CHARNIA

The Newsletter of the Geology Section (C)
of the Leicester Literary & Philosophical Society

May 2013

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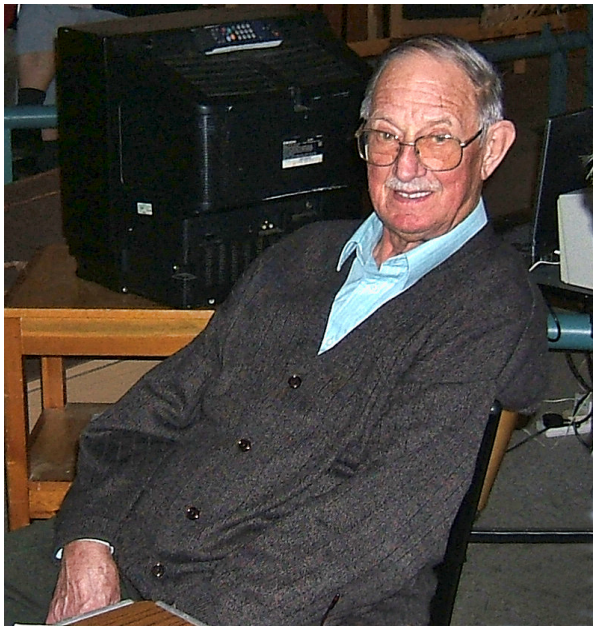
Editorial May 2013

Leicester is associated with more than its fair share of eminent geologists and scientific generalists with a penchant for geology (Bennett, Watts, Sylvester-Bradley, Attenborough, etc). Yet only fairly recently another name joined, or should I say rejoined, our pantheon of 'stars', a name that for many years was almost forgotten, some might say almost deliberately pushed aside. That is Alfred Russel Wallace, who taught at the Collegiate School in Leicester from around 1843 to 1845. While in Leicester his enthusiam for natural history, encouraged by studies in Leicester libraries, was fired by a young man he met in Leicester, the entymologist Henry Bates. It could be said that this interval in Leicester was the tipping point in Wallace's move to full commitment to natural history, and it could be argued that it was here that he took the first faltering steps along the road to unravelling the facts behind the origin of species. For of course, Wallace was the co-proposer of the theory of natural selection. It is true that Darwin's studies began well in advance of Wallace's, but it took Wallace's eureka moment during a bout of hallucinogenic sickness in 1858 in the Malay Archipelago to finally explain speciation. Unwisely, Wallace wrote to Darwin fully explaining how this worked, and through the dubious offices of Charles Lyell and others this letter was, without Wallace's knowledge, subsumed into Darwin's rapidly formalised ideas, and published as Darwin and Wallace. From that point on the theory of natural selection was irrevocably associated chiefly with Darwin, although Wallace did enjoy some fame for the rest of his lifetime. Yet after his death Wallace and his part in the development of the theory of evolution gradually faded from public awareness and by the late 20th century he was almost forgotten except for a few diehard supporters who fought to bring his achievements back into the public forum.

And how successful they were, Wallace is now back where he belongs, always now (hopefully) to be referenced, alongside Darwin, whenever evolution is discussed. I was stimulated to these musings by a quite excellent recent TV programme on Wallace by his avid supporter Bill Bailey, a chap I'd hitherto consigned to the fluff end of the entertainment business, but who proved to be an engaging and committed communicator. Apologies to those of you who have heard the Wallace story before, but I do feel that Leicester should continue to trumpet its pride in one of its adopted sons.

Many of you will remember the cheerful visage of Doug Lazenbury, for many years our treasurer until his resignation in 2003. Doug passed away in early March at the fine age of 94, and it was pleasing that some of his Section friends attended the funeral. I remember Doug well, always calm and efficient in doing his job, but I'll also remember with a smile the rather character-building shorts he occasionally wore on field trips, and his penchant for, and knowledge of, good wine.



