



HERTFORDSHIRE GEOLOGICAL SOCIETY
NEWSLETTER WINTER 2020/21
& PROGRAMME 2021

Field trip to the Lapworth Museum of Geology, University of Birmingham

Saturday 8th February 2020

By Nick Pierpoint

In the spring of 2018, the storm referred to as the 'Beast from the East' whittled down a party of 20 to just 7 able to travel to the Lapworth Museum of Geology in Birmingham, as rail network across the country was severely disrupted. It was such a fascinating trip that the HGS decided to re-run in it February 2020. We replicated the trip for the benefit of those who missed out previously. Again, for the 16 who attended rail was the favoured transport option.

At 11:00 we were greeted by Jon Clatworthy museum director with coffee and some rather up market biscuits. We had an informative introduction from Jon who provide on historical over view of the museum and collections from Mason College in the 1880's (a forerunner of the University of Birmingham) in central Birmingham to its current location in the leafy suburbs of Edgbaston. The building has a fascinating history – initially being an engineering facility before becoming the Geology departments museum. It was converted an ambulance station during WW 1 as some of the campus buildings were converted to a hospital.

Jon also shared some insights as to what had to be done in order to successful receive significant grant from the LHF and how much consideration had gone into the themed displays. In the remainder of the time before lunch Jon steered us through the exhibits which are presented in an uncluttered, informative and contemporary manner.

In the afternoon we had opportunity to go behind the scenes handle some hugely significant specimens including the Dudley Bug Holotype – (*Calymene blumenbachii*) (Fig. 1). The recently installed rolling rack system contains in excess of 300,000 specimens from Lapworth, Sir Charles Holcroft, and John Percy. We also had the chance to briefly see the archives which contains many artefacts and papers from Lapworth which included wonderfully detailed x-sections from his research areas within the Southern Uplands. The museum is free of charge as is the parking at the weekend.

For a more detailed write-up see that of the first HGS trip to the Lapworth either in the HGS Newsletter Winter 2019 <https://www.hertsgeolsoc.org.uk/Newsletter2018-19.pdf> or the Geologists' Association Magazine Vol 17 No.2 June 2018.



Fig.1. Dudley Bug *Calymene clumenbachii* (Photo: Nick Pierpoint)

Working Party Annual Field Trip to Little Heath SSSI, Potten End

Saturday 22nd February 2020

By Lesley Exton

It was a cold, foggy morning, but dry, including the bottom of the pit. The only dry weekend of February. Everyone came suitably dressed in hi-viz, some with their new HGS tee-shirts on underneath [Fig. 2] and carrying various gardening tools and receptacles. We were able to see the efforts of previous years with less brambles to clear to the right.

Due to illness we were down on numbers, however, after three hours work of removing the invasive saplings, brambles and other vegetation site was transformed [Figs. 3 (before) & 4 (after)]. All the vegetation was moved off site and deposited in another pit nearby with the agreement of the National Trust.



Fig. 2: Working party in front of cleaned face [Photo: Lesley Exton/Chris Green]

The face of the exposure was cleaned by the removal of no more than one centimetre of material so that the features of the stratified sand could be clearly seen, as well as contact with the gravels above and below. Most of the group then retired to a local pub for a well earned lunch, I went to pick my brother up who I'd left looking round St Albans and had brought too much to carry back.



Figs. 3 & 4: Little Heath: Before and after [Photos: Clive Maton]

Hertfordshire Bourne Pop Up Geo-trail

Sunday 15th March 2020

Leader Nick Pierpoint

At the HGS AGM on Thursday (12th March 2020) a 'Pop Up' geology trip was proposed taking advantage of water observed in the Hertfordshire Bourne, just to the south west of Berkhamsted. It was potentially the last formal trip for a while as the coronavirus started to take hold and have a profound impact on society.

The geo-trail was from the edge of Berkhamsted to Bourne End, and much of the walk followed the valley of the Hertfordshire Bourne (Bourne Gutter). We saw ponded water in two swallow holes and some stream flow through a culvert into a mill leat which in turn joined the River Bulbourne.

The Hertfordshire Bourne was made famous by John (later Sir John) Evans, who was the first in 1878 to describe its intermittent flow. Later, whenever the

bourne flowed, it was visited by members of the Hertfordshire Natural History Society, often under the leadership of John Hopkinson. One such trip in the 1911 organised by the Geologists' Association left Euston at 14:15 arriving at Boxmoor Station (Hemel Hempstead in new money). The party walked to Bourne End and then up-stream to Bottom Farm, and over the hill to Berkhamsted having tea in The Crown (now a Whetherspoons) for 1 shilling (5p) with an egg. They covered a distance of six miles before catching the train to Euston at 19:26.

