

HOGG

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



**Number 45
June 2012**

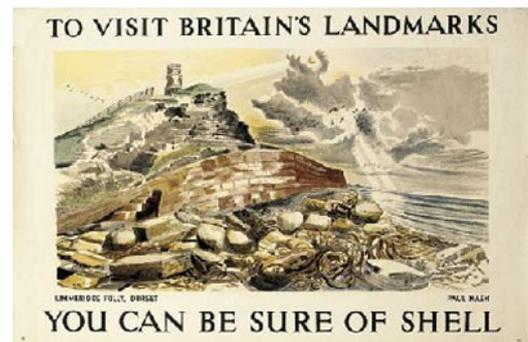
Front cover

See Ireland First on Shell, Giant's Causeway, Ulster
Colour lithograph by Anthony Raine Barker 1925

This is one of a series of posters begun by Shell in 1925 featuring the slogan "See Britain First – on Shell" and "See Ireland First – on Shell".

Later they issued a series featuring a number of follies from around Britain and the slogan "To Visit Britain's Landmarks You Can Be Sure of Shell". The example below is entitled "*Kimmeridge Folly, Dorset*". The colour lithograph by Paul Nash was issued in 1937 (original in the Victoria & Albert Museum in London); the 'folly' is Clavell's Tower (on cliffs of Kimmeridge Clay) at Kimmeridge Bay, Dorset.

Posters were characteristic of Shell's advertising during the 1920s and 1930s. Artists not instinctively associated with commercial art were commissioned to convey simple messages promoting Shell; these artists went on to become famous names in British contemporary art.



The Shell Advertising Art Collection is housed at the National Motor Museum at Beaulieu, Hampshire. See www.nationalmotormuseum.org.uk/About_Shell_Art_Collection

.....and don't miss the HOGG meeting
Appreciating Physical Landscapes: Geotourism 1670-1970
in October (see page 16 of this newsletter).

Editorial subcommittee

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

HOGG NEWSLETTER 45

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LETTER FROM THE CHAIR



Alan Bowden's interview with the late John Fuller, which features in this newsletter, takes us back to the beginning of HOGG. The "history of geologists themselves as thinking people" was of particular interest to John Fuller, especially concerning stratigraphy, because of the importance of understanding how early conceptual models affected later and modern classification schemes. Now that HOGG has existed for almost 20 years, the geologists themselves, the events of their lives, and the ways that they interacted have become fascinating in themselves. I recently visited John Fuller's sons, who gave me copies of an early brochure devised by their father when HOGG was newly founded. In equal proportions, it provides pure history of geology and an outline of HOGG's aims with joining information.

We owe a great deal to the foresight and intellectual confidence of John Fuller and his contemporaries for establishing HOGG.

The two annual events envisaged by HOGG's founders have already been achieved this year with the Open Meeting at Burlington House organized by Anthony Brook in March, and the Geikie Meeting organized by Dick Moody, John Diggins and the staff of Haslemere Educational Museum in April. The Open Meeting was the usual eclectic mix of interesting papers. The meeting on Geikie was sparked by the treasure trove of Geikie's correspondence, field notes, publications and paintings discovered recently in the loft at the Museum in Haslemere. The wide range of speakers illuminated many aspects of Geikie's career. Both meetings were very well attended and are reported in this newsletter.

Later this year, there will be two more meetings. In October, Tom Hose has assembled a fascinating programme demonstrating the link between geology, early travel and modern tourism in '*Appreciating Physical Landscapes, 1670-1970*'; this will include a visit by train to the east Kent coast drawing on early Geological Association field trips. On December 18th, Dick Moody has developed a fascinating programme to celebrate the 100th anniversary (to the day) of the presentation of the paper by Charles Dawson on his 'discovery' of Piltdown Man. Further details of both meetings are in this newsletter.

Finally, returning to the early HOGG brochure, the annual cost of membership at the time was £7. Today, at £15, the subscription still represents good value. The committee has to address the realities of rising costs with each meeting that we organize. Our continuing aim is to keep membership affordable to as wide a group as possible, and for each meeting to break even on cost.

I hope you will all have an enjoyable summer that includes both landscapes and geology, and I look forward to meeting many of you at our meetings in October and December.