Douglas Alfred Lazenbury at the Christmas Meeting of 2005

Andrew Swift

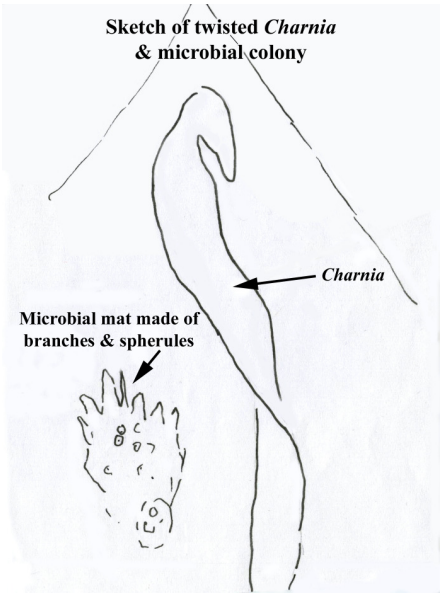
More on the Charnian fossils

'It's the small creatures in an ecosystem which are more prolific than the larger ones and therefore should be studied in detail'

from 'Darwin's Lost World' by Martin Brasier

The illustrated photograph was taken at 5.45am on a May morning, by Aron Bowers, in Bradgate Park. At that time the early morning sunlight was particularly effective in illuminating some unusual structures, which are explained here.

The main and largest fossil is a twisted specimen of a *Charnia* frond, which has become known colloquially as the 'false teeth', after a young student remarked that the fossil reminded him of his mother's set! To the left of this specimen is a colony of 10 finger-like structures possibly bearing pores – in fact the whole area is a mass of small spherules of microbial matting. Microbial matting is very common as background over the whole bedding plane and can be seen at a number of Ediacaran outcrops in Charnwood Forest.



More research is being undertaken and the results compared with structures seen in the Ediacaran sequence in Newfoundland.

Small structures such as those seen on the photograph are very difficult to photograph and can only be recorded under favourable lighting conditions.

Helen Boynton

Reinvestigation of a "worm trail" from the Ediacaran, Charnwood Forest, Leicester

In 1995 a trail of unknown affinity was described by Boynton and Ford (1995). Crimes (pers. comm.) considered it to be a 'worm trail'.

On re-examination of a very good photograph (fig 1) taken by Aron Bowers at 5.45 am in May 2012 in excellent dawn lighting, more detailed structures were visible. The trail showed a central rod-like structure running along it. At its distal end it appeared to terminate in a cluster of faint buds. There also appeared to be faint frond-like structures emerging from the length of the 'trail' (fig 1a). It was therefore possible that it was a longitudinal section of a *Charnia* which had never been recorded before.

Fig 1. 'Trail' in Bradgate Park

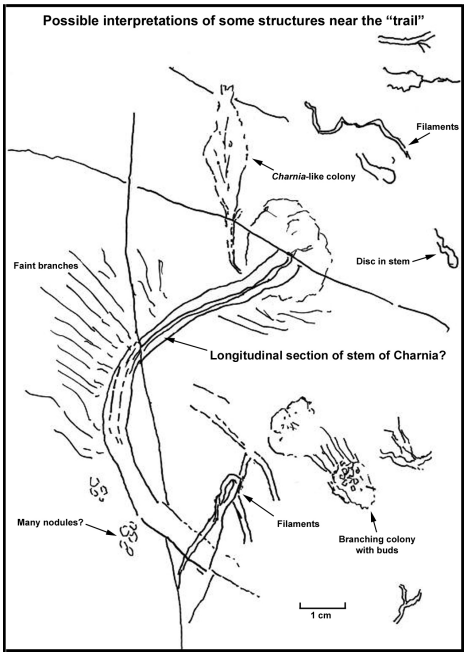


Fig 1a. Interpretation sketch of 'trail' in Bradgate Park

An almost similar one was also seen in the lowest beds of the Precambrian in Charnwood Forest, at Ives Head (figs 2, 2a). To the right of the 'trail' and near the top of the photograph is a *Charniodiscus*. To the right of the 'trail' and lower in Fig 1 can also be seen a group of criss-crossing and branching unnamed filaments similar to those recorded by Liu *et. al*. (2012, fig 7) in the Drook Formation at Pigeon Cove, Newfoundland. On the photograph and sketch (figs 1, 1a) are a number of juvenile Charnias, some of which are fragmented (Bowers pers. comm).

