

# HOGG

**Newsletter of the History  
of Geology Group of the  
Geological Society  
of London**

The Woolhope Club presents

*Picnic in Siluria*



**Number 38  
February 2010**

### **Front cover**

The Woolhope Club's DVD *Picnic in Siluria* is reviewed on pp. 11-13 of this newsletter.

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### **Editorial subcommittee**

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**The HOGG newsletter will be issued in February (copy deadline 31<sup>st</sup> January), June (copy deadline 31<sup>st</sup> May) and October (copy deadline 30<sup>th</sup> September).**

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## LETTER FROM THE CHAIR

*'It was the best of times and the worst of times, it was the age of wisdom, it was the age of foolishness.....'*

Charles Dickens *A Tale of Two Cities* (1859)

I have recently returned from a meeting discussing the future of some STFC (Science Technology Facilities Council) funded projects and was made painfully aware of the funding restrictions about to engulf much of the research councils' work. The opening line of Dickens' novel sprang to mind as I walked back to the train station whilst reflecting on the day's events. Indeed, the prospects laid out before the panel members looked fairly bleak with claims of a lack of opportunity for scientists embarking upon their careers and proposed cuts of up to 25%. Whilst listening to the presentations on the impact of budget cuts on institutions and science programmes, I realised that here was history in the making. We have reached yet another 'tipping point', a defining moment where the 'doing of science' changes direction - forced by political, economic and sociological factors. This has happened many times in the past and it is often opportune to stop and look over the wider ramifications of such events and see whether such enforced changes have been for the good or ill of science. For instance, in very general terms, the post-Napoleonic slump with its corresponding impact upon social conditions also happened to be a time when great ideas were developed, nurtured and eventually changed the direction in which scientific enquiry was conducted with increasing professionalism. I have no reason to think that the same will not happen now, despite some alarmist comments to the contrary in the media. In many cases, such enforced rethinks have been the catalyst for new ideas, techniques and research opportunities. Where does the geo-historian fit into all of this?

The history of the Earth sciences is a history of personalities, political manoeuvrings, social class, exploration, exploitation and above all, particularly in the 20th century, economic factors. There are the great names, such as William Smith, Richard Owen and Charles Lyell amongst a legion of others, right up to our own time. Yet each was a personality working within the constraints of the age in which they lived. In the latter part of the 20th century, we have seen controversy such as the Alvarez Impact Theory of the K/T boundary event (Luis W. Alvarez, a Nobel Prize-winning physicist, and his son Walter, a geologist) and the effect this has had on the development of extinction-related research and reputations, where opinions became highly polarised. Another physicist, Sir Fred Hoyle, announced with colleagues that the Natural History Museum's *Archaeopteryx* was a hoax - a fraud perpetrated by Owen in order to discredit Darwin. Hoyle's public announcement and conspiracy theory made palaeontologists look at the specimens more closely in order to disprove him. Hoyle's announcement may even have had an unforeseen knock-on effect in that it made the research of avian and non-avian dinosaurs more prominent, particularly in the light of the discoveries coming out of China during the last two decades. Perhaps we can coin a new term, the Hoyle Effect, as he managed to induce a similar reaction with his announcement of the 'Big Bang', to identify an alternative theory to the so-called 'Steady State Universe' where the Universe had a well defined beginning. More recently, we have been made aware of the climate change/global warming debates and the 'revelations' concerning selective use of data, particularly as this has now become a highly politicised issue.

Today, in an era of collaborative projects, 'big science' and ever increasing competition for grants, the same personality, social, political and economic factors still apply. It is by studying the history of the Earth Sciences that we are able to provide a fresh perspective upon such debates and challenges. Not all political or society-induced change is bad and may indeed be necessary in order to provide a fresh impetus and direction.

Finally on other matters: The HOGG committee has been busy putting together the programme for the next couple of years and one significant item looming on the horizon is the INHIGEO (International Commission for the History of Geosciences) meeting in Manchester in 2013. This is to be run jointly with the ICHST (International Congress of History of Science and Technology) meeting and should prove to be an exciting event. The symposium theme is to be *Geology in Art and Literature* which will allow plenty of scope for attracting a good range of speakers and a varied audience. The HOGG committee has been invited to contribute in developing this symposium along with the UK INHIGEO members.

In November, we will be having our AGM during the Applied Geology meeting and it will be time to elect new members to the Committee. So if anyone feels like taking a proactive role within HOGG now is the time to consider whether you wish to stand for a Committee seat. HOGG is what we make of it and I am sure there must be many of you who wish to assist in driving the group forward.

Finally, since this is the first newsletter of 2010, may I wish a very belated Happy New Year to everyone.

Alan J. Bowden  
February 2010

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## HOGG COMMITTEE

**Chairman** Alan Bowden **Vice Chairman** Dick Moody **Secretary** Leucha Veneer  
**Treasurer** Beris Cox **Ordinary members** Tony Brook, David Earle, Nina Morgan, Martin Rudwick, Bob Symes, Hugh Torrens.

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## HOGG SUBSCRIPTIONS 2010

This year's subscriptions were due at the beginning of January. Please send cheques (payable to HOGG) for £15 to the Treasurer (Dr B M Cox, 151 Browns Lane, Stanton-on-the-Wolds, Keyworth, Nottingham NG12 5BN). Overseas members are invited to pay their subscriptions using PayPal.

Some members have still not upgraded their standing orders from £10 (the subscription has been £15 since January 2008) and they are asked to respond to the recent mailing from the Treasurer, and certainly to amend their standing orders before next year.

## BACK ISSUES OF HOGG NEWSLETTER

Joan Hardy is offering a complete back run of HOGG newsletters to anyone who would like them. In the first instance, please contact Beris Cox (e mail beris.cox@btinternet.com). (NB The Geological Society Library already has a set.)

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### HOGG AGM 2009

*The reports of the Secretary and Treasurer which were presented at the AGM held on Wednesday 18<sup>th</sup> November 2009 at Burlington House are reproduced here for the benefit of those members who did not attend.*

#### *Secretary's Report*

After the last AGM where we welcomed three new members to the Committee (Tony Brook, Bob Symes and Martin Rudwick) HOGG has had another good year, with several interesting and well-attended meetings. These have included an Open Meeting, at Burlington House, in April, which saw an interesting range of papers including a small thematic set on twentieth century military geology. Today's conference, on *Military Hydrogeology*, is also going well, and in this year of Darwin's anniversary, Martin Rudwick and Adrian Palmer led a field trip to retrace Darwin's work in Glen Roy. This was a very successful trip with many HOGG members present.

The committee continues to plan meetings for the future, including a meeting on the work of provincial geological societies to be held in Manchester next April.

The Group's excellent publication record continues. *The Making of the Geological Society of London* book from the bicentenary meeting was published in September, and last year's *Dinosaurs and other extinct saurians* conference will also produce a volume of great interest not only to HOGG members but which will also cater to a wider readership. The committee is also considering a more popular series of publications.

There are no changes to the committee this year, but I would like to thank our current committee members for contributing so much to HOGG over the past year. Next year there will be fresh elections to the Committee and now is the time to begin considering putting yourself forward for consideration if you wish to take a pro-active role in running the Group.

