

CHARNIA

Newsletter of the

Geology Section

Of the Leicester Literary & Philosophical Society



September 2019

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Cover photo: Roger Latham with one of the fossils linked to the article on Page 9.

Editor's notes

Next month sees the start of the Section's year and the indoor meet programme. Please read the item on subscriptions on Page 3. The form enclosed can be posted to Gavin with your cheque or handed over at the first meeting – details below.

Roger has also written on Page 4 about the need for volunteers on the Committee and a new President as Mark is moving to Cambridge. Mark has served the Section well over many years and will be sorely missed but we wish him well in his new post.

Thank you Geoff and Roger for your items which both make for interesting reading. However, this edition of Charnia is slimmer than usual due to a shortage of material. Please put pen to paper or, better still, finger to keyboard and tell us about your ventures in the last year or anything else that takes your fancy. Comments about Brexit will not be published!

Winter programme of speakers

The programme starts on the 2nd October at the usual venue. The first two speakers are:

Wednesday 2nd October 2019

Kieran Blacker (University of Leicester).

Wind turbines and woolly mammoths: the past, present and future of Dogger Bank.

Wednesday 16th October 2019

Dr Nigel Woodcock (University of Cambridge).

Fissures along faults: formation, fill and importance.

Hope to see you there.

Brian Waters bdh2o@hotmail.co.uk

A gentle reminder.

At the last AGM Members agreed to increase the annual subscription by 50% and keep the existing arrangements for the publication of Charnia. So, from October 1 the subscriptions will be:

Single annual subscription will increase from £10 to £15

Family subscription will increase from £15 to £22.50

Parent body subscription will increase from £8 to £12.

The new subscription levels have already been entered into the Section's accounting software, so if you want to avoid Gavin and myself chasing you for an unpaid subscription please will you contact your bank if you pay by standing order and increase your standing order to the new amount, payable on 1 October.

As before we will try to hold these subscription levels for as long as possible, but the new arrangements will only work if members not only pay the increased amount, but also write articles, notes, and other material for publication in Charnia. Brian Waters as the Charnia editor will be delighted to receive your contributions.

Don't forget!

Roger Latham.
Honorary Treasurer and Vice Chair.

A form is included with this edition of Charnia to complete and return with your subscription to the Membership Secretary:

Gavin Drummond,
Ida Cottage,
Back Lane,
East Langton,
Market Harborough,
LE16 7TB

Houston – we have a problem!

At the last AGM we presented to the Section the difficulties we were facing in getting enough volunteers to fill committee posts and take on future responsibilities as officers of the Section. We ended up with having no Chairman elected, and no Publicity Secretary. Albert Benghiat, who had been our publicity officer had moved away, and Mark Evans who had served for a very long time as Chairman was facing a change in his personal circumstances following the decision of Leicester City Council to make redundant all the curators in the Museum Service.

The University and the Section both protested to the City Council about the loss of the curator posts and expressed our concerns about the maintenance and security of the geological collections. However, the City Council decided to go ahead, and as a result Mark was made redundant at the end of March. Mark has managed to secure a new appointment, and we are very pleased that he has been able to do so and wish him well in his new post for the future. However, that post is in Cambridge, and although Mark has agreed on a temporary basis to continue to act as Chairman, as he takes up his new role it will become increasingly more difficult for him to do this.

So, Section Members must now expect to see much more of me standing in front of you during the Winter Programme lectures introducing the speaker and dealing with questions and answers. It is also likely that there will be some occasions when we don't have any coverage, and it may be other members of the committee or the Section will have to take responsibility for introducing the speaker and giving hospitality. Although we will try to keep up the flow of information that you have been used to seeing before meetings, it is possible that this will diminish where it was dependent on personal contacts which I simply do not have.

We are therefore left with an increasing difficulty. We hope to be able to get through this next season, but we will face bigger problems if by the time of the next AGM we are not able to sort out the Section's leadership and administration problems. So, I am raising this problem now to once again appeal to the Section membership to consider carefully if they can offer themselves to help run the Section in the future. If no fresh names are forthcoming, then I foresee that we may face a period of considerable attrition in which the activities of the Section are diminished and it would be a shame if we lost what is a very well supported, well regarded, and academically strong vehicle for the popular promotion of Earth Science.

Roger Latham.
Vice Chairman.