John Henry
June 2012

HOGG COMMITTEE 2012

Chairman John Henry **Vice Chairman** Bob Symes **Secretary** Leucha Veneer
Treasurer Beris Cox **Ordinary members** Tony Brook, David Earle, Tom Hose, Richard Howarth,
Cherry Lewis, Tom Sharpe

CHERRY LEWIS AWARDED SUE TYLER FRIEDMAN MEDAL



The Sue Tyler Friedman Medal has been awarded this year to Cherry Lewis for her distinguished contributions to the recording of the history of geology. This Geological Society award was established by Gerry Friedman in 1987 by a gift of the Northeastern Science Foundation Inc. of Troy, New York, and dedicated to his wife Sue Tyler Friedman. The award of the medal is not confined to those with a geological background or to Fellows of the Geological Society of London. It is awarded annually, or at such intervals as Council may determine, on a world-wide basis without regard to nationality.

Former Chair of HOGG and current HOGG committee member, Cherry received her award at this year's President's Day at Burlington House on June 13th. Her name is now added to the list of distinguished historians who have previously won the award:

Martin Rudwick (1988)	David R. Oldroyd (1994)	Rhoda Rappaport (2003)
Stephen J. Gould (1989)	Homer E. Le Grand (1995)	Ursula Bailey Marvin (2005)
William A. S. Sarjeant (1990)	Gordon L. Herries Davies (1996)	Jack Morrell (2007)
Hugh S. Torrens (1991)	Martin Guntau (1997)	Philippe Taquet (2009)
François Ellenberger (1992)	Kenneth L. Taylor (1998)	Cherry L. E. Lewis (2012)
Thomas G. Vallance (1993)	James A. Secord (2000)	



(Medal photos: Geological Society of London)

The CITATION given by the GSL President:

“The Sue Tyler Friedman Medal, awarded for excellence in research into the history of geology, was endowed by a Foundation established by one of this Society's senior Fellows – the distinguished

carbonate sedimentologist and historian of science, Professor Gerald Friedman, who sadly died in November last year. Let us take the occasion of this award to remember and salute a great benefactor of the Society.

The Award, named for Gerald's wife, goes this year to a geologist who has straddled many worlds in her career – Dr Cherry Lewis. With a childhood interest in fossils, Cherry came to study geology as a mature student, obtaining academic qualifications in geochemistry which led to a career in oil exploration. Until her recent retirement, she worked at the University of Bristol as an editor and media relations manager, promoting that institution's scientific research to a wider public.

Cherry's interests, however, have long lain in the history of our science. An active member of the History of Geology Group (HOGG), she served as Chair from 2004 to that crucial anniversary year of 2007, when she convened a conference on the Society's history, with its memorable dinner in costume dress, and co-edited the subsequent Special Publication.

Cherry is well known as the biographer of Arthur Holmes, and for her book about his life and work, *The Dating Game*. She is currently working on a biography of one of this Society's founders, James Parkinson – best known today for giving his name to the neurological disease he first described.

Cherry Lewis, you have been pivotal in developing the History of Geology as a discipline within this Society. Your personal drive and energy have been major factors in making HOGG one of this Society's most active and exciting specialist groups. Please accept with our respect and gratitude, the Sue Tyler Friedman Medal of The Geological Society of London."

The RESPONSE given by Cherry Lewis:

"Thank you so much – I cannot say how delighted I am to be recognised for doing something I enjoy so much, but I would not be here had it not been for Bristol University and the Open University where I took my degrees, and who took me on as a mature student; to them, undying thanks. Never did I imagine I would one day be standing on this podium, let alone sharing it with my PhD supervisor, Chris Hawkesworth, this year's Wollaston medallist.

I joined HOGG about 15 years ago, when it had been in existence about three years and our membership was very small. In fact, as John Fuller, one of the founders of HOGG who sadly died this year, recalled for our oral history project: "At the time ... the Geological Society, as the world's premier Society, seemed to be only distantly attached to its own history".

But over the years, this attitude has changed and it's now wonderful to see even diehard geologists becoming interested in the subject. A few weeks ago I was at a meeting where, to my amazement, there were John Dewey and Rob Butler, both giving historical papers. Even Chris e mails me on occasions, seeking bits of historical information. The history of geology seems to have come of age.

Today, the Society's publications on geohistory are some of its best sellers and you may have noticed that hardly a month goes by without *Geoscientist* carrying an article on geohistory. Ours may be a young science but its history is full of vitality. It's the story of geologists and how they think, how their ideas have evolved and how we come to be where we are now in the understanding of our science. It's an astonishing story that all of us are part of – and it's a history we should all be proud of."

JOHN G.C.M. FULLER AND THE FOUNDING OF HOGG

Alan J. Bowden¹

As reported in the last HOGG newsletter, John Fuller, founder member of HOGG, died on January 20th 2012. Here, Alan Bowden records some of John's memories of the founding of HOGG and John's views on the history of geology, and particularly stratigraphy, as a discipline. Alan is preparing a full obituary for Geoscientist.