Leucha Veneer  
November 2009

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## ***Treasurer's Report***

*Summary statement of accounts for period 01/01/09 – 06/11/09 (prepared for AGM on 18/11/09)*

Opening Balance 01/01/09	£7351.25		
<u>Income</u>		<u>Expenditure</u>	
Subscriptions <sup>1</sup>	1739.00	Newsletters <sup>3</sup>	301.64
Open Meeting (April)	675.00	Committee expenses <sup>4</sup>	1127.44
Glen Roy Field Trip (June) surplus	157.36	Open Meeting (April)	565.88
Military Hydro. Meeting (Nov.) <sup>2</sup>	714.00	Stationery <sup>5</sup>	45.50
Co-operative a/c interest	0.95	Publishing House <sup>6</sup>	3323.00
		PayPal costs	7.80
		Co-op a/c returned cheque	6.00
			<u>£5377.26</u>
		Closing balance 06/11/09	£5260.30
			<u>£10637.56</u>
<b>Total</b>	<u>£10637.56</u>	<b>Total</b>	<u>£10637.56</u>

<sup>1</sup>includes some 2008 late payments and 2010 early payments

<sup>2</sup> advance registration fees and sponsorship for meeting on 18/11/09

<sup>3</sup> printing and postage for newsletters 35, 36 and 37

<sup>4</sup> travel to HOGG committee meetings (4), representative to Science Committee meetings (3), chairman to President's Day; leaving gift

<sup>5</sup> stock of envelopes for newsletters

<sup>6</sup> Geol.Soc.Special Publ. 317 book subscriptions (incl. £1430.96 ring-fenced) and colour plate contribution (£1160.00)

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The HOGG finances are managed through three bank accounts – Alliance & Leicester Commercial Bank current account (mainly for subscriptions), Co-operative Bank Community Directplus account (mainly for meeting revenues) and PayPal Business account (mainly for overseas payments).

Annual subscriptions have been £15 since January 2008. It would assist the Treasurer and the well-being of HOGG if those members who have not yet upgraded their existing standing orders would do so, and those who pay by cheque would do so promptly in January each year (due 1<sup>st</sup> January).

The only 'irregular' payment this year has been to the Publishing House which was only partly anticipated. However, whilst subscription income continues to cover everyday running costs, HOGG finances are considered to be satisfactory.

Beris M Cox  
9th November 2009

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## MILITARY HYDROGEOLOGY: PAST AND PRESENT

*A report on the HOGG meeting held at Burlington House in November 2009*

**David Earle**

The final HOGG meeting of 2009, *Military Uses of Hydrogeology: Past and Present*, was held at the Geological Society on 18th November. The meeting was convened jointly by the History of Geology Group (HOGG) and the Hydrogeology Group of the Geological Society together with the Institution of Royal Engineers. There were fifty registrants for the one-day meeting, convened by John Mather and Ted Rose, at which a dozen papers were read. The presentations were equally divided between historical aspects of military hydrogeology and consideration of contemporary issues.

The historical papers dealt with hydrogeology as a military concern in World Wars I and II from British, German and American perspectives. **Ted Rose** opened with “Groundwater as a military resource”. He described the work of Lieutenant W B R King in World War I and how the requirements for potable water for 1.5 million men and 0.5 million pack animals were met. Well-drilling expertise was demobilised at war’s end and then reinstated in World War II guided, again, by Major King and by Captain F W Shotton. **Peter Doyle** considered groundwater in its other context, as a military engineering obstacle to First World War mining operations on the Western Front. **Hermann Hausler** of the University of Vienna considered the importance of hydrogeology to the German army in World Wars I and II. He made the point that in former conflicts disease as a result of poor hygiene and polluted drinking water accounted for greater losses than direct combat. This situation only began to change after the Franco-Prussian War of 1870-71. A distinction was made between the water supply requirements for static and mobile warfare.

**John Mather** described groundwater work from 1939-45 by the Geological Survey and its significance for the development of hydrogeology in Britain. The war triggered the systematic collection of quantitative groundwater data and led to the professionalisation of the Survey’s hydrogeological work. **David Greenwood** of the Kirkaldy Society spoke on research by the British Army’s “Mud Committee” (the Committee on Mud-Crossing Performance of Tracked Armoured Fighting Vehicles), the production of “trafficability” maps and the development of a classification of soils for military purposes. The final paper of the historical presentations was given by **Christopher Gellasch** of the Department of Geoscience, University of Wisconsin- Madison, who spoke on “Hydrogeology and US military operations during the past 100 years” which provided a transition from consideration of the First and Second World Wars, through Vietnam and the Gulf War to current operations in Iraq and Afghanistan.

The theme of British hydrogeological support in Afghanistan was taken up by **Robert Dow** and **Bernard Whishaw** of the Royal Engineers in the first of the papers in the contemporary section of the meeting. Water supply for operations in Helmand Province was described as well as the difficulties of weaning military personnel from the insistence on bottled water. **Hermann Hausler** presented a paper on behalf of **Dierk Willig** of the Bundeswehr Geoinformation Office on “Hydrogeology and the Bundeswehr: German armed forces’ support to UN and NATO groundwater operations, from Somalia to Afghanistan”. The logistical problems of transporting drilling systems to an operational theatre were

covered and also discussed by other contributors. The importance of civilian water supply as a peace-keeping contribution was also mentioned.

**Fred Ogden** from the University of Wyoming dealt with current US Army research on hydrological modelling as a tool for military, environmental management, water supply and flood control purposes. **Stacy Howington** and **John Peters** of the US Army Engineering Research and Development Centre, Vicksburg, spoke on the influence of near-surface hydrogeology in the detection of landmines and other targets by infrared sensing. **Lewis McCaffrey** described the hydrogeology of Ministry of Defence sites in the UK and the transfer of responsibility for water supply and waste water removal to private companies. The final paper of the day was given by **Majdi Mansour** of the BGS and described the problem of an equitable allocation of groundwater resources between Palestine and Israel and the tensions this gives rise to.

It is understood that papers from this successful meeting will be published in a special volume.

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## **FUTURE HOGG EVENTS**

- \* **GEOLOGY IN THE HISTORY OF PROVINCIAL SCIENTIFIC SOCIETIES**  
**FRIDAY 9th APRIL 2010 (this is the weekend after Easter)**  
**The Williamson Building, University of Manchester, Oxford Road, Manchester**  
Programme and registration form in this newsletter (pp.7 and 23).
  
  - \* **BEHIND THE SCENES AT THE MUSEUM**  
**SUNDAY 9th MAY 2010**  
**OXFORD UNIVERSITY MUSEUM OF NATURAL HISTORY**  
Details on p.8 of this newsletter.
  
  - \* **HISTORY OF APPLIED GEOLOGY**  
**16th – 17th NOVEMBER 2010**  
**Burlington House, Piccadilly, London**  
**(including HOGG AGM)**  
Call for papers in this newsletter (p. 9).
  
  - \* **GEOLOGICAL COLLECTIONS**  
**April 2011**  
A two-day meeting on geological collections: maps, books, fossils and minerals with talks, exhibitions and trade stands is planned for April 2011.
  
