

# CHARNIA



Newsletter of the  
**Geology Section**

of the Leicester Literary & Philosophical Society

May 2018

[www.charnia.org](http://www.charnia.org)

## EDITOR'S NOTE

Summer, and the field programme season is here again (p.13). This being the May (I believe that to be the spring, not summer) edition, I need to apologise for the delay by explaining that your editor was waiting for articles to put in it – thankyou Roy, for stepping into the breach.

Finances and giving the Section a viable future are becoming challenging for the committee. Please read Roger Latham's important message (p. 5) and take part in the discussion.

Enjoy the rest of the summer; we look forward to seeing you at the first of the winter 2018-19 meetings, on October 3<sup>rd</sup>: Dr David Button (Natural History Museum, London) *Food for thought: biomechanical analysis of the skulls of Mesozoic dinosaurs reveals repeated patterns in the evolution of herbivory.*

### Cover photo: Rock-spot Shot 1

Craggy, mountain peaks of a Permian/Late Palaeozoic landscape re-emerging from their Triassic and later rock cover (smooth areas and the foreground). The crags themselves are, of course, made of late Precambrian (Charnian) weakly



metamorphosed volcanoclastic rocks. The view shows the high points of Bradgate Park, particularly the crags associated with the War Memorial (middle) and Old John (right).

**Photograph taken from Cropston Road, Anstey. (Roy Clements, 2012)**

## Local news from *Earth Heritage* 49 Spring 2018

Photo of Bradgate Park by Michael Murphy (Earth Heritage)



1. The Precambrian rocks of Bradgate Park, Leicestershire are part of **Charnwood Forest**, which has won a £2.75m grant from the **Heritage Lottery Fund**, through its Landscape Partnership programme, to develop a scheme aimed at promoting awareness of the whole Forest area and showcasing its specialness in terms of biodiversity, geology and landscape.

Several members of the Section worked on the successful bid, and will be involved – to represent the geological interest, which is acknowledged as being key to the Forest’s distinctive landscape and history – on the development stage for which the grant has been awarded. If that is successful too, a major grant to implement the scheme will follow.

**2. The Irchester Country Park Ironstone Quiz trail and Geology viewing platform** opened in June last year. This extensive park is on the site of



Image: Northamptonshire CC

Wembley Pit, one of the very large ironstone quarries near Wellingborough. Diana Sutherland, a long-standing Section supporter and committee member, was the project's champion, wrote its management plan and provided the information for the interpretative boards around the site.

It is well worth a visit:

<https://www.northamptonshireparks.co.uk/irchester-country-park/>

**Photographs of the opening events, from *Earth Heritage***



## “On the rocks”?

Roger Latham, Section C Treasurer

To use the cliché “I have some good news, and I have some bad news”. First the good news – at the AGM I told you that we had made a loss of £154 last year. However, when the final accounts were completed at the end of March we had some additional income mostly from donations for coffee and that reduces the loss to only £54. I also said at the AGM that we were facing increased costs because of new security requirements for the Internet, and it seems possible that we may be able to get away with rather less expense than we expected.

Now the bad news. When the committee came to agree the budget for the Section for this 2018-19, it had to conclude that we were budgeting for a loss of over £200. Mostly this is because of two reasons – the fact is that our seminars are not making a profit sufficient to pay for some of the fixed costs of the Section’s activities as it has done in the past, and because the cost of printing Charnia has gone up significantly.

Now the net consequences of these two events is to put pressure on the annual membership subscription, and the committee are having to look at the likelihood that it will go up significantly in the near future. But before the committee makes a decision on this, there are a couple of things that you, the membership, can help us with in our considerations.