The larger fossils appear to be set in a mass of microbial mats and juvenile forms and here probably accumulated as a life assemblage,

compared with the Drook Formation beds which show evidence of a death assemblage killed by ash fall.

Fig 2. 'Trail' at Ives Head (photo Andrew Johnson)

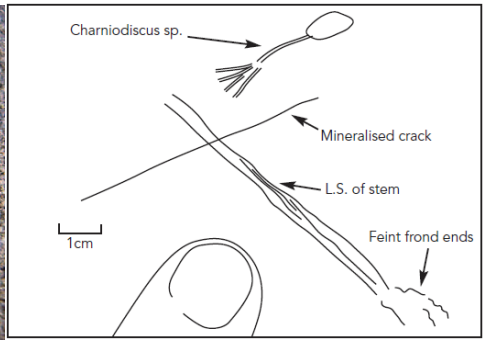


Fig 2a. Interpretation sketch of 'trail' at Ives Head

A cast of the trail in Fig 1 can be seen at the British Geological Survey, Keyworth.

References

Boynton, H. E. and Ford, T. D. 1995. Ediacaran fossils from the Precambrian (Charnian Supergroup) of Charnwood Forest, Leicestershire, England. *Mercian Geologist* **13**, 165-182.

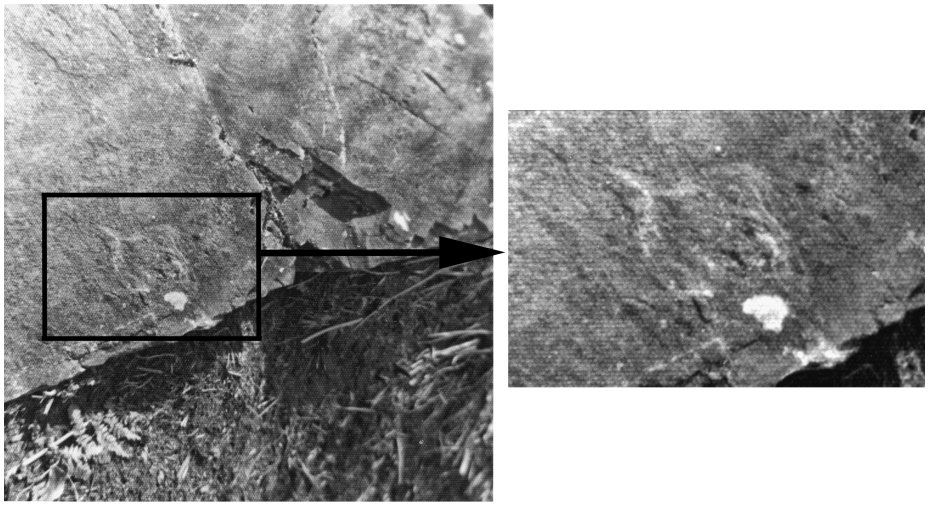
Liu, A. *et. al*. 2012. A new assemblage of juvenile Ediacaran fronds from the Drook Formation, Pigeon Cove, Newfoundland. *J. Geol. Soc., London* **169**, 395-403, fig 7.

Helen Boynton

The Mystery Photo

On scanning through old photographs of Charnian fossils I found this one. It could be part of a *Primocandelelatrum* without the disc, or possibly a *Bradgatia* with a stem. On the back of the photo I had labelled it as 'frond, Heyday Hays, Markfield Lane, Bradgate Formation'.