  - \* **GEOLOGY AND MEDICINE**  
**November 2011 (including AGM)**
  
  - \* **METALLIFEROUS MINING IN THE SOUTH-WEST AND ITS LEGACY**  
**2012**
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**GEOLOGY IN THE HISTORY OF PROVINCIAL SCIENTIFIC  
SOCIETIES  
FRIDAY 9th APRIL 2010  
WILLIAMSON BUILDING, UNIVERSITY OF MANCHESTER,  
OXFORD ROAD, MANCHESTER, M13 9PL**

**PROGRAMME**

**9.30 - 10.00 Coffee and registration**

10.00 – 10.30 Short welcome from Alan Bowden followed by  
John POLLARD *The contributions of Edward Binney FRS FGS, the geologist, to  
the Manchester scientific scene and societies 1836-1881*

10.30 – 11.00 Geoff TRESISE *Liverpool: a tale of two societies 1860-1910*

**11.00 – 11.15 Comfort break**

11.15 - 12.00 Simon KNELL Keynote Address

**12.00 – 13.00 Lunch**

13.00 – 13.30 Ronald AUSTIN *Geology in the history of scientific societies in Swansea, South  
Wales*

13.30 – 14.00 Noel WORLEY *The Yorkshire Geological Society: its history and contribution  
to geological science*

14.00 – 14.30 Patrick BOYLAN *Geology and the Leicester Lit. & Phil., 1835-2010*

14.30 – 14.55 THE WOOLHOPE CLUB'S DVD *Picnic in Siluria*

14.55 - 15.30 Hugh TORRENS *A forgotten English museological initiative: the Midland counties  
natural history societies and museums of the 1830s*

**15.30 – 16.00 Tea**

16.00 – 16.30 Norman BUTCHER *The Devonshire Association - a unique organisation*

16.30 – 17.00 Simon NAYLOR *The Royal Geological Society of Cornwall and the mapping of  
Cornwall's geology*

17.00 - 17.30 Cynthia BUREK *Geology in the Chester Society of Natural History*

17.30 – 18.00 Stephen DONOVAN *Lawrence Chubb, Verners Zans and the Jamaica Group of  
the Geologists' Association (1955-1959)*

**18.00 Close**

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**\*REGISTRATION FORM AT THE BACK OF THIS NEWSLETTER\***  
The registration fee for this meeting is being capped at £5 (advance bookings only).

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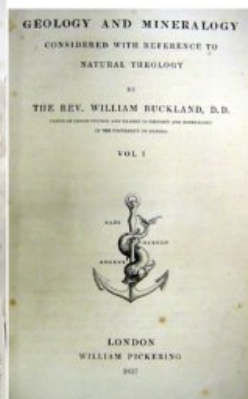
**BEHIND THE SCENES AT THE MUSEUM  
OXFORD UNIVERSITY MUSEUM OF NATURAL HISTORY  
SUNDAY 9TH MAY 2010**

*A rare opportunity to visit the historical archives behind the scenes at the Oxford University Museum of Natural History (OUMNH).*

The Museum is home to some of the largest collections of maps, letters, diaries and other material related to important 19th century geologists including William Smith, John Phillips and William Buckland. The material that will be on show is rarely displayed to the public.



*Cost and Booking:* A minimum of five is needed for this visit to go ahead but, for space reasons, numbers will be limited to 10. The visit is free to HOGG members; £15 to all others, to include a year's membership of HOGG. (NB It is not necessary to be a Fellow of the Geol. Soc. to be a member of HOGG).



For more information or to register for the visit, e-mail Nina Morgan ([ninamorgan@lineone.net](mailto:ninamorgan@lineone.net)).



# HISTORY OF GEOLOGY GROUP



## ENGINEERING GROUP

# THE HISTORY OF APPLIED GEOLOGY

## International Conference and Fieldtrips

General Information

**Conference Dates: 16th-17th November 2010**

**Conference Venue: Geological Society, Burlington House, Piccadilly, London W1J 0BG**

*Nearest underground stations are Piccadilly Circus (Bakerloo and Piccadilly lines) and Green Park (Jubilee and Victoria Lines). Burlington House is also home to the Royal Academy.*

### CONFERENCE ORGANISERS

Richard T. J. Moody  
David Earle  
Helen Reeves

### CALL FOR PAPERS

Title and abstract (up to 500 words) to be submitted by 6th May 2010

**Conference Registration at Burlington House. 8.30-10.00: Coffee. Conference Fee £20.00**

**16th November 2010** Conference Dinner at Getti, Jermyn Street 19.30

**For further information, please contact Richard Moody, David Earle or Helen Reeves**

rtj.moody@virgin.net daearle@btinternet.com hjre@bgs.ac.uk

## GEOLOGICAL SOCIETY OF LONDON (GSL) LIBRARY

The new GSL Library Review Group met for the first time early in February under the chairmanship of former GSL President Peter Styles. It is tasked with deciding how and if the Library should save money and/or space. The first main recommendation is that, from now on, use of the Library should be better monitored so that more accurate information about its use is available; this will put more of a burden on Library staff. The Group has to report its conclusions by the middle of 2010, so any users of the GSL Library and its remarkable resources who have particular concerns about these matters should notify them to Hugh Torrens, William Smith Building, Earth Sciences and Geography, University of Keele, Staffs ST5 5BG or e mail [gga10@keele.ac.uk](mailto:gga10@keele.ac.uk)

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### From the Geological Society's Newsletter and Website:



#### Charles Darwin: A Genius in the Heart of London Project Display

The Geological Society has been participating in the heritage lottery-funded project '*Charles Darwin: A Genius in the Heart of London*' in collaboration with a number of other organisations based in Westminster. The project aims to raise awareness of Charles Darwin's association with these groups and the many facets of his life and works which linked him to London.

As part of this project, the Society will be hosting a display of information produced by the organisations about Darwin's work, along with a selection of memorabilia relating to his life and works. The display will be at the Society throughout March, and can be viewed on Tuesday, Wednesday and Thursday afternoons by booking in advance by calling 020 432 0954 or e mail Sarah Day ([sarah.day@geolsoc.org.uk](mailto:sarah.day@geolsoc.org.uk))

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## LOST BOOKS

*Our regular feature highlighting books or papers known to have been printed but of which no copy apparently remains. Please provide feedback or items for inclusion to Hugh Torrens (e mail: [gga10@keele.ac.uk](mailto:gga10@keele.ac.uk)).*

### No. 4

Elsewhere in the last newsletter, information was sought on Edward Charlesworth (1813-1893), Crag pioneer, museum curator (York 1844-1858; Saffron Walden 1880-1893) and natural history dealer. Google Book Search yielded two ephemeral items by Charlesworth which have yet to be located:

1) *Legally violated: a true and terrible story*

Author: Edward Charlesworth Publisher: s. n. 1885 7pp.

- 2) *Extract from a letter addressed to the Committee of the Museum at Derby*  
Author: Edward Charlesworth 1860 2pp.

Also sought is the printed *Letter from Edward Charlesworth to W J Hamilton*, London 1865. A copy of this letter was once held by the library of the Geological Society (of which Hamilton was then President) but has since been discarded.

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## **PICNIC IN SILURIA** a DVD produced by the Woolhope Club

**Review by Beris Cox**

The Woolhope Club was founded (as the Woolhope Naturalists' Field Club) in 1851, a time when geology and the collecting of fossils were very much the local pastime of the landed gentry. So it is that we are introduced to the Club and some of its gentlemen founder-members. We then join them on an early field trip to an area of Silurian rocks near Aymestrey (often misspelt Aymestry) in north Herefordshire.



Guests of honour are Sir Roderick Murchison (one of the founder members of the Club and leader for the day) and his wife Lady Murchison (notably played by Hugh and Shirley Torrens). Others present include Sir Charles Lyell (recently returned from North America), the Rev. Thomas Taylor Lewis (curate at Aymestrey Church, botanist and local geologist who helped Murchison in his Silurian research and mapping), Sir Charles Hastings (from Worcester where the natural history society, founded 1833, was the role model for all other counties), and the lawyer Richard Banks Jnr of Ridgebourne

near Kington (President of the Club) whose family had sponsored Murchison's book *The Silurian System* (1839). After a gentle journey by steam train from Hereford and transfer to horse-drawn traps, the party starts proceedings with a sumptuous breakfast hosted by Richard Banks, at the Crown Inn, Aymestrey. Murchison makes a speech of welcome and refers, with the merest hint of modesty, to his work on the Silurian, and letting it be known that in certain quarters he had been christened the 'King of Siluria'. Incidentally, the ladies of the party ate in a separate room lest they 'faint at receiving such an intellectual discourse'!