On January 21st 2010, I had the pleasure of interviewing John Fuller as part of the HOGG oral history project. The interview was not primarily concerned with John's professional life but rather with the founding of HOGG and John's philosophy towards the history of geology, in particular his love for stratigraphy and the approaches adopted by the early practitioners. This account is based mostly on John's own words taken from the taped interview I conducted at his home.



Photo from HOGG newsletter 12 (July 2000)

John recalled that HOGG took around ten years to become established following the first letter he had written to Hugh Torrens dated 6th November 1984. In this letter John wrote:

"I think that there are many advantages to forming such a group rationalising the United Kingdom geological input into the profession, there would be savings in secretarial and administrative time and wide spread publicity through the agency of the newsletter of the Geological Society and the prospect of reading papers to special meetings of the Geological Society dealing with archival and historical subjects. The Society already has a full time archivist [the late John Thackray who was appointed honorary archivist in 1981]."

This letter was presumably shown to Richard Bateman (Executive Secretary of the Geological Society of London (GSL)) because he sent a response to John stating that the next step would be a letter from John to Hugh Torrens outlining the advantages enjoyed by affiliated groups; Hugh was then the UK representative for HESS (History of Earth Sciences Society, founded 1982). At that time, John's aim was to seek an alliance between HESS and the GSL.

In a further letter to John dated March 1985, Richard Bateman wrote:

"The possibility of a link between HESS and the Geological Society was considered at the last officers' meeting. Whilst the officers were pleased that some consideration had been given to this, it was felt that its international base (HESS) would make affiliation with the Geological Society as an affiliated group difficult. All the Society's existing groups are strictly UK bodies and I think we would be in difficulty with our charter".

At this point, John felt that progress languished and it wasn't until 28th September 1992 that John Martin wrote a formal letter to the GSL stating that:

"We wish to formally propose the establishment of HOGG and to this end a draft of the group's constitution is attached." A copy of this letter was given to John Fuller as well as to Prof. Charles Curtiss (then President of the GSL).

On 17th November 1993, the second preliminary meeting of the embryonic HOGG was convened by the organizing committee. Items on the agenda included discussion of the constitution and the GSL's

response to an invitation from the American Association of Petroleum Geologists (AAPG) to mount ten or 12 poster displays on the subject of the history of geology, particularly British contributions, at their annual meeting in Denver. John Fuller eventually took the display to America, which included the original William Smith table of strata!!

In January 1994, another meeting of the organizing committee was convened. At the request of John Thackray, this was held at the Natural History Museum in London. Matters for discussion included a review of progress of the AAPG poster display, links with INHIGEO, publicizing HOGG, and trying to get the William Smith plaque moved to its correct location [see “The Tucking Mill tablet - a final appeal for action!” pp. xxxv – xxxvii in Torrens, H S. 2003. Introduction to the life and times of William Smith. *Memoirs of William Smith, LL.D.* The Bath Royal Literary and Scientific Institution.]

By February 10th 1994, the Council of the GSL agreed to the formation of a new specialist group on the history of geology. John Thackray, Hugh Torrens and John Fuller were respectively Acting Chairman, Secretary and Treasurer. Membership was to be open to all (not just Fellows of the GSL). It was felt that the Chair should be someone who was well known to the GSL and who better than John Thackray, their archivist at that time.

The inaugural meeting of HOGG took place on Tuesday 4th October 1994. It was decided that there should be two meetings a year and the first committee consisted of John Thackray (Chairman), John Martin (Secretary), John Fuller (Treasurer), Richard Howarth (GSL representative), Jim Secord, Hugh Torrens and Peter Tandy (Newsletter Editor). On 10th October 1994, the opening full meeting of HOGG discussed plans for celebrating the Lyell/Hutton bicentenary and the forthcoming Palaeontographical Society sesquicentenary.

So, ten years after the idea was first mooted, HOGG finally came into being.

John then talked about his approach to the history of geology and expressed a general feeling of astonishment that, at the time of HOGG’s gestation, the GSL - the World’s premier geological society - seemed to be only distantly attached to its own history.