After a little detective work looking through my negatives I tracked this unusual square one to Dennis McVey, an Adult Education student in the late 1970's. He couldn't remember the exact locality, but thought it might be the Outwoods or North Quarry, most likely the latter, I believed. Does anyone recognise this fossil? I would love to know.



Helen Boynton

Frederick William Bennett, M.B., M.D., M.R.C.S., B.Sc., F.G.S., surgeon and geologist 1860-1930

The Geology Department of the University of Leicester is housed in the Bennett Building and there is a Bennett Chair of Geology. There is an annual prestigious Bennett Lecture, and the Geology Department had a Bennett Reprint Collection. Dr Bennett was a leading medical practitioner and surgeon in Leicester so why should he be honoured as a geologist?

Frederick Bennett was born in 1860 and lived in Leicester for most of his life. He was the younger son of John Bennett, a prosperous corn merchant in Leicester. Frederick was educated at Wyggeston School and did his medical training at Owens College, Manchester (later the University of Manchester), gaining the qualifications of MB (1884), MD (1885), MRCS. Much later, about 1905, he gained a BSc in Geology (probably as a mature external student of London University). He was also a Fellow of the Geological Society. After his medical training he had short posts in Manchester hospitals before returning to Leicester to set up a private medical practice; he also worked at the Leicester Royal Infirmary as an honorary physician. He was instrumental in founding the Laryngology Department there (a branch of medicine which had received little attention): later it was re-named the Ear, Nose and Throat Department. He died at the age of 70 on 3rd December 1930. He had high

standing among Leicester's leading citizens and was a member of Leicester Corporation's School Board (he initiated special training for science teachers) and served for 28 years on the Museums Committee. He was a stalwart supporter of the Museum and donated many items to its collections. He was a long-standing member of the Leicester Literary and Philosophical Society, President in 1904-5, as well as being a member of the Geology Section and its Chairman from 1908 to 1930.

Though the idea of a civic university had been discussed in the 1890s, it was not until towards the end of the 1914-18 war that Alderman Sir Jonathan North, Dr Astley Clarke, Dr Fielding Johnson, together with Dr Bennett and others proposed that a University would make a fitting memorial to the fallen. On November 12th 1918 Dr Bennett donated £500 for this purpose and stimulated donations from many others. The old County Asylum had been empty since 1907, though it was used as a hospital during World War I. In 1919 it was then bought secretly to become the nucleus of a University College. Later it was re-named the Fielding Johnson building and now houses the University's administration. Though Nottingham had a University College since the 1880s and gave extension classes at the Working Mens College in Leicester (later Vaughan College) a post-war idea that Leicester, Nottingham and Derby should be parts of a Federal University of the East Midlands came to nothing. Dr Bennett's daughter Rhoda was one of the first students at the University College in 1921 and later she became the College, later University, Librarian, serving from 1931 to 1961.

Apart from his medical duties Dr Bennett was a member of the Museums Committee for 28 years where he was instrumental in appointing E. E. Lowe as Museum Director in 1907. He was also a member of the University College Council. Dr Bennett had a passionate interest in geology and during the summer months arranged to have a day off each week to indulge his hobby of the study of the rocks of Charnwood Forest. Though his training in geology was limited to a B.Sc. in 1905, he learnt much from other pioneers of county geology, often accompanying them in the field. In particular he was inspired by W. W. Watts of Imperial College and C. Fox-Strangways of the Geological Survey. Together with another medico Bernard Strachey (Stracey in some reports), he mapped the complicated geology of the northwestern part of Charnwood. He led excursions, some with Strachey, others with Watts. The latter's contributions to the Geologists' Association around 1907-1910

incorporated some of Bennett's observations. Bennett, sometimes with Strachey, contributed several papers on Charnwood geology to the Lit & Phil's transactions around 1906-1912. Bennett led many excursions for the Geology Section and his studies culminated in the comprehensive paper *Geology of Charnwood Forest* by F.W. Bennett, E.E. Lowe (expert on Mountsorrel), H.H. Gregory (Museum geology keeper) and F. Jones (University of London) in the *Proceedings of the Geologists Association*, vol. 29, pp. 241-298 (1928). Bennett *et al*'s interpretation of the geology differed somewhat from Watts whose classic book of 1947 had minimal revision from the latter's report of 1910. Dr Bennett contributed a history of the Geology Section to the Lit & Phil's Centenary volume, published posthumously in 1935.