With the gentlemen of the party dressed in top hats and dress coats, the party, led by Murchison, then set off to look at the geology of Croft Ambrey and to collect fossils. On reaching a suitable viewpoint, Richard Banks (President) welcomes Murchison as the new Director of the Geological Survey to which Murchison responds with another short discourse rather boastfully parading his contribution to Silurian geology and showing the party a simpler, more up-to-date, and 'cheap' (30 shillings) version of *The Silurian System* called *Siluria* (1854). This is followed by a relaxing picnic with views looking across the Silurian landscape to the north. The last stop of the day is at Aymestrey Church where the Rev. Thomas Taylor Lewis gives a vote of thanks to Sir Roderick and Lady Murchison, summarises their day in the north Herefordshire hills and speaks of 'analysing the works of

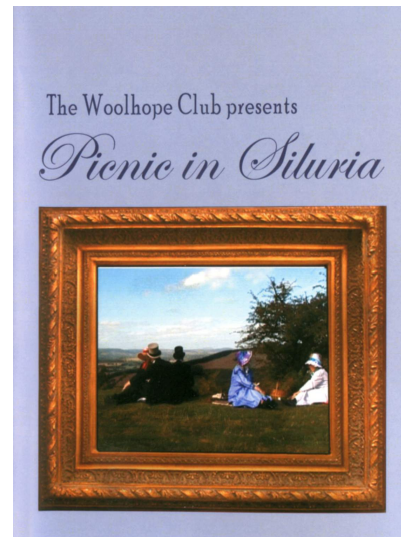
God's creation'. Finally he suggests that the party should remove themselves to a nearby hostelry to dine and so end the field trip.

Fast forward to the present day when we have Hugh Torrens and Paul Olver (current secretary of the Woolhope Club (Geology Section) who had taken the part of the Rev. Thomas Taylor Lewis) having abandoned their period costumes and now kitted out in modern field gear, standing in the working Leinthall Quarry and examining those same rocks and fossils as the Murchison party had some 150 years previously. Here, the opportunity is taken to explain the relative dating of rocks using fossils.

The DVD is the result of the call to celebrate the bicentenary of the Geological Society of London in 2007. Enthusiasts in the Welsh Marches decided that the Shropshire Geological Society would organise a symposium in Ludlow, and the Woolhope Club, in Herefordshire, would produce a DVD. Its subject matter stems from a talk given by Paul Olver (the DVD's producer) on the perambulations of the Club's early presidents. The project took six months to complete including two days of actual filming with members of the Woolhope and Shropshire clubs, together with friends, enthusiastically throwing themselves into their Victorian roles.

Paul Olver's own career has been in the world of education, firstly in schools and latterly in further and adult education. He was keen that the DVD would also be relevant to both the primary and secondary school curriculum because, as well as its geological content, it strongly reflects some elements of Victorian social history - for instance, not only were the sexes separated at breakfast but the 'ladies and gentlemen' were separated from the working classes who did most of the hammering.

My only significant quibble when I first viewed this DVD was over the dating of the action. For instance, in the introductory section, the narrator says the trip is taking place in the 1860s which would concur with his other comment that prior to the 1860s, transport to the field could only be undertaken by pony and trap because the railway did not arrive in this area until then. Then, a caption at the start of the trip states that the event is taking place in the late 1850s. When Richard Banks is making his speech of welcome to Murchison on the summit of Croft Ambrey, he refers to the Club being less than five years old (therefore a date not later than 1856) and that Murchison had just been appointed as Director of the Geological Survey (which occurred in 1855). Incidentally, the use of the title British Geological Survey at this point is incorrect. The narrator also describes Murchison's *Siluria* (1854) as 'hot-off-the press'. However, Murchison (far less imperious than I imagine him to have been!) refers to the party leaving the train at Kingsland (which is shown) and therefore the date cannot be before 1857, the line to Kingsland having opened in July of that year. All this left me rather confused. However, I have now been advised that the production was not intended to be a re-enactment of an actual field trip (in which case the date would be known precisely) but rather an attempt at a re-creation of a possible Club field trip of about the late 1850s; it was not therefore seeking real accuracy. The whole production was unscripted and without the professional 'continuity' input that otherwise might have ironed out such inconsistencies. If there are any of the more obvious potential anachronisms such



as vapour trails in the sky, modern quarries in the background, white vans in ditches, I didn't spot them.

Despite the confusion over dates, I found this DVD (copyright dated 2008) to be a delightful product of one group's shared enthusiasm for geology and history. With a running time of 25 minutes, it is selling to schools and colleges for £12.00 including p&p and is available from Dr Paul Olver, The Buttridge, Wellington Lane, Canon Pyon, Hereford, HR4 8NL; tel. 01432 761693; e mail: paulolver@hotmail.com

**NB** There will be a viewing of the DVD during HOGG's meeting on *Geology in the History of Provincial Scientific Societies* in Manchester on April 9th (see p.7 of this newsletter).

## REPEAT CALL FOR HELP

### THE INTERNATIONAL GEOLOGICAL CONGRESS LONDON 1888

For some years, David Oldroyd (Sydney, Australia), has been soliciting articles about past IGCs for the journal *Episodes*. In particular, he is asking HOGG members if there is anyone who would be interested in writing up the IGC held in London in 1888 which is currently a 'serious omission' from his list (see below). David can send examples of previous offerings if it would help. The list so far is:

No.	Date	Host country	City	Author	No.	Date	Host country	City	Author
1	1878	France	Paris	Ellenberger (1978)	20	1956	Mexico	Mexico City	Puche & Martinez (2009)
2	1883	Italy	Bologna	Vai (2004)	21	1960	Scandinavia	Copenhagen	Sørensen (2007)
3	1885	Germany	Berlin	----	22	1964	India	New Delhi	----
4	1888	UK	London	----	23	1968	Czechoslovakia	Prague	Schneer (1995)
5	1891	USA	Washington	Nelson (2006)	24	1972	Canada	Montreal	----
6	1894	Switzerland	Zurich	Franks & Trümpy (2005)	25	1976	Australia	Sydney	Cooper et al. (in prep.)
7	1897	Russia	St Petersburg	Milanovsky (2004)	26	1980	France	Paris	Gohau (2006)
8	1900	France	Paris	Puche et al. (2008)	27	1984	USSR	Moscow	Milanovsky (2004)
9	1903	Austria	Vienna	----	28	1989	USA	Washington	----
10	1906	Mexico	Mexico City	----	29	1992	Japan	Kyoto	----
11	1910	Sweden	Stockholm	Sundqvist & Nordlund (2004)	30	1996	China	Beijing	----
12	1913	Canada	Toronto	Middleton (2007)	31	2000	Brazil	Rio de Janeiro	----
13	1922	Belgium	Brussels	----	32	2004	Italy	Florence	----
14	1926	Spain	Madrid	Ayala-Carcedo et al. (2005)	33	2008	Norway	Oslo	----
15	1929	South Africa	Pretoria	----					
16	1933	USA	Washington	Nelson (2008)					
17	1937	USSR	Moscow	Milanovsky (2004)					
18	1948	UK	London	Trümpy (2004)					
19	1952	Algeria	Algiers	Durand-Delga (2005)					

**Enquiries to** Professor David Oldroyd  
e mail [doldroyd@bigpond.com](mailto:doldroyd@bigpond.com)  
or Hugh Torrens  
e mail [gga10@keele.ac.uk](mailto:gga10@keele.ac.uk)



## FUTURE MEETINGS OF OTHER BODIES

### UPLAND CAVE NETWORK

*Cave Archaeology - past, present and future*

**Thursday 1st – Friday 2nd July 2010, 10.00 (for 10.30) - 4.30pm**

**Manchester Museum**

The meeting will be held in the Kanaris Lecture Theatre at Manchester Museum from 10.30am to 4.30pm each day. The Kanaris Lecture Theatre is on the first floor of the Museum and lift access is available. Manchester Museum is ~ 15 minutes walk from Manchester Oxford Road train station, and there are direct trains from Manchester Airport to Manchester Oxford Road. Further directions on how to find the Museum can be found here at <http://www.museum.manchester.ac.uk/yourvisit/travel/>

There is no registration fee, and teas and coffees will be provided; however lunch is not included. There are a number of cafes in the Museum and local area where lunch can be purchased.