First finds – in the ‘unfossiliferous’ British Trias

Geoff Warrington

That the British Trias was largely unfossiliferous was the general view held when I became interested in geology at school in Manchester, sometime back in the ‘late Anthropocene’. Alderley Edge was a local site of interest, primarily for the mineralization in the ‘Keuper Sandstone’ (now the Helsby Sandstone Formation). At that time the opencast part of the Engine Vein mine [SJ 860 774] afforded good exposure of the lowest part of that formation, the highest beds in which are mudstone (Fig. 1(a)). While looking through some of that mudstone, with no expectation of finding anything, I noticed an object, c. 3.3 mm-long, which appeared to have growth lines*. This, a specimen of the crustacean *Euestheria*, was my first Triassic fossil and was followed with the discovery of a vertebrate footprint, the first from the Trias at Alderley**. These finds ignited a lifelong interest in the subject and when, at university in London in 1963, I heard that fossil plant spores were used for dating and correlation in the ‘Old Red Sandstone’ I thought of looking for them in the ‘New Red Sandstone’. Material from the Engine Vein opencast was to hand and to everyone’s surprise one sample yielded an assemblage consisting largely of conifer pollen** and led to the start of a PhD project in 1964. I then learnt of palynological work being carried out by R.F.A. Clarke on the Worcestershire Trias (published in 1965; *Palaeontology*, 8, 294-321). My specimens were the first from the Cheshire Trias but neither mine nor Clarke’s were the first from the British Trias. Professor L.J. Wills, who I was privileged to know for many years, illustrated spores and pollen from the Worcestershire Trias in 1910 (*Proc. Geol. Assoc.*, 21, 249-331). Even earlier, Miss Igerna B.J. Sollas recovered spores of a bryophyte (*Naiadita*) from younger beds, in the ‘Rhaetic’ (now the Penarth Group), and illustrated them in the *Quart. J. Geol. Soc. Lond.* (57, 307-312.) in 1901!

I continued with the study of fossil spores and pollen (palynology) of the Trias at university and then the Geological Survey. Success varied but the results underlined the fact that the British Trias is not unfossiliferous. Following my first finds at Alderley I became aware of a varied flora and fauna which was, perhaps because of the scattered, obscure or inaccessible nature of the literature, generally unappreciated and for that reason I reviewed the subject in 1976 (*Proc. Ussher Soc.*, 3, 341-353). However, relevant literature continued to appear and Supplements to the review were published annually in that journal until 1986 and then, from 1987 until 2009, in *Albertiana*, the newsletter of the Subcommittee on Triassic Stratigraphy. In order to make it more accessible to British readers on a regular basis it was transferred to the *Mercian Geologist*, beginning in 2012 (volume 18, part 1) with Supplement 34 in which 39 titles on or relevant to the subject were listed. The series is continuing in the *Mercian Geologist* and Supplement 41 will appear this year in volume 19 (part 4).

The literature which has appeared since my review in 1976 dispels any notions that the British Trias is unfossiliferous! New discoveries continue to be made, on the south Devon coast for example (e.g. Coram et al. 2019. *Proc. Geol. Assoc.*, 130, 294-306), and reviews of existing collections sometimes yield unexpected results.