During his studies Dr Bennett made a systematic collection of samples from almost every outcrop in Charnwood Forest and cut thin sections from most. In particular the curious igneous rocks of Bardon Hill intrigued him: samples and thin sections of these are still in the Leicester Museum collections.

As there was no provision for geological education in the infant University College, Dr Bennett gave many public lectures, some via the Literary and Philosophical Society and he contributed to the Museum's popular series of Saturday evening lectures, usually with packed lecture rooms. He had the reputation of being an eloquent and lucid speaker. His topics were current thought on various scientific developments such as Einstein's theory of relativity and on many geological matters, including early geophysics and geochemistry. His last lecture was only two months before he died. Towards the end of his life Dr Bennett was looking forward to the visit of the British Association to Leicester scheduled for 1933 and wrote the geology chapter for the scientific survey volume but he sadly passed away before its publication. Obituaries by E.E. Lowe, Bernard Strachey and H.H. Gregory were published in the Lit & Phil's Transactions in 1931 (vol.32, pp. 25-34).

After Dr Bennett's death his daughters, Rhoda and Hilda, gave his house at 104 Regent Road to the University College. They also gave money (said to be £6000) to endow a Lectureship in Geology to reflect his lifelong interest in the subject. In recent years the house has contained the Mass Communications Research Centre. However, as there was no course in geology in the 1930s the income from the fund was diverted to the Physics Department, where the first Bennett Lecturer was Dr L.G.H. Huxley: the

title lapsed later.

Frederick's older brother Henry Swain Bennett, a director of the shoe company Freeman, Hardy and Willis, donated money to the Lit and Phil to support research but he is not known to have taken much interest in geology.

Frederick William Bennett 1860 – 1930

It was not until 1951 that a Lecturer in Geology, Dr "Mac" Whitaker was appointed, when the External Regulations of the University of

London required that students studying Geography as a science should have at least one year's course in geology. Thus Mac founded the Sub-Department of Geology within the Geography Department. In 1951 he enrolled six students. Two years later it was made a separate Department on the retirement of Professor Bryan. Geology courses and exams were still supervised under the University of London's external degree system until independent University status was granted in 1957. Dr Ford was appointed in 1952 when all six students chose an optional second year's course in geology. Teaching was geared to the London External General Degree but in 1956-7 two students opted for the London Single Honours degree in geology and Dr Tony Evans joined the staff. Peter Sylvester-Bradley arrived as the first Professor in 1958 and was given the title of Bennett Professor. The Bennett legacy from the 1930s intended for Geology teaching came to light on Prof. Sylvester-Bradley's appointment but inflation had taken its toll and the income was only enough to fund an annual Bennett Lecture, which continues to this day. The growing Geology Department moved into a new building in 1965 and what better to call it than the Bennett Building, which also housed the Geography and Mathematics Departments (Maths later moved out and Geology took over some of its rooms).

Soon after Professor Sylvester-Bradley arrived Rhoda and Hilda Bennett gave a substantial sum to fund a Bennett Reprint Collection to support the provision of geological literature when the library was sadly deficient in geological books and in back numbers of journals. The Collection grew to about 50 000 reprints and needed a clerk to curate it. The rise of the internet and on-line availability of journals has meant that the collection is little used today and the remaining reprints are in storage.

Dr Bennett's portrait hangs in the Sylvester-Bradley Laboratory beside that of Professor Sylvester-Bradley. His contributions to the knowledge of Charnwood geology were effectively those of a self-taught amateur but important and influential. Without him we might never have had a University of Leicester let alone a Geology Department. Sadly Dr Bennett did not live to see either come to fruition.