If you have any questions, feel free to e-mail or ring the organiser (Hannah O'Regan) e mail [uplandcaves@o2.co.uk](mailto:uplandcaves@o2.co.uk) tel. 0151 231 2180.

Further information on the Upland Caves Network can be found on the website: [www.uplandcavesnetwork.org](http://www.uplandcavesnetwork.org)

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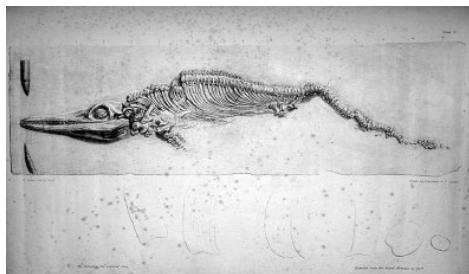
### GEOLOGICAL CURATORS' GROUP SEMINAR

*200 years of West Country sea dragons*

**Friday 23rd – Saturday 24th July 2010**



Following on from the highly successful PalAss review seminar 'Sea Dragons of Avalon', GCG has teamed up with three of the meeting organisers to run a similar event to mark the 200th anniversary of the birth of Thomas Hawkins (1810-1889), the eccentric collector of Street and Lyme Regis marine reptiles.



It is anticipated that the meeting will take place on Friday 23rd July followed by a field excursion on Saturday 24th to visit some of the modern Lias quarries in the Street area. The meeting will focus on Thomas Hawkins, his collections, legacy and modern collecting. Topics will include current locations and state of Hawkins' specimens, including issues of acquisition, mounting methods and conservation, as well as restoration/forgery. We will investigate Hawkins' life and work, his contemporaries, and Hawkins' (metaphorical) heirs – the modern collectors, preparators and curators, as well as site conservation.

Please contact

Leslie Noe (e mail [Leslie.No@thinktank.ac.uk](mailto:Leslie.No@thinktank.ac.uk))

Curator of Natural Science, Thinktank, Birmingham Science Museum, Millenium Point, Curzon Street, Birmingham B4 7XG

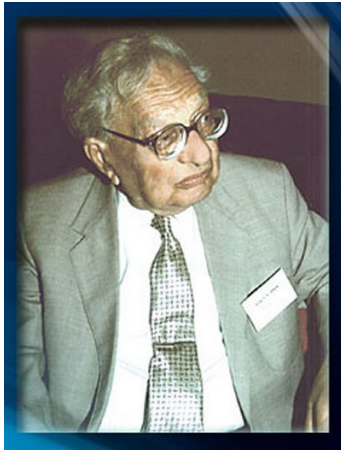


## VIKTOR EFIMOVICH KHAIN

26th February 1914 - 24th December 2009

Anatoly Ryabukhin (Moscow State University)  
on behalf of colleagues, students and friends of Viktor Khain

*Viktor Khain was an Honorary Fellow of the Geological Society of London and Corresponding Member of INHIGEO. The following obituary notice has been prepared especially for the HOGG newsletter and translated from the Russian by HOGG member Svetlana Nikolaeva.*



Viktor Efimovich Khain, who died on 24th December 2009 at the age of 95, was an admired and respected Professor in the Department of Dynamic Geology of the Geology Faculty of Moscow State University, an Academician of the Russian Academy of Sciences, and one of the leading geologists of our time. His scientific interests embraced a wide range of geological and general natural history topics including problems of general geology, comparative planetology, the influence of close and far space on the Earth's evolution, the origin of life, deep subsurface geology, the evolution of the Earth's tectonosphere, the theory of geological formations, general geotectonics, problems of regional and oil geology, Precambrian geology, neotectonics, structural geomorphology, palaeogeography, history and philosophy of geological science, and geological

education. He was a dedicated naturalist and geologist, and his studies took him to many regions of the former Soviet Union, including the Caucasus, the Yenisei Range (Siberia) and the Tien Shan mountains (Kazakhstan). He examined folded areas in Eastern and Western Europe, Asia, North and South America, Africa and Australia, and took part in sailing expeditions in the Atlantic and Pacific Oceans as well as the Caribbean and Mediterranean.

The Caucasus was Viktor Efimovich's geological 'motherland'. His first paper, in 1937, was entitled '*Geological studies and search for oil in the Lagich mountains [South-eastern Caucasus]*', and the promising young geologist's unconventional way of thinking immediately drew the attention of the geological community. In 1940, he gained his PhD on '*Jurassic and Cretaceous Facies of the South-eastern Caucasus*' and, in 1947, his DSc on '*Geology and Oil-bearing capacity of the South-Eastern Caucasus*'. In 1945, he was appointed lecturer in geotectonics at the Azerbaijani Industrial Institute where, in 1949, he was awarded a Professorship. At various stages of his scientific career, Viktor Efimovich returned to the geology of the Caucasus which was the proving ground for his theoretical interpretations. From 1954, he began to work at Moscow State University, first as Head of Section in the Earth Sciences Museum and, from 1960, as Professor in the Department of Dynamic Geology. In 1961, together with A. B. Ronov and V. D. Nalivkin, he published the '*Atlas of lithological-paleogeographical maps of the Russian Platform and its geosyncline margins*', followed by four volumes of the '*Atlas of lithological-paleogeographical maps of the USSR*' (1968) and, much later, by two volumes of the '*Atlas of lithological-paleogeographical maps of the world. Late Precambrian and Palaeozoic. Mesozoic and Cenozoic*' (1984-1989).

In 1966, Viktor Efimovich was elected a Corresponding Member of the Academy of Sciences of the USSR, allowing him even closer collaboration with the institutions of the Russian Academy of Sciences. He was always interested in oil geology, and together with I. O. Brod and V. V. Veber

was justifiably considered to be a founder of the concept of oil-bearing basins. Later in life, he studied the problems of oil-bearing geology in association with geodynamics, and recognized the global oil-bearing belts on our planet, introducing a new classification of oil-bearing basins based on the tectonics of lithosphere plates. He showed patterns in the global distribution of oil-bearing deposits across continents and oceans, and the relationship between oil-bearing basins and rift formation.

As early as 1956, Viktor Efimovich had joined the international project on tectonic mapping and, from 1972, he became the Secretary General and, from 1984, President of the Subcommittee on tectonic maps of the world, and Chairman of the National Commission on Tectonic Maps at the Academy of Sciences of the USSR. Tectonic mapping became the main focus of his research. From 1977 to 1996, he took an active part in the compilation of five international tectonic maps. He combined the production of global tectonic models and palaeogeographic atlases with a fundamental five-volume series *Regional Geotectonics* (1971-1985) for which he was awarded the State Prize of the USSR. His three-volume monograph *Historical Geotectonics* (1984-1988), co-authored with his former pupils N. A. Bozhko, K. B. Seslavinsky and A. N. Balukhovskiy, was a logical continuation of this work.