Ten of us (& a dog) assembled at the White Horse public house in Bourne End leaving some of our vehicles there before we drove a couple of miles to park the cars adjacent to Thomas Coram School on Swing Gate Lane in Berkhamsted (GR 997 069 Expl 181).

As we walked across the first field before the lane crosses the A41 we stopped to examine a photo taken from this spot on the 11th December 2005. We could still identify the trees in the foreground with the huge plume of smoke rising to 10,000ft. We were looking in the direction of the Buncefield fuel depot which is on the outskirts of Hemel close to the M1. The photo taken some hours after the explosion.

From this point we walked down the lane to Bottom Farm on the floor of the Hertfordshire Bourne valley, where we examined water filled Swallow Hole at Bottom Farm. An early myth suggested the bourne flowed every seven years or at times of war or plague! However, the records compiled by Evans, Hopkinson and others indicated more frequent flow at less regular intervals. Whenever rainfall in the previous calendar year exceeded 32 inches (813mm), flow typically occurred for a period between January and June.

Flow through the Hertfordshire Bourne is complex and intermittent – ideals have evolved over time.

- Evans 1878 suggested minor changes in the valley floor above an inclined water table
- Glennie 1961 proposed two independent ground water systems at White Hill feeding (Corner Spring) up valley from White Hill Lane and, Mounts Hill where Mounts Rise feeds the system down stream of White Hill Lane
- Perhaps the geology plays a role! Much of the hillsides are Lewis Nodular Chalk above the New Pit & Holywell Chalk. The Chalk Rock (Hard Ground) and Marls within represent discontinuity barriers to water flow and impact on where spring lines may occur. The Devensian gravels in the lower reaches play an important role for shallow subsurface flow.

However, various parts of the valley were occupied by the surface stream in different years or even the same year. Very often flow starts at a series of springs just above White Hill (GR 991052), and sometimes a small lake accumulates here beside the road, but at other times it has started a short distance downstream below Mounts Hill. Sometimes the flow terminates in a swallow hole just upstream from Bottom Farm (this was to be the case in

2020), but more often it flows through the garden of Bottom Farm and across the meadow to the east, then terminating either in a large gravel pit (GR 005061), which acts as another swallow hole or, when this overflows, the stream can extend through a culvert under the new A.41 to the appropriately named hamlet of Bourne End, where the bourne joins the River Bulbourne. This was the case in 2014 when continuous flow as observed from Corner Spring to the confluence with the River Bulbourne, about 7km in length.

On our visit, the Swallow Hole near Bottom Farm was almost full of water and a series of sticks inserted at the pool perimeter on successive days demonstrated it was still rising about 4-6 inches every two of days [Fig. 5]. We then walked through the pastoral field below the farm to the 'gravel pit', several feet deep – again filling up [Fig. 6]. The 'gravel pit' had been a source of gravel hard core for the A41 construction in 1991 and subsequently backfilled with chalk from road cuttings. This 'made ground' has had an impact of gravel hard core for the A41 construction in 1991 and subsequently backfilled with chalk from road cuttings. This 'made ground' has had an impact on the hydrodynamic system. It still acts as a swallow hole. The dry course of the bourne could be traced across the meadow into the 'quarry pit', but not in the arable field downstream beyond. The water levels in the swallow hole and 'gravel pit' therefore indicated the temporary level of the water table beneath the valley floor, and flow over the surface occurs only when the water table rises above the level of the channel in any stretch of the valley.



Fig.5: Sticks marking rise of water. Fig. 6: 'Gravel pit' [Photos: Lesley Exton]

We made our way down along a farm road past Lower Farm and stopped at Vale Farm where a ribbon of standing water could be seen within the stream channel. The culvert under the A41 was dry and there was a little standing water in the in a culvert near the new housing backing onto the Bourne End industrial estate. We saw real stream flow of the Hertfordshire Bourne in the channel adjacent to the garden of the White Horse public house garden under the A 4251 and through a circular culvert flowing into a mill leat which feeds into the River Bulbourne.

Interestingly the water temperatures of the two swallow holes were a degree

or so lower than the flowing water temperature of the Hertfordshire Bourne. This is consistent with Glennie's observation of spring water temperature being c. 9.3 deg C.