Trevor D. Ford

Further information can be found at:
http://www.le.ac.uk/litandphil/presidents/1904/.html

Good news for building stone enthusiasts

An excellent and most important addition to the online information available about our local building stones was recently unveiled on the British Geological Survey website. The result of painstaking and lengthy research, the site, the brainchild of Section members Albert Horton and Julie Harrald, details the building stones used in the major buildings in our Leicestershire settlements. Thus, for example, we can now discover what is the type and the geological horizon of the ironstone that forms the fabric of Hallaton church, or the origin and provenance of the stone that was used in our numerous war memorials. Lots more information and detail about the age and architecture of the buildings (particularly the churches) is also included. The site makes use of the most up-to-date stratigraphy and terms and is an invaluable resource for the buildings investigator or researcher, and also anyone else who has an interest in our local buildings. The umbrella name of the page on the BGS website is English Heritage County Building Stone Atlases. I know how good it is, I've used it several times in my research into Leicestershire's churches.

Have a look today, the site can be explored on:

http://www.bgs.ac.uk/mineralsuk/mines/stones/EH_atlases.html

Andrew Swift

Gift Aid Small Donation Scheme (GASDS)

The Government has just given small charities a tax break. The intention is to give charities with regular public collections the opportunity to get the tax back on money that people put in the tin. The new scheme allows charities to simply claim the tax back on the total amount given in donations.

To prevent it being a free for all, the Government have a number of qualifying criteria. We meet those criteria, so your Committee gave some thought as to how we could benefit. This is what we propose. At present people are asked to make a contribution when they have a cup of coffee before our meetings. The materials for providing the coffee are very generously given by Section members. So the money that we collect is, in fact, a donation to the funds of the Section. What we propose is making

this clear by having a tin available at the start of every meeting and inviting people to make a contribution. If you have coffee then we suggest that you might like to contribute £1, somewhat less for tea, perhaps. Even if you don't have a drink, you might like to consider donating some of your loose change. At the end of the year we will make a claim under the new scheme which will boost the donations total by around 22%.

Does this mean that our existing Gift Aid Scheme is now redundant? No it doesn't. One of the qualifications is that a charity has to be reclaiming tax through the usual Gift Aid Scheme in order to qualify for the Small Donations Scheme as well. Does it mean that we can claim tax back on bigger donations that we are given? No it doesn't. It only applies to small cash donations of less than £20. Does it mean that we could claim under the scheme if we were to sell something? No it doesn't. We can only claim under the scheme if we are not meeting expenses as we would be if we were making sales. The scheme only works for us in terms of drinks before meetings because of the generosity of Section members in giving the materials free. Nevertheless, it is a way of us capitalising on their generosity, and so, from the next round of winter meetings we will start up the new scheme.

I'll remind everyone again about the arrangements in October.

Roger Latham, Treasurer, Geology Section

Were you there? The Ford Fiesta March 2nd 2013

Summer Programme 2013

Please note that due to our recent changeover of field secretaries, there may be minor continuity problems. However, the excellent programme is very largely finalised. If in doubt, would-be participants are advised to contact new secretary Robert Tripp for details in advance of each trip, although we will continue to send out prior notification and details of each excursion as it comes up, together with a booking slip.

Saturday May 4th Lea Quarry, Much Wenlock. Leader Mike Allen.

Saturday May 25th Welton le Wold, Lincolnshire. Leader Helen Gamble. An open meeting in memory of John Aram.

TUESDAY May 28th 10.00am. Collyweston Slate Mine. Book early for this one, as we are limited to a party of 8 persons only. This visit may be unsuitable for those with impaired mobility, check with Rob.

Friday May 31st – Sunday June 2nd Weekend excursion to the Vale of Wardour, Wiltshire. Leader John Needham. An optional trip will run on Friday morning (meet 11.00am) to Oathill Quarry near Temple Guiting, Glos, led by Andrew Swift.