The 1970s were critical years in the transformation of scientific ideas for many geologists. In the semi-popular Russian natural history magazine *Priroda*, Viktor Efimovich wrote an article entitled ‘*Is a scientific revolution in geology really happening?*’ in which he responded to the public discussion that started in *Geotimes* between V. V. Belousov and J. T. Wilson; he supported the latter. This was the beginning of a new stage in the debate between the so-called ‘fixists’ and ‘mobilists’, which was particularly intense in Russia, and he became convinced of the soundness of the principles of plate tectonics based on his experience of geodynamic interpretations in the Caucasus.

In 1987, Khain was elected Academician of the Academy of Sciences of the USSR and, in 1992, he was awarded the highest award of the Academy of Sciences (Gold Karpinsky Medal) for a series of works on historical geotectonics and palaeogeography. In 1993, he won the Moscow University First Degree Lomonosov Prize for a series of papers on ‘*Global tectonics of the Earth*’. In 2000, he published the monograph *Tectonics of continents and oceans*, which was awarded the A. D. Arkhangelsky Prize.

Viktor Efimovich was an inspired and excellent teacher who began teaching at his *alma mater* – Azerbaijani Industrial Institute. At the Geology Faculty of Moscow State University, he taught courses on geotectonics, regional geology, and the history and methodology of geological sciences. As recently as Spring 2009, he gave several lectures to the Masters students on major problems of geology. As well as many hundred papers, he wrote text-books for many major geological courses including *General Geotectonics* (1985), *Geotectonics and Basic Geodynamics* (1995, 2005), *Historical Geology* (1997, 2006), *Geology and Geochemistry of Oil and Gas* (2004), *Regional Geotectonics* (2004), *History and Methodology of Geological Sciences* (1997, 2004, 2008) and *Planet Earth, from Core to Ionosphere* (2007). During his 60-years of teaching, he supervised 67 PhD students, and 25 DScs were among his pupils.

Viktor Efimovich was well known and recognized outside of Russia. He was an Honorary Doctor at Université Pierre et Marie Curie in Paris, honorary member of the European Academy, foreign member of the Academy of Sciences of Azerbaijan and foreign member of the Academy of Sciences of Georgia. His awards include the Paul Fourmarier Prize and Gold Medal from the Royal Academy of Belgium, Gustav Steinmann Medal from the German Geological Association,

the Prestwich Medal from the Société Géologique de France and three prizes of the Moscow Society of Nature Explorers. He was also a member of the editorial boards of many Russian and foreign journals. His scientific activity and participation were amazing. In the last seven years, he published seven text-books, three monographs, and over 50 papers on the most up-to-date and acute problems of geology. His monograph *Major problems of modern geology* (2003) contained the philosophy and ideas of a scientist who, for over 70 years, was witness to and participated in the evolution of many major concepts in the geological sciences. In 2008, he delivered a plenary talk at the international meeting in Baku (Azerbaijan) and lectured in the USA.

Viktor Efimovich was not only an outstanding scientist, but also had a sparkling, exciting personality. He was interested in various fields of science and life – from continental drift to world politics, from the problem of the origin of life to the music of Mussorgsky and Wagner, from scientific debates to parties with friends. Those who knew him were enthused and amazed by his alertness, activity, zest for life and benevolence, as well as his constant attention and care about the work of his colleagues, especially young researchers.

The many friends and colleagues of Viktor Efimovich express their sincere condolences to his family, and will always retain heartfelt fond memories of him.

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## **JOHN STUART WEBB F.R.Eng. AND THE HISTORY OF APPLIED GEOCHEMISTRY AT IMPERIAL COLLEGE, LONDON**

**Richard Howarth**



The death of the English pioneer of applied geochemistry, Emeritus Professor John Stuart Webb, in April 2007 marked the end of an era. Under his leadership, the science of exploration geochemistry for ore bodies broadened out to embrace regional geochemistry; applied marine geochemistry (especially the investigation of metalliferous brines and manganese nodules); agricultural and environmental geochemistry; multi-purpose geochemical mapping; and, in more recent years, urban geochemistry. This work was undertaken in the Geochemical Prospecting Research Centre (later renamed the Applied Geochemistry Research Group)

established by him in 1954 in the Department of Geology, Royal School of Mines, Imperial College of Science and Technology, London.

In order to commemorate his life and work, a number of former members of his research group have put together a collection of papers on Webb, and the work of his associates and students in the Geochemical Prospecting Research Centre and Applied Geochemistry Research Group. These will be published, in August 2010, by the Geological Society of London as Volume 10, part 3, of the journal *Geochemistry: Exploration Environment Analysis*. The contents of this volume (editor: Richard Howarth) will be as follows:

**R.J. Howarth** Introduction

**R.J. Howarth** John Stuart Webb, F.R.Eng., and Applied Geochemistry at the Imperial College of Science and Technology, London

**G.J.S. Govett** Early years in the Geochemical Prospecting Research Centre, Imperial College of Science and Technology, London: exploration geochemistry in Zambia in the late 1950s; a personal recollection

**M. Thompson** Analytical methodology in the Applied Geochemistry Research Group (1950-1988) at the Imperial College of Science and Technology, London

**M. Hale** Gas geochemistry and deeply buried mineral deposits: the contribution of the Applied Geochemistry Research Group, Imperial College of Science and Technology, London

**C.R.M. Butt & R.H. Mazzucchelli** The legacy of John Webb and the Applied Geochemistry Research Group, Imperial College of Science and Technology, London, to geochemical exploration in Australia

**R.J. Howarth** and **R.G. Garrett** Statistical Analysis and Data Display at the Geochemical Prospecting Research Centre and Applied Geochemistry Research Group, Imperial College, London

**D.S. Cronan** A synthesis of Applied Geochemistry Research Group and consequent research at the Imperial College of Science and Technology, London, into establishing geochemical exploration techniques for marine minerals

**I. Thornton** Research in Applied Environmental Geochemistry – with particular reference to geochemistry and health

**C.J. Moon** Geochemical exploration in Cornwall and Devon: A review.

Non-members of the Association of Applied Geochemists, and other non-subscribers to the journal, may purchase single copies of this special issue for £25 (including postage). Anyone who wishes to pre-order it should contact: The Geological Society Publishing House (Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath, BA1 3JN, UK), email: sales@geolsoc.org.uk; Tel: +44 (0)1225 445046; Fax: +44 (0)1225 442836, and an order form will be sent to you in response. Closer to the time of publication, it will have an entry in the Geological Society of London's online bookshop ([www.geolsoc.org.uk/bookshop](http://www.geolsoc.org.uk/bookshop)).