The first concerns the seminar. At present well over 75% of those attending come from our membership, not from the general public. So, if the seminars are attracting lower and lower attendances the question for the committee is why? What is it about the seminars that isn’t attracting you? Is it that you’re not interested in the subjects offered? Are you not interested in attending day-long events? Is it something to do with other commitments at a weekend? Is the cost too high? We are reluctant to give up the seminar as it is a useful means of getting the wider public interested, but if each year is going to be a struggle to get decent speakers, facing a large enough

audience, then we might have to consider cancelling the seminar altogether. We can't continue to run it at a loss. So, we need to know from you what you think about the seminar, and in particular we are interested in hearing from people don't attend the seminar and why they don't. We are not pointing a finger at anybody, but if you'd like to send me or Mark Evans a brief email setting out your views on the seminar that would be really helpful, particularly if you could do it before our next committee meeting in June when will be able to consider your responses.

The second thing concerns Charnia. It's highly unlikely we will be able to find somebody who can print it for us more cheaply than it's being done at present. So, if we need to keep costs down, and keep the membership subscription as low as possible, we need to find some way of getting Charnia out which is less costly. The obvious possibility is to send it out as an online document. There are clearly a number of options here. We could send Charnia out electronically, giving you a link to the document so that you can print your own copy if you want, but some people might still prefer a printed document. Option A is to send Charnia electronically but to charge extra for a printed copy of Charnia. Option B will be to send Charnia out electronically, but only make a limited black-and-white printed version available to those who don't want to receive or can't receive the electronic copy. Option C is to continue to print Charnia and to send it out as at present, but to increase the membership subscription substantially (by 30% to 50%) to pay for this. Again, the committee need to come to a decision, but we need to know your preferences between options A, B, and C. An email or note to Mark or myself putting the options in your order of preference will be helpful to the committee in deciding the way forward.

**I look forward to receiving your replies, and thank you in advance for taking the trouble.**

Roger Latham, Treasurer and Vice Chairman  
[roger.86latham@btinternet.com](mailto:roger.86latham@btinternet.com)

## The Miles Piece – a bit of geology in an archaeological and nature conservation setting

Roy Clements



Figure 1. View southeast across The Miles Piece towards the entrance gate; high ground is to the right

This jaunt relates to a visit I made to one of the Leicestershire and Rutland Wildlife Trust's ('the Trust') reserves on the 20<sup>th</sup> of March 2016, with a subsequent brief visit on the 11<sup>th</sup> May 2018.

Once again, how time flies! I have been an active member of the Trust for many years, right back to the days when it was known as The Leicestershire and Rutland Trust for Nature Conservation Limited(!), and, shamelessly, since I regard geological conservation as being an integral

part of nature conservation, I have seen my role as one of promoting geology alongside all the birds, bees, and flowers stuff! It is remarkable how often biological and geological conservationists' eyes light with interest on the same patch of countryside. Of the thirty-four Trust reserves, ten are formally recognised as RIGS (Regionally Important Geological and Geomorphological Sites), and at least two are recognised as geological SSSIs (Sites of Special Scientific Interest). Amongst the Trust's reserves with well-recognised geological significance are Holwell Reserves (Brown's Hill Quarry, and North Quarry), Tilton Railway Cutting Reserve, and the Alter Stones Reserve in Charnwood. Less expectedly, but also of great interest are, amongst others, the Croft Pasture Reserve, and the Narborough Bog Reserve. Others, such as Great Merrible Wood Reserve are more surprising, and have a more hidden bit of geological interest. The result of all this is that, over the years, I have been visiting many of the Trust's reserves to assess, on the ground, their geological interest, gradually ticking them off the list, so to speak.

And so, just over two years ago, my wife and I came to visit The Miles Piece Reserve just east of Leicester. With an area of just 0.7ha, this is quite the smallest reserve in the Trust's portfolio (the average size is 36.2ha, the largest reserve comes in at 393ha). The Reserve lies within the Civil Parish of Keyham, but is closely adjacent to the neighbouring Little Beeby deserted medieval village, in the parish of Beeby. Access to the Reserve is via the footpath gate (at NGR: SK6695 0680), which is on the Ingarsby Road, at the more westerly junction leading into Keyham village. There is plenty of parking space on the verge. The footpath follows the hedge and then heads straight down to the bottom of the valley occupied by Barkby Brook. The entrance to the Reserve, not far from the stream, is to the left of the path at NGR SK6725 0712. Pretty well all the Reserve can be seen simply by looking over the gate: it is about 80m x 100m, and consists of rough ground, clearly a human artefact, cut into the hillside we came down (Figures 1-4).