WEDNESDAY June 19th 3.00 – 6.00pm. Measham Brickworks. Leader Steve Godfrey.

Saturday July 13th Cross Hands SSSI, Burton Dassett Hills (LGS 33) (Marlstone Rock Formation), Avonhill Quarry (LGS 50). Joint fieldtrip with Warwickshire Geological Conservation Group. Leader John Crossling.

Saturday September 7th Breedon Cloud Hill Quarry. Leader Frank Ince.

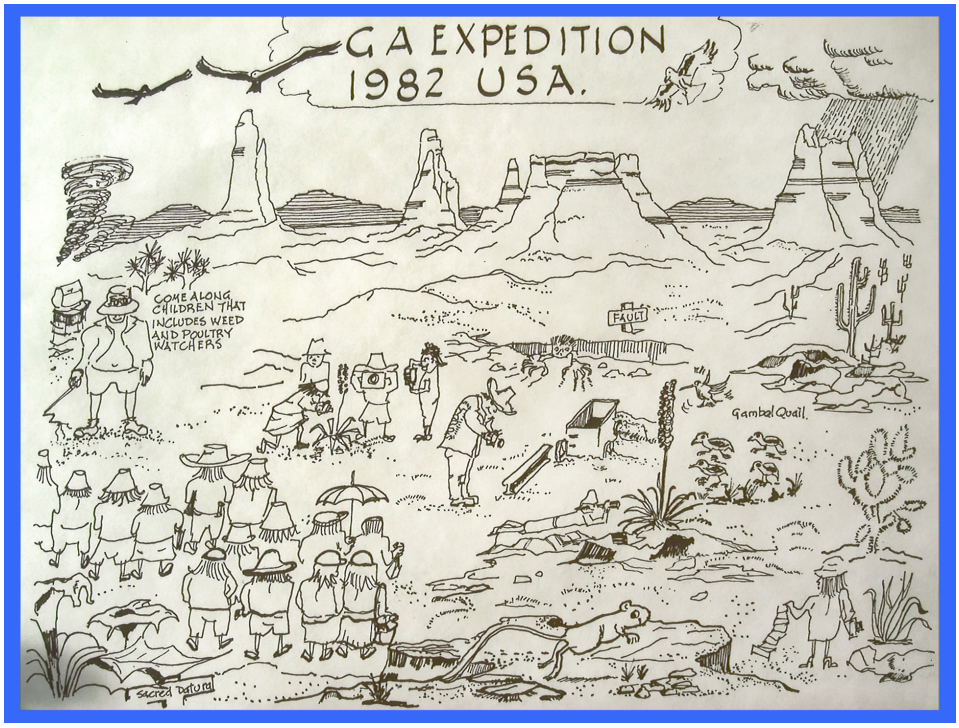
An excursion to Derbyshire will run at some point in August or later, led by either Peter Gutteridge or Dave Wright. Also, for a last trip in October we are hoping to secure a visit to Barrow on Soar BPB Formula gypsum mine. These excursions will be flagged in good time.

Back to the Future, well ….. 1982

To close this issue, a bit of whimsy. All of 31 years ago, Trevor Ford led a Geologists' Association excursion to the Dark Continent (aka USA). That trip clearly left an indelible mark on one of its participants, Mrs Mildred Hall, who sent us her reminiscences of it in connection with the Ford Fiesta in March. Mildred details lots of incidents in a letter sent to our Chairman; she also sent a couple of cartoons. These were drawn by her husband, and the one below shows Trevor trying to get a clearly reluctant group back to the cars. All the cars were linked by radio so that Trevor's words of wisdom could be heard by all.

I'll probably return to this theme in a future issue with another cartoon and more memories.

Andrew Swift



Cover photo (if you hadn't guessed) is Mountsorrel (Buddon Wood) Quarry

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