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## THE GEOLOGICAL CURATOR

*HOGG members may find the contents of the latest issue of The Geological Curator (Vol. 9, No. 2; ISSN 0144 - 5294), dated December 2009, of some interest.*

G. E. Mallett, S. Finney & G. A. Chinner - *The Sir Abraham Hume diamond collection in the Sedgwick Museum, Cambridge.*

J. Shepherd - *The St Aubyn mineral collection (c. 1794-2010) at Plymouth City Museum and Art Gallery.*

P. Wyse Jackson & M Parkes - *William Helliier Baily (1819-1888): forever an acting palaeontologist with the Geological Survey of Ireland.*

N. Monaghan - *Leopold McClintock- 'Arctic Fox' and his natural science collections.*

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### STAMMERHAM QUARRY: A SUSSEX QUARRY OF HISTORICAL SIGNIFICANCE

**Anthony Brook**

Many of the more important quarries for pioneer geological purposes in the 19th century have vanished due to the persistent processes of natural recovery and/or purposeful infilling by man. One such is Stammerham Quarry, a significant site in the history of Sussex geology that seems to have disappeared into the dense fog of past times. Gallois & Worssam in the BGS Memoir for the country around Horsham (1993) wrote (p.81) that '*The exact site of Stammerham Quarry is uncertain. Topley (1875) [in Geology of the Weald, p.103] thought it might lie 'within the triangle formed by the three lines of railway' at Christ's Hospital [i.e. at 146291]*'. But why should we consider Stammerham Quarry significant and can we now throw any further light on its exact location?

In June 1822, from his home at Castle Place, Lewes, Gideon Mantell wrote a letter to William Henry Fitton, Secretary of the Geological Society, entitled '*On the Iron-Sand Formation of Sussex*', which was read at a meeting of the Society on 14th June that year but not published in the *Transactions* until 1826 (in Series 2, Volume 2, Part 1, pages 131-134). This was a shame because it concerned fieldwork carried out in the spring of 1822, if not earlier. In his communication to Fitton, Mantell wrote (p. 132) that '*In tracing the Tilgate strata westward, in the direction of a line drawn from Hastings to Framfield, and from thence to Horsham, we find them exposed in several quarries, which have been opened for repairing the roads and other economical purposes. Still further to the west the strata are exposed to a considerable extent in the vicinity of Horsham. Mr Lyell has favoured me with the following section and description of a quarry at Stammerham, near that town*'. This descriptive section, provided by Charles Lyell in a letter to Gideon Mantell and quoted by Mantell in his letter to Fitton, is reproduced below.

"Section of Stammerham Quarry, near Horsham.

	<i>Provincial Terms.</i>	<i>Thickness.</i>
1. Vegetable mould . . . . .		1 foot 6 inches.
2. Stiff clay and loam . . . . .		9 feet.
3. Compact calciferous sandstone, with deep undulating furrows on the upper surface. . . . .	} Rough Causeway . . . . .	4 inches.
4 & 5. The same rock, but more indurated, in two layers; the upper four inches, the lower one twelve inches thick: (an excellent road material) . . . . .		
6. Ferruginous sandstone (pulverized for bricks) . . . . .	} Scrub Stone . . . . .	1 foot 4 inches.
7. A blue soapy marl . . . . .		
8. Ferruginous sandstone, like No. 6. . . . .		1 foot.
9. Hard calcareous sandstone, used for roads and rough paving . . . . .	} Ground Pinning-stone.	1 foot.
10. Compact calciferous sandstone, of finer texture than any of the above. It occurs in large slabs, and forms an excellent paving material for kitchens, &c. It is slightly marked with undulating furrows on the upper surface . . . . .		
11. Marl sunk through, but not worked . . . . .		4 feet.
12. Stone in slabs, reached by boring . . . . .		depth unknown.

Mantell continued: 'In the calciferous sandstone, No. 10, according to the report of the workmen, the bone of an animal was discovered some years ago; organic remains, however, appear to be rare. No shells occur; but branches of vegetation in a carbonised state are met with. The quarry at Tower Hill, near Stammerham, so nearly resembles it that it is unnecessary to describe it. In the quarries at Sedgwick, 2 miles from Stammerham, Mr Lyell observed a large quantity of slabs of paving-stone, many of which were deeply furrowed on both sides. This appearance is common in the sandstone throughout Sussex, and appears to have been formed by the advance and retrocession of the waves' - an inter-tidal marine environment.

On Saturday 21st May 1831, Gideon Mantell paid a visit to Stammerham Quarry in the company of his by then good friend Charles Lyell, who had recently published the first volume of his *Principles of Geology*. Mantell briefly recorded this geological fieldtrip in his Journal: 'Rose at 3 am and drove to Horsham to meet my friend, Mr Lyell: arrived there at 8, very rainy and cheerless confined to the Inn till 12 At 1.30 my friend Mr Lyell arrived by the Coach: we immediately started for Stammerham quarry on foot, accompanied by a man to carry our baskets At the quarry we were much gratified by the numerous ripple marks on the surface on the sandstone. Returned to dinner at the Inn'. He turned his observations at Stammerham Quarry that day into two publications: an article in the prestigious monthly *Edinburgh New Philosophical Journal* (November 1831) and then four pages in his book on the *Geology of Southeast England*, published in May 1833. The focus of the 1831 article (transcribed below) was the pronounced undulations, or ripple marks, on the Horsham Stone (= Rough Causeway), the cause of which was hotly disputed but which Mantell explained as a 'simple operation of nature' - the undulations of water in a low-energy marginal environment.

From the *Edinburgh New Philosophical Journal*, 11 (1831), pp.240-241

*On the Ripple Marks made by the Waves, observable in the Sandstone Strata of Sussex*

The deep undulations with which the surface of many of the slabs of Horsham-stone are covered, must have been observed by all who have noticed the pavements in the towns and villages where that stone is employed. In some instances the slabs are so rough as to be made use of for stable-

yards and cross ways, where an uneven surface is required to prevent the feet of horses from slipping when passing over. Obvious as the cause of this curious appearance seems to be, yet it has been a subject of dispute among men of science, the mind being but too apt to seek for a mysterious agent, to explain effects which have been, and are still being, produced by some simple operation of nature.

In the case before us, it appears scarcely possible that any one who examines the markings produced by the undulations of water on sand and mud, on the margins of lakes, rivers, and estuaries, or on the sea-shore, can doubt that characters so precisely analogous as those observable in the Horsham-stone have been effected by a similar operation. In the description of the fossils of Tilgate Forest, a short notice is taken of the phenomenon under consideration: a recent examination of the quarries of Horsham, in company with my friend Mr Lyell. induces me to offer a few additional remarks on this subject

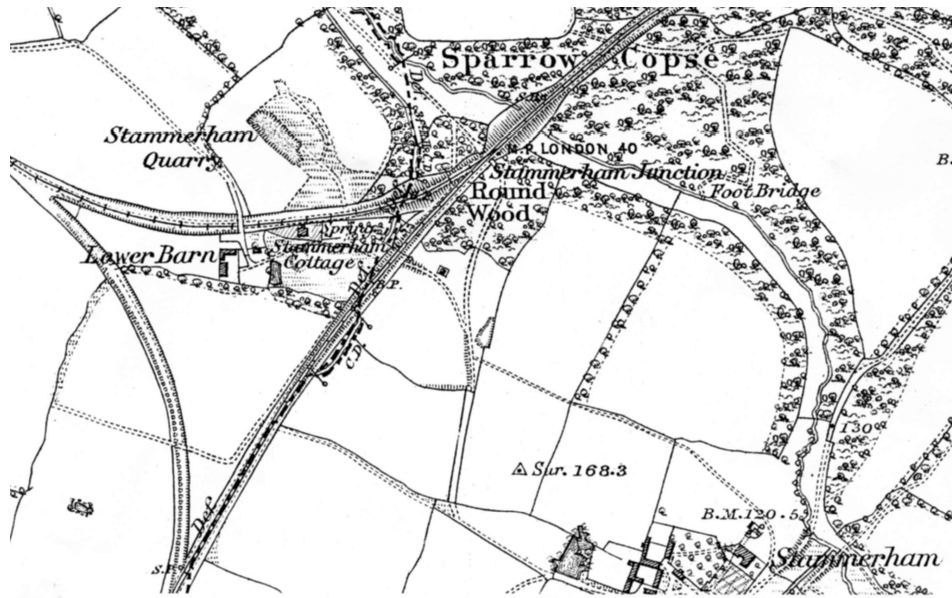
When a large surface is first exposed, a most interesting appearance is presented, and the spectator is struck with the conviction that he is standing on an ancient shore. In some places the furrows are deep, affording evidence of the water having been much agitated, and the ripple strong; in other instances the undulations are gentle, and are frequently intersected by cross ripples, from a change in the direction of the waves. On some parts of the stone there are slightly elevated longitudinal ridges of sand, made up of gentle risings, disposed in a crescent-like form, resembling most closely the sand ridges which are produced by little rills which flow back into the sea or river at low water. Some of the slabs are covered with thin angular ridges, irregularly crossing each other like the fissures in septaria, and which have obviously been caused by the deposition of sand into the crevices made in sand or mud by drying. A very considerable portion of the stone (the flat as well as the furrowed variety) is covered with small cylindrical bodies, which have been moulded in the hollows produced by some species of verities. Similar forms of a larger size also occur, these resemble the trails left by mussels, and have probably been occasioned by some of the analogous bivalves whose remains are imbedded in the strata of Tilgate Forest