**Figure 2 (left): Looking south across The Miles' Piece towards the higher ground at the back of the 'quarry'. Figure 3 (right): Looking west across The Miles' Piece across the 'pond' (just beyond the bush in the foreground, higher ground towards the left**



**Figure 4: Looking northeast across The Miles' Piece, with 'pond' in right middle ground, and with Barkby Brook in the gully hidden by the line of trees.**

It looks for all the world like a long-defunct quarry, with various degraded “faces” and “levels” (see Figure 7). The Trust’s site description refers to a spring-fed marsh (see the ‘pond’ in Figure 4), and there is what seems to be an old drainage ditch leading to the Brook. The northeast boundary of the Reserve lies to the other side of the course of the stream, which is thus included in the Reserve. The Brook (Figure 6) is a fairly typical, ‘youthful’, lowland stream, with a wandering incised course. The incised course is 15-20m wide, and some 2-3m deep, with steep to near vertical sides cut into drift. At the base of the incision, the 2-3m wide active stream meanders, and is creating an alluvial fill – “mini flood plain”.

As to what the quarry was after (assuming I am right), that is another matter. The Geological Survey’s Leicester Sheet (156) shows Anglian (Pleistocene, Quaternary) tills (particularly of the Oadby Till Member, the \*Oadby Liassic Till Member, and \*Thrussington Till Member) and glaciofluvial deposits, all resting on the Lower Jurassic \*Blue Lias Formation. The Survey maps the asterisked items as occurring on the Reserve itself. In not seeing why people should come here to dig ‘common old’ boulder clay, I initially plumped for the Blue Lias Formation as being their objective – potential source of lime and other building materials.

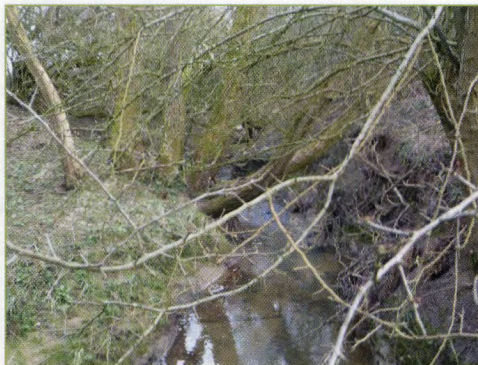


**Figure 5: The badgers’ sett in The Miles Piece, showing the red-brown glaciofluvial sands**

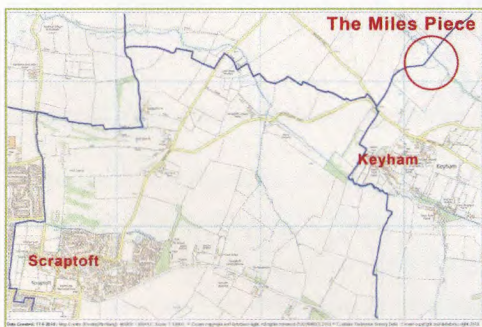
However, on checking out what Mr Badger had been up to (Figure 5), I found that he had been digging up well-sorted, partly consolidated, medium-grained reddish-brown sands. They are clearly the same as the ‘undifferentiated glaciofluvial deposits’ shown on the geological map in the near vicinity; Anglian in age, and

similar to the better-known Wigston Glaciofluvial Member. The Survey must have simply missed this patch in their mapping. Anyway, thank you Mr. Badger (when doing field geology, you do well to remember our furry friends!).