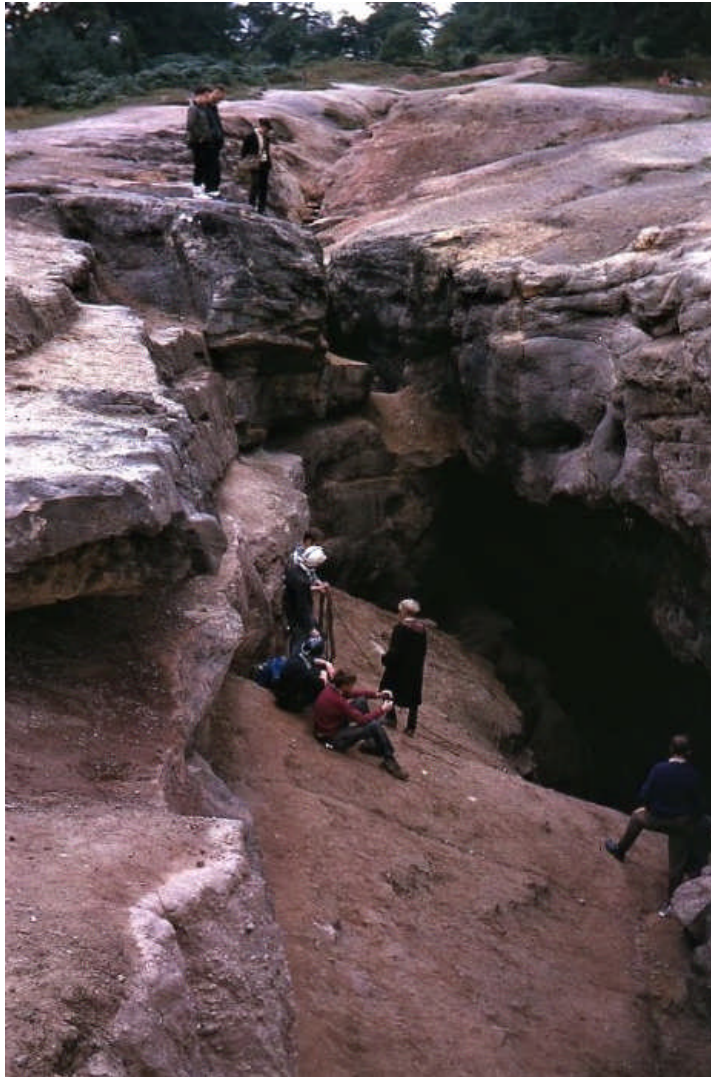


Fig. 1. (a) The opencast part of Engine Vein mine, Alderley Edge, in 1963. The mudstones with *Euestheria* are at the far right of the opencast; the productive palynology sample was from the mudstone at the bottom left.



Fig. 1 (b) 2014 - the exposure of these Anisian (early Mid-Triassic) beds is now badly degraded.

Photos G. Warrington.

* Illustrated in: Warrington, G. 1963. The occurrence of the branchiopod crustacean *Euestheria* in the Keuper Sandstone of Alderley Edge, Cheshire. *Lpool Manchr Geol. J.*, 3: 315-319.

** Documented in: Warrington, G. et al. 2016. Palaeontology: the dating and correlation of the Triassic rock formations. In: Prag. A.J.N.W. (ed.) *The Story of Alderley – Living with the Edge*. Manchester: Manchester University Press, 77-81.

Stuck!

Roger Latham

Los Angeles these days is a sprawling metropolis nestling in the basin of hills surrounding it on three sides with the sea on the fourth. In the past the sedimentary basin mostly consisted of farms and cattle ranches. What made Los Angeles' fortune was the discovery that in the sedimentary basin there were oil resources. And from time to time in the past pools of this oil made its way to the surface combining with the surface material to form sticky tar pits. It seems that the oil was not always oozing to the surface, and that from time to time pools of water developed which were attractive to the Pleistocene wildlife, including mammoths, dire wolves, short faced bears, ground sloths, and the sabretooth tiger. Inevitably they got stuck in the sticky tary soils and as the large animals struggled to get away they inevitably attracted predators both mammalian and avian who in their turn also got stuck.

At La Brea Tar Pits the bones of these unfortunate victims (one of which was a woman dated to around 9000 BCE) sank steadily into the tary layer only to be replaced by other victims so that the tar pits became a vertical column of bones of the unfortunate victims who simply wanted a drink. The La Brea Tar Pits are now in downtown Los Angeles just off Wiltshire Boulevard, and they have been excavated for their bones in the past and are still being excavated.



One of the tar pit pools has been left intact (see figure left) and in the adjacent George C Page museum they are still excavating the jumble of bones from the tar pits.

A wide variety of animals have been extracted including:



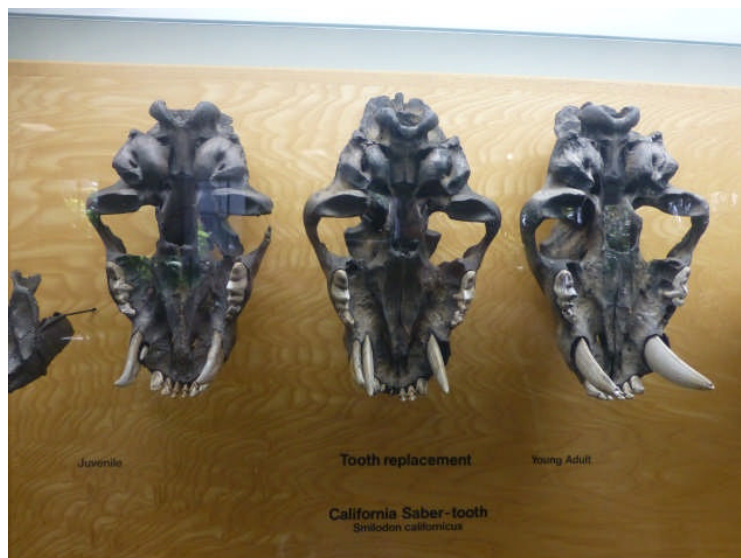
the Columbian mammoth



its predator Smilodon – the sabretooth cat



and also including **vultures** who came to settle in the prey and never got away.



So extensive are the bone layers that there is a whole wall of **Smilodon skulls**, and it provides an unparalleled opportunity to look at the development of animals from juveniles to adults as well as the dimorphism.

You even get the opportunity to handle some of the specimens –see cover.

SECTION C COMMITTEE 2019-2020

Chairman	Mark Evans
Vice-Chairman	Roger Latham
Secretary and Membership Secretary	Gavin Drummond
Treasurer	Roger Latham
Lecture Programme Secretary	Tom Harvey
Field Programme Secretary	Robert Tripp
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