It started to rain towards the end of our two-hour amble which finished with a roast dinner in the White Horse. A week later such meetings were not possible as the march of coronavirus across Europe gathered pace and severity.

Postscript: The water was still rising and was in full flow from Mounts Rise to the Bottom Farm on 24th March and flow continued into the garden of the Bottom Farm on the 30th March 2020 (Figs.7 & 8) Flow started to recede on the 13th April and by the 22nd April was no longer flowing beyond the Swallow Hole at Bottom Farm into the adjacent gardens. Nick has also done a write-up for the Hertfordshire Natural History Society, 'Stream flow in the Bourne Gutter, Spring 2020', published in Trans. Hert. Nat. His. Soc. (2020) 52 (1) 73-75.



Fig 7: Bottom Farm with swallow hole in the foreground [Photo: Nick Pierpoint]

Hertfordshire RIGS Group update

By Haydon Bailey

Hill End, as of Spring this year all the signage and information boards are in place. Haydon has produced a questionnaire for people who visit the site. He has started to get questionnaires back. He has also produced a little handbook of fossils from Hill End, so visitors can see what they can find. One of the recent visitors was the editor of the Old Boys Hertfordshire Grammar School Magazine, he was interested in the mention of the 3 schoolboys from the school and is going to do a write-up for the school magazine. It is important to keep the site cleared up as there is a steady stream of visitors. Haydon is to write up something about Hill End for the GA (concentrating on geology and the people) and Earth Heritage.

The only in-situ Puddingstone site, Radlett, on private ground so must have permission to visit, no collecting. We had another enquiry about an adjacent field, where you could pick up lumps of Puddingstone, but which had been taken off the RIGS list. This was the third enquiry, now going to build 180

houses there. The company are going to make a lot of money so Haydon has suggested as part of the deal (1) HGS is allowed to take a JCB onto the in-situ Puddingstone site to clean the site up (2) HGS has first refusal on any Puddingstone found when the field is dug (3) HGS are allowed access to the in-situ Puddingstone site at least once a year for conservation and one field trip. Aim is to get better access to the only known in-situ Puddingstone site (except for Chris Green's, which is also on private land). Haydon has no idea of timescale, but development will start within 12 months.

Castle Hill site, Nick has cleaned with bucket of water and secateurs. Little Heath site see write-up and Figs. 3 & 4.

Adrian Champion (1951 – 2020)

Haydon Bailey & Nick Pierpoint

Quietly spoken, modest and forever with a pleasant smile is how many friends and colleagues will remember Adrian Champion. He was simply a pleasure to be with, even at committee meetings when just a single incisive suggestion would come in like a curve ball from a totally unexpected direction.

Adrian was born on Christmas Eve 1951 and grew up in Hertfordshire, mainly around Harpenden. Following his initial education at Morton End Primary School, Adrian progressed to St. Albans School, situated next door to the Abbey. In the summer of 1970, when it came to selecting a university course Adrian was keen to study a subject which allowed him to get outside, so geology at Sheffield University fitted the bill.



Arriving at Sheffield in autumn 1970 one of the first fellow students Adrian met was Haydon who also happened to have started on the same Honours Geology degree course. The then Head of Department at Sheffield, Professor Leslie Moore, presided over a growing department, training geology graduates for the rapidly developing North Sea oil and gas industry. This resulted, during the 1972-73 academic year, in the establishment of the largest third year cohort that the department had ever seen – some 42 final year students. It was also

whilst at Sheffield, in 1972, that Adrian met his future wife Helen. After graduating in 1973 Adrian entered the world of chartered accountancy with a London firm, and he and Helen were married in 1975.

Adrian's background in geosciences wasn't to be lost forever, as in 1978 he joined BP and an overseas career began with assignments ranging from Oslo to Rio de Janeiro, immersed in the commercial world as a Finance and Administration Manager for the next few years. In 1980 Adrian and Helen welcomed their daughter, Jenn, into their world.

Adrian and family were back in London in 1984 where their son Rob was born, and the Champion clan next moved to San Francisco in 1985. Adrian's work included auditing costs of Alaskan North Slope oil activities and he made regular visits to the region. Increasing developments in the north and the commitment of BP to see major production from the region resulted in the family being posted to Anchorage in 1987. There they encountered and were able to experience a pristine wilderness, in addition to several moderate earthquakes!

In 1989, during one of the regular downturns in the oil industry, the Champion family returned to London and Adrian became the manager leading BP's Financial Control organisation for Asia, as well as the newly emerging states of the Former Soviet Union. Life was never dull and the merger of BP and Amoco during 1998 led to a job in International Supply and Trading; however eight years later, when the BP London office was moved to Canary Wharf, Adrian decided to volunteer for early retirement after 28 years with the company.