Finally, in the right light, you might notice well-marked medieval ridge-and-furrow structures in the fields crossed by the footpath – they are particularly well shown on Google Earth images (or similar). On the schematic map showing these (Figure 8), you can see that The Miles' Piece “nestles” nicely into the pattern of ridge-and-furrow, rather than “cross-cutting” it. Using good old-fashioned geological principles of cross-cutting relationships, it is clear that the quarrying (or what other human activity produced The Miles' Piece) happened in medieval times at the latest.



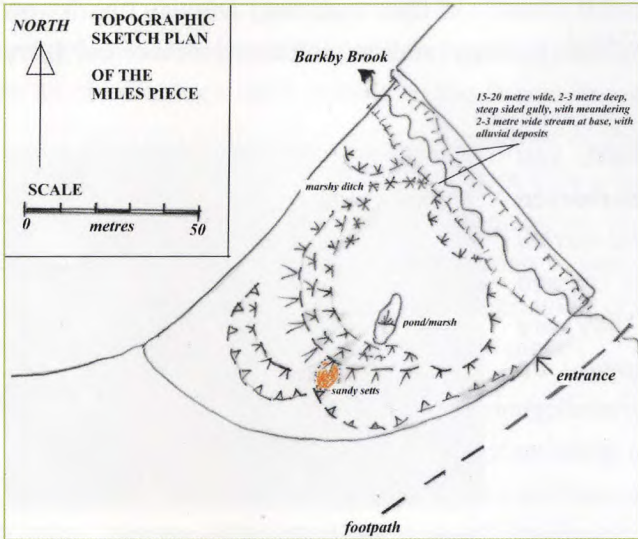
**Figure 6: Barkby Brook, a youthful lowland stream, with the near vertical high gully bank to the right, and an alluvial accumulation to the left of the**



**Location map**

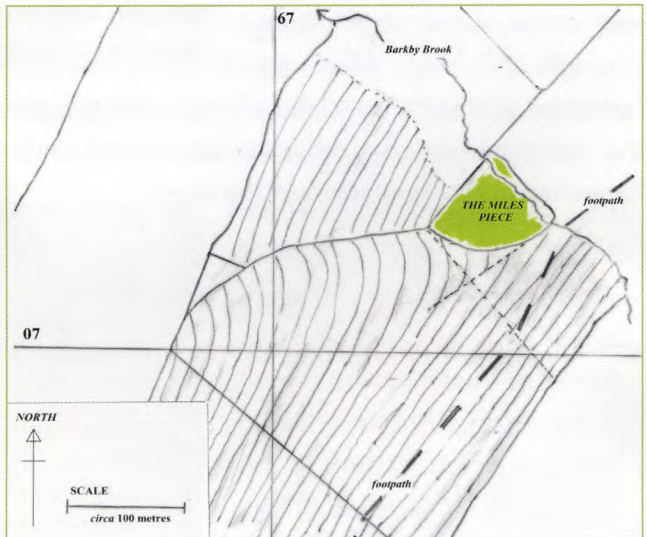
#### **References:**

- Carney, J.N., and Ambrose, K., 2007:** *The Geology of the Leicester District – a brief explanation of Sheet 156.* The British Geological Survey,
- British Geological Survey, 2007:** *Leicester, England and Wales Sheet 156, bedrock and superficial deposits, 1:50,000.* British Geological Survey.



**Figure 7: Sketch plan of the topographical features of the Miles' Piece, showing breaks of slope**

**Figure 8: Sketch map to show The Miles' Piece in its mediaeval setting. A schematic representation of the pattern and absence/presence of the ridge and furrow is shown, NOT the position of individual ridges and furrows**



Roy G. Clements 16<sup>th</sup> May 2018

## **SUMMER FIELD PROGRAMME – What's left to enjoy**

Please contact Rob Tripp via [r.newford@icloud.com](mailto:r.newford@icloud.com) or on 0116 279 0094 for more information

**Saturday 7th July**

### **Bantycok Quarry, Balderton, by Newark-on-Trent, Nottinghamshire**

This quarry is an opencast mine supplying gypsum to Formula of the St Gobain group. The site is the best UK section of the Triassic-Jurassic boundary, here the Barnstone Member at the base of the Scunthorpe Mudstone Formation (Rhaetian-Hettangian). Other strata to play with are the Branscombe Mudstone (holding the gypsum seams) and the Blue Anchor Formation of the Mercia Mudstone Group; overlain by the Westbury and Lilstock Formations of the Penarth Group.