Since, in some instances, the foot-marks of animals (supposed to be reptiles) have been discovered in sandstone of England and Scotland, we examined the slabs in the quarries at Horsham with considerable attention, in the expectation that similar indications might there occur, but although our researches were not attended with success, yet as reptiles are known to have existed in vast numbers on the land and in the water at the period of the formation of these strata, and as the markings on the surface of the stone is a proof that it was deposited in shallow water, and was occasionally left dry, it is more than probable that impressions will sooner or later be discovered. The object of this brief memoir is to draw attention to the subject, in the hope that persons of taste and leisure will pursue the inquiry

This is precisely the type of shallow-water environment where reptilian fossil footprints might well be discovered though Mantell and Lyell found none. Although Mantell offered these comments after a '*recent examination of the quarries of Horsham in the company of my friend, Mr Lyell*', he did not actually specify Stammerham Quarry; it must, nevertheless, have been clearly in the forefront of his mind, bearing in mind his recent field work.

Eighteen months later, in his general geological text on Southeast England, he wrote (p.212): '*Approaching Horsham, we find quarries of sandstone along the southern edge of [Tilgate] forest, and on many farms and villages in the vicinity of the town, as at Stammerham. The most considerable quarry in the vicinity of Horsham is that of Stammerham, 2.5 miles southwest of the town, of which the following is a section:*' That statement is important, for two reasons: it provides a specific location in terms of distance and direction from Horsham, and also a stratigraphical section which is very similar to that published in 1826 and aids confirmation of the quarry site. Mantell continued (p.215): '*The furrowed state of the surface of the sandstone [known locally as Rough Causeway] frequently occurs in the arenaceous strata of Sussex, and has evidently been produced by the rippling of water*'. He concluded this section thus (p. 215) '*These observations were made during a visit to Stammerham Quarry, near Horsham, in company with Mr Lyell, in 1831*', which neatly takes us back to a particular day that year and the field excursion of two pioneer geologists.

Locating the whereabouts of Stammerham Quarry presents an immediate problem, because the toponym Stammerham does not feature on the current large-scale O.S. map (Explorer 134) covering the area to the southwest of Horsham. However, the 1st edition of the O.S. 6 inch to the mile map (Sheet 13, Sussex), surveyed in 1875-76, published in 1880 and reproduced below, clearly



O. S. Map, 1<sup>st</sup> Edition of 6" to 1 mile, Sheet 13 (Sussex), surveyed 1875-76; published 1880.

shows Stammerham Farm as well as Stammerham Quarry, just to the north of the triangular railway junction on the London, Brighton and South Coast Railway known as Stammerham Junction.

Although this map recorded the situation 45 years after Mantell and Lyell visited the quarry in 1831, there can be no doubt about its considerable size and exact location just inside the eastern boundary of Itchingfield Parish. For some reason, the Tithe Map for this parish, published in 1839, shows no evidence of any stonepit or quarry in this field, No. 52, owned by Sir Timothy Shelley and tenanted by Edward Lucas. That is odd, since it was most certainly there in May 1831, only eight years previous, and again in the mid-1870's. It was marked as 'Old Quarry' on the 2<sup>nd</sup> edition of the 6 inch O.S map, published in 1898, but changes were afoot which would radically alter the landscape of this whole area in the next 30 years or so. As J. E. Morpurgo relates in his introductory history of Christ's Hospital (1992, p.39): *'In June 1892 the Governors of the School decided to purchase the 1000-acre estate of the Aylesbury Dairy Company just outside Horsham in West Sussex'*, which was centred on Stammerham Farm, for a new school to be built beyond the confines of central London.

Work progressed rapidly: the Foundation Stone was laid on 23rd October 1896, and School assembled on 29th May 1902 for the first time in its new rural surroundings which was designated West Horsham to give it an urban ambience. Building continued apace and changes ensued. By the time of the revision of the 6 inch O.S. map in 1932, the toponym Stammerham had gone, the old farm buildings had been replaced by the school gymnasium and baths, Stammerham Junction was now the railway station for Christ's Hospital and, sadly, Stammerham Quarry was no more. It had reverted to farmland, but at least we know, without any doubt, where it used to be, where Mantell and Lyell went on their fieldtrip, and the site of the section described earlier by Charles Lyell.



**GEOLOGY IN THE HISTORY OF PROVINCIAL SCIENTIFIC SOCIETIES**

**WILLIAMSON BUILDING, UNIVERSITY OF MANCHESTER  
OXFORD ROAD, MANCHESTER M13 9PL  
FRIDAY 9TH APRIL 2010**

*Convenors*

Beris Cox

(beris.cox@btinternet.com)

Leucha Veneer

(leucha.veneer@manchester.ac.uk)

Alan Bowden

alan.bowden@liverpoolmuseums.org.uk)

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For programme, see page 7 of this newsletter.

Please complete the form below and mail it as soon as possible (and before 31<sup>st</sup> March), together with a cheque (payable to HOGG) for £5 per person.

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Those requiring overnight accommodation either before or after the meeting are referred to the following which are all near the meeting venue.

Manchester Business School (University of Manchester), Hotel Services, Booth Street West, Manchester M15 6PB Tel. 0161 3061320 e mail reception@mbs.ac.uk  
www.mbs.ac.uk/aboutus/conference-hotel/hotel-services.aspx

Days Hotel Manchester City, Weston Building, Sackville Street, Manchester M1 3BB  
Tel. 0161 955 8400 e mail reservations@days-mcc.co.uk  
www.dayshotelmanchester.co.uk

Ibis Hotel Manchester Charles Street, Charles Street/Princess Street, Manchester M1 7DG  
Tel. 0161 2725000  
www.ibishotel.com/gb/hotel-3143-ibis-manchester-charles-street/index.shtml

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I/we wish to register for the *Geology in the History of Provincial Scientific Societies* meeting on Friday 9th April 2010.

Name(s) .....

Address .....

.....

.....

.....

E mail. .... Tel. ....

Cheque (payable to HOGG) enclosed (@ £5 per person). ....

**Return to:**

Dr B M Cox, 151 Browns Lane, Stanton-on-the-Wolds, Keyworth, Nottingham NG12 5BN