Adrian was a great believer in lifelong learning, not just for himself, so after retiring from BP in 2006 he set up his own consultancy company and undertook several projects for his old firm as well as other emerging energy companies. At this time, his financial expertise became the core of a training simulation entitled EpexWorld. This group provided courses for Early to Mid-Career professionals in the Energy industry and Academia (Warwick Business School) training them to operate within successful commercial enterprises.

Retirement also rekindled Adrian's original interest in the geosciences and having settled back in Hertfordshire he searched online to locate the nearest geological society. He discovered the HGS, then under the chairmanship of a long-lost Sheffield colleague Haydon and decided that the coincidence should not be missed. He and Helen joined the society at the first opportunity and became very active members, going on numerous field trips, helping with various geoconservation projects and getting increasingly involved in the group's activities, particularly at the Festival of Geology.

Adrian was always happy to provide support to those planning events, and we valued his quick thinking if things did not go to plan. He had a natural instinct

to seek out places to eat which had style and good value, which was always done with humour and charm.

In 2013 he became Vice-Chairman of the HGS, the same year that he and Helen decided to join the Geologists' Association (GA).

Adrian would never lose his managerial abilities, including his keen attention to financial detail and governance. He was soon invited to join the Council of the GA and in 2018 he took on the responsibility for governance on behalf of the GA Council. In a short period of time he made a significant impact and was ever alert to ensure the GA remained compliant with the Charity Commission. Not always an easy task but necessary. Adrian continued in this role up to his untimely death in May 2020.

Another retirement interest for Adrian was Bletchley Park where he became a popular volunteer guide and was pleased to be there in 2011 on the day the Queen visited to unveil the memorial to the iconic code breaker Alan Turing.

Adrian is deeply missed by all his family, friends and colleagues who now find a gap in their lives that was filled previously by a friendly smiling face that hid a keen, incisive mind, which was always valued and will never be forgotten. He is survived by his wife of 45 years, Helen, together with their children Jenn and Rob.

Chairman's concluding remarks

By Haydon Bailey

2020 vision is great in hindsight! Had we but known what this year was to bring just twelve months ago things might have been a little different. It all got off to a good start with lectures continuing as normal from January through until March and looking back to March we had such a fantastic summary of the GA trip to Morocco from Adrian. Unfortunately, this was to be his swan song as he passed away just a few weeks later. Our sincerest condolences go to Helen and all the Champion family as Adrian is sorely missed on so many levels. We've included his Obituary published in the GA magazine in this newsletter as we consider it very worthy of repetition. He did so much both for the HGS and for the GA, although much of this was unacknowledged and carried out behind the scenes. I'm sure I speak for all of us when I say that we miss him.

March 2020 and in came the first Covid-19 lockdown. Consequently, everything came to a shuddering halt. We had never been in this situation before and we were left wondering what direction we should head in. Certainly not into the field on geological field trips – too many people in the same place at the same time, so this would definitely be against government guidelines. What to do about lectures? Initially, they were all cancelled or at least postponed.

To begin with we were very unsure what would happen and then came Zoom! It had already been available since 2013, but now it became part of the common language. Where we had struggled previously with mass communication, now we had a simple bit of software which gave us the opportunity to hold committee meetings and lectures in the comfort of our own homes. This was by no means the same as meeting up in person and having the opportunity of face to face chats, book sales and the simple pleasure of each other's company, but we could re-start our meetings, even if at a distance.

From September Zoom lecture meetings commenced, first with Richard Twitchett (NHM) describing mass extinctions (the latter very appropriate given the pandemic) and shark tooth research. This was a first, both for us and for Richard. Lucia Perez Diaz (Univ. of Oxford) followed in October with her story of oceanic plate movements. Some prospective speakers chose not to use online presentations, which is a position we can sympathise with as there is nothing quite like a live audience, nevertheless our programme evolved. Jonathan Paul (RHUL) joined us in November with his planned talk on the impact of stratigraphy and structure on the London Underground and Malcolm Hart (Univ. of Plymouth) stood in at short notice in December with a talk on Jurassic calamari as a replacement for Chris Jackson (Imperial College, London) who had been kidnapped from us by the Royal Institution for the annual BBC Christmas lecture. Chris has been rescheduled for February.

