic members of the society, but I give no promises.

The first site on the Saturday was called Overtons Rough, (photograph 1).



Photograph 1: Overtons Rough

The rocks were wet crumbly shales laid down in deep water sometime in the Ordovician. Finds were scarce but I did manage to find a rather distorted fossil. The distortion, I assume, is due to folding activity sometime in the 460 odd million years it's been lying around waiting for somebody to find it. However I was told subsequently that it could have been caused by the fossilisation process (compaction and lithification); one way to get further useful information would be from a petrological examination in thin section. I've no resources for such an activity and as it was my first find, I had very little motivation to destroy it even if I had. It may be distorted, but I had a feeling that I hoped I looked that good after the best part of half a billion years.

As for what it is, when I showed it to Bob Kennedy (from Birmingham Museum and the trip leader) he reeled off a string of words within which I believe I heard the name *Calymene*. Looking in the Natural History Museum's British Palaeozoic Fossils yields the prefix *Flexi-* or *Platy-* for *Calymene* in the Ordovician. Unfortunately, the specimen is so poor it is hard to make a closer identification. If forced, I'd say *Flexicalymene caractaci*, (photograph 2).



Photograph 2: *Flexicalymene caractaci*?

An interesting event occurred whilst photographing the fossil as it literally crumbled in my hands. This was the cause of great consternation on my part as I had forgotten the advice given on the trip to prepare the samples as they would crumble when they dried out. However, after giving myself a good tongue lashing for being so forgetful and lazy with a few adjectives best left out of a printed journal, I found that the crumbling had occurred around the fossil itself. The shape of it had introduced a natural weakness in the shale which the fractures had followed. This resulted in a 3D shape partly appearing on one side and the hope on my part that the fossil might be whole and not as compacted as the majority of fossils I found over that

weekend. These specimens were mainly in harder, slate type rocks so compaction and metamorphism would tend to make them much more two dimensional (*see later photos*). A case of beginner's luck had improved the fossil. I've also now treated it with a PVA solution so it should not crumble any further.

The second site on the first day was Deltons Wood where, as mentioned earlier, the rocks are hard and slate like. This site proved the most productive of the weekend for me, for an unusual reason. As the rocks were very hard I managed to split the handle of the hammer I was using as my enthusiasm outweighed my skill (some unkind souls may even say brawn outweighed brain). However, hammerless, I was forced to scavenge around in the loose stuff for finds. Gleaning this way proved a very successful method of collecting for somebody who was not too fussy about the quality of fossils found. Even sitting down, the rocks within arm's reach would yield a large number of fossils. The vast majority of these specimens were fragments of trilobites which may not have been good enough for the person who discarded the rock in the first place, but as this was my first trip, I was delighted with finding them.

One find showed the thorax and tail piece (pygidium) of, I believe, *Ogygiocarella* (Oggy to its friends). Below is an example of the top part of an Oggy. It shows the glabella and about 6 segments of the thorax. The glabella is the central raised part of the trilobite head (note:- the specimen is the negative half of the fossil so here shows as a depression). The complete head shield of a trilobite is called the cephalon. My specimen hasn't got the full cephalon as it is lacking bits called cheeks (free and fixed) which lie either side of the glabella, (*photograph 3*).



Photograph 3: Trilobite cephalon

Another species of trilobite that was common was *Onnia*, *photograph 4*.

One specimen was tiny but one of the very few complete examples I found. As trilobites shed their hard shells to enable growth (much like modern day lobsters and crabs) finding pieces of shell is very common. *Photograph 4* shows a bigger example and though also complete it is partially obscured by the head shield of another.



Photograph 4: Onnia

If you look closely at this photograph you may just make out the genal spine which *Onnia* has extending from the head shield down parallel to the thorax. Also the curious rows of 'dots' or pits on the head shield which, in life, were some kind of sensory device.

The second day started at Acton Scott, which represented a different environment back in the Ordovician. The other sites on the first day were what Bob called 'life assemblages' which means the animals actually lived (and died) locally. Acton Scott was a calcareous mudstone and represented a site where various animal parts would congregate through wave action or gravity after death. This meant the chances of a complete trilobite were small. However, this was offset by the chance of finding other types of fossil.



Photograph 5: Calymene and others

Photograph 5 is a specimen from Acton Scott and shows a head shield of *Calymene* (again) with other fossils around it.

Photograph 6 is the reverse of the same piece of rock and shows an abundance of Ordovician brachiopods with about four types in evidence. Also of interest is the five pointed star just below the centre line on the right which I assume is a crinoid fragment (ossicle).



Photograph 6: Brachiopods plus crinoid fragment

The last site of the weekend was in the River Onny, photograph 7, and I do mean in. After Bob had told us the colour of the rocks to look out for and the sound they made when struck by a hammer we had to locate the rocks in the river bed. Despite Bob's guidance I was unable to find any fossils but enjoyed myself none the less. There's something delightfully childish about splashing about a small river bed. For those who do not know me by sight, I'm the one in the rather fetching boiler suit* with matching accessories reaching for the pick-axe.

(*It's sky-blue by the way! - Ed)



Photograph 7: River Onny

The Onny site is of special geological interest as it contains an unconformity which is believed to have misled Murchison, leading to a disagreement with his then friend Sedgwick after they had published their Silurian and Cambrian systems (1835). As can be seen in photograph 8, where Bob is indicating the approximate horizon of the unconformity, the dip is very similar. As most of the Ordovician is missing, this led Murchison to make some false conclusions from his study of the fossils found in the strata. The controversy was resolved when Lapworth suggested the Ordovician series (~1880).

So, wet and tired, with pockets full of bits of rock, the weekend trip came to an end. For me, the trilobite itch had been well and truly scratched, though at that time, I did not know that the relief would prove temporary. Hopefully, this year I can do some more scratching.



Photograph 8: Controversial unconformity

YOU READ IT HERE LAST

Readers of the freebie tabloid the *Metro* have known since May 13th that the Vendian period has been re-named the Ediacaran by the International Commission on Stratigraphy. Under the page-top headline '600m-YEAR WAIT TO BE NAMED IS OVER' were three, yes three, columns on this story with a stratigraphic column in colour alongside. There is the Ediacaran, below the Cambrian at 545-600 m.y., marked by the 'appearance of complex multi-cellular life-worms, jellyfish etc'. Life-worms?

We were told the re-naming had taken 15 years and three ballots of 'the world's top geologists'. Also that the Russians were upset, deeply upset. Expert Boris Sokolov was wheeled out to tell us why. This was drama. There was no trace of tongue-in-cheek, and anyway, why pick on the ICS?

So stratigraphy has made it into the tabloid press. Well, the *Metro* anyway. You know the *Metro*? It's what forms most of the layer of paper covering the floor and seats of the tube trains when you get to London mid-morning on your off-peak day-return and the commuters have all gone to their offices. And now I see it's appearing on Bath buses; so a genuine national daily.

But; a small but, even the reporter seems to have had doubts about the interest this news would generate on the Bakerloo Line. At one point she admonishes the bleary-eyed traveller: 'Stay awake at the back!'

So what is going on? Is the editor of the *Metro* keen to promote geology? Or does he think the cold war rumbles on in some sinister fashion in scientific circles? Perhaps the reporter made a bet in the newsroom she could make *anything* interesting to the average newspaper reader, (in which case she probably lost).