**On Saturday 18th August**

### **Colleyweston Slate Mine**

The Section will be hosted by Nigel Smith, who is the co-Owner and Manager of the recently rejuvenated exploitation of the eponymous Slates. The Colleyweston Slate is a sandy limestone horizon, above the Lower Estuarine Series, at the bottom of the Jurassic Lower Lincolnshire limestone.

### **Mineral mines at Alderley, Cheshire**

A guide of Derbyshire Caving will take us into a couple of the mines at Alderley. Dr Geoffrey Warrington will be our Leader, and will encourage us to visualise the influence of structure and host rock facies on intrastratal fluid migration. We will study the epigenetic ore bodies of polymetallic mineralisation that are mainly in the Helsby Sandstone of the Triassic.

## Rock-spot Shot 2

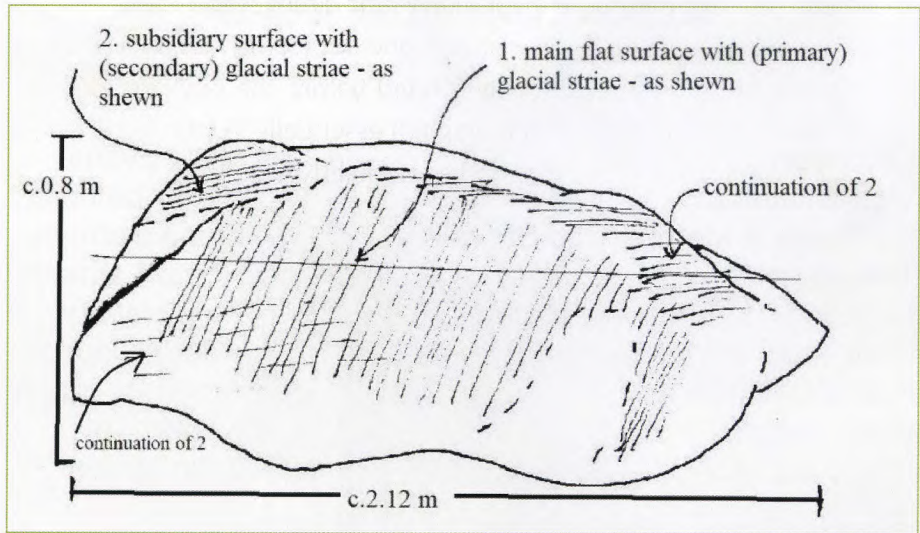
The Great Stretton Stone, a large glacial erratic discovered/rediscovered in 2008, shows two sets of glacial striae – one set (set 2) cutting the other (set 1). The striae were presumably formed before the boulder began its travels as a glacial erratic, when it was still essentially in situ. Perhaps the second set formed when the rock had been slightly dislodged.



It was photographed at NGR SK6498 0094, close to its original discovery point just off the Gartree Road, in Great Stretton, near its boundary with Oadby and Wigston. The erratic has since been taken away\*.

[**editor's note:** \*not far, but out of the way of today's large agricultural machinery, and in a safe place. An interesting geologists' conundrum: what does artificially moving a glacial erratic a hundred metres, from where the ice dumped it, do to its scientific integrity if its natural journey

was several hundred kilometres? (it's also possible medieval farmers had already shifted it once, off the ploughland). It's still a long way from its natural origin!



(RGC field sketch and photograph respectively 11<sup>th</sup> & 14<sup>th</sup> September 2008)

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