Next year's programme is well in hand with Zoom lectures, as required, and a return to live, face to face meetings as early as possible. Field meetings will be put in place when we are able to meet in reasonable numbers and conservation trips to Little Heath, Hill End and Barkway will also return.

Finally, as the HGS contribution to the virtual Festival of Geology we now have five films available on YouTube featuring the geology of Barkway, Berkhamsted, the Bourne Gutter, Hill End and Little Heath. My thanks to Clive, Janet and Nick for making all these possible, apparently with such ease.

I'm really looking forward to 2021 and a time when we can all meet again and share our love of all things geological. Stay safe and keep well.

Reduced subscription rates for 2021

The committee have agreed to a one-off discount of 50% on subscription rates for 2021 due to a reduction in costs during 2020 due to the Covid-19 crisis and the uncertainty of when we will be able to offer either field trips or face-to-face meetings again.

The reduced subscription rates for 2021 will be: Ordinary member £12; pensioner £10; Joint/Family membership £16; Student £5. However, donations are welcome.

Please pay electronically if you can. Please contact the treasurer for the bank details hgstreasurer@btinternet.com.

Please put your name in the 'Reference' field. And an email informing hgstreasurer@btinternet.com would be much appreciated.

Alternatively, post a cheque payable to 'Herts Geological Society' to HGS Treasurer, 2 The Priory, Rectory Lane, Stevenage SG1 4BX

Talks programme 2021

Evening meetings are held on the second Thursday of the month (except August when there will be no meeting and October when it will be the first Thursday as otherwise it would be too close to the GA Conference). At the moment we expect we will be using Zoom to host meetings through to at least the Summer. A reminder is sent out to members a few days before each meeting with the link. If the speaker gives consent to recording, this is made available to members afterwards.

If anyone would like help in setting up or using Zoom please contact Janet Wright via hgs_trips@btinternet.com (NB: hgs_trips) It is also possible to listen into a Zoom lecture via a phone, please contact Janet if you would like to know how to do this.

It will then depend on the situation and any Government guidelines in place whether we can consider restarting face-to-face meetings at Oaklands College in the second half of the year. We may have to juggle talks around in the second half of the year if still using Zoom.

Any last-minute changes to the programme will be posted on the website.
<http://www.hertsgeolsoc.ology.org.uk>

14th January	Dr Susanne Schwenzer, Open University 7:30 pm Zoom, <i>The geology of Mars, and the rover missions</i>
11th February	Prof. Chris Jackson, Imperial College, London 7:30 pm, Zoom, <i>Jungle volcano</i> [Rearranged from 10 th December 2020]
11th March	Annual General Meeting followed by a short talk. 7:30 pm Zoom, The AGM will be followed by a talk by Haydon Bailey on the <i>History of Micropalaeontology, a science promoted by conflict.</i>
8th April	Percy Evans Lecture & Presidential Address: Linda Hamling

	7.30 pm, <i>In search of Burtonite in Norway</i> . Zoom
13th May	Dr Peter Wigley Consultant Lynx Information Systems & co-author of <i>Strata</i> 7.30 pm, Zoom <i>Smith – marks on the landscape</i>
10th June	Dr Tony Waltham Engineering geologist and karst specialist 7:30 pm, <i>Civil engineering meets geology at the Panama Cana</i> [Rearranged from 9 th July 2020]
8th July	Mike Howgate, HGS 7:30 pm, <i>The Dinosaur - Bird link: A critical overview</i>
Saturday July/August TBC	Summer event: TBC <i>Chalk streams, a series of talks in the morning including a talk by Paul Jennings, Chess River Association, and a walk down the Chess, plus other talk streams</i>
9th September	Dr Mick Oates (Retired: BG) 7:30 pm, <i>Ammonites – mythology to the modern era</i>
7th October	Dr Colin Prosser, Principal Specialist Geoconservation, Natural England. 7:30 pm <i>Geoconservation – principles into practice</i> [Rearranged from 8 th October 2020]
11th November	Tony Doré (Retired: Equinor) 7:30 pm, <i>Geoscience, and the World After Oil</i>
9th December	Dr Bethan Davies, Royal Holloway, University of London 7:30 pm, <i>The last British Ice sheet</i>

Field trips

At present there are no proposed field trips or geoconservation working parties in the programme, although we do have all those postponed from last year and a few new ideas. If restrictions change during 2021 which make them possible, we will announce them at the monthly meeting, post details on the website and in the monthly e-newsletter that is being circulated to members. If you have not been receiving the e-newsletter please email hgs_secretary@btinternet.com (NB: hgs_secretary).