John spent most of his professional life in America working for Amerada and Amoco, and in the first instance, his historical researches found their way into publication via the AAPG. This came about as he quickly realized that his American colleagues were only sketchily aware of how geology evolved as a science. He began thinking about the nature of history and attempting to understand the background to what his geological colleagues were doing. He looked quizzically upon the way that his industrial colleagues loved to classify without a full perception of what lay behind it. Coming from a rich geological tradition with a long history in the UK, he felt that the American approach in the 1950s and early 1960s lacked a full understanding of the historical background behind the process of what they were trying to achieve in stratigraphy. One result of this was John returning to the UK to take up a Fellowship at Birmingham University with Fred Shotton. However, he soon realized that he couldn’t live on an academic salary and so returned to the USA. Armed with all of the information on the history of stratigraphy that he could muster, John began to educate his oil industry colleagues. To this end, he set up a lecture series in every Amerada office talking about William Smith and the history of stratigraphy. This was eventually published in the AAPG journal which had a circulation of 24,000. This historical approach was regarded as a revelation by his colleagues in 1950s/60s America, and the AAPG in taking up historical studies, displayed an enlightened attitude for the time when there was much conservatism in approach. For instance, the editor of the AAPG journal was a strong opponent of the theory of continental drift, so it was a bold move to allow a historical paper on the Smithian approach to stratigraphy to appear in their publication. The success of this early work then spurred John on to specialize in the history of American stratigraphers.

John's philosophy on the history of geology as a result of his experience is best summed up in his own words:

"The geological facts are all different according to who looks at it. Really the history of geology is a history of geologists and how they think. The history of geology is not a thing in itself, it is a history of geologists themselves as thinking people."

¹ Alan Bowden, Dept of Earth and Physical Sciences, National Museums Liverpool.
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MICHAEL COLLIE 1929-2011

An obituary of Michael Collie who was another long-standing member of HOGG appeared in the April 2012 issue of *Geoscientist* where he was described as a "polymath who spanned the arts and sciences and turned to the history of geology late in life". His career was mainly spent as an educator of English in university departments in England and particularly Canada. Beginning in the mid 1980s, he became interested in the history of science and wrote several books in that field including *Murchison in Moray: a Geologist on Home Ground* (American Philosophical Society, 1995), *Murchison's Wandering in Russia* (British Geological Survey, 2004) and *Science on Four Wheels: the Continental Travels of Roderick Murchison (1840-45)* (Academica Press, 2010). His work on the history of geology led him to become a Fellow of the Geological Society in 1992.



(photo *Geoscientist*)

According to John Diemer, his obituarist for *Geoscientist*, he continued to work on several bibliographic and history of geology projects up to the time of his death in Nottingham on 21st July 2011.

IN OUR TIME



In our Time is a weekly live BBC Radio 4 broadcast in which Melvyn Bragg and three studio guests discuss the history of ideas, including philosophy, science, literature and religion, and the influence these ideas have on us today. The series is reported to attract a weekly audience of more than two million.

On Thursday April 12th this year, the programme featured *Early Geology*. Although geology only emerged as a separate area of study in the late 18th century, many earlier thinkers had studied rocks, fossils and the materials from which the Earth is made. But how did such haphazard study of rocks and fossils develop into a rigorous scientific discipline? This was the focus of the discussion led by Melvyn Bragg whose three guests were Stephen Pumfrey (Senior Lecturer in the History of Science at Lancaster University), Andrew Scott (Professor of Applied Palaeobotany at Royal Holloway, University of London) and **HOGG Secretary Leucha Veneer** (Research Associate at the Centre for the History of Science, Technology and Medicine at the University of Manchester).

All the *In Our Time* broadcasts (over 500) are archived on the BBC Radio 4 website; hear them on BBC iPlayer or download them as podcasts.

HOGG OPEN MEETING 20th March 2012

Around 50 people attended a very full day of presentations at Burlington House on Tuesday 20th March. As with previous Open Meetings, the day was convened and organized by Tony Brook who had assembled a varied and entertaining programme of 14 talks.

John Mather kicked off proceedings with a talk about water-well drilling in late 18th century Britain and the French industrial spy Le Turc. Until the end of the 18th century, wells were dug by hand. The first bored wells were made by the so-called Chinese Method which comprised a rope and hollowed-out elm tree. Later, iron and wooden rods were used with augers and chisels (although not that much for water-well drilling). The first borehole records are of those which deepened existing wells. The borehole at Queenborough Castle, Isle of Sheppey through London Clay (1723) and the well deepened by Erasmus Darwin in 1783 through Mercia Mudstone in his garden in Derby, were both reported to the Royal Society.

We were then introduced to Bonaventure Joseph Le Turc who was born in Lille in 1748 and probably began engineering studies in Flanders. For seven years, he was professor of fortifications in Paris. In 1780, he came to England in debt and threatened with the Bastille. From 1780 to 1785, he undertook small commissions and described himself as Professor of Military Sciences, French Language and Geography, living in Cavendish Square, London. He published a series of technical pamphlets (of which the speaker had tracked down 70) on such topics as defending property and guarding liberty, construction of the arches of stone bridges, a new type of gate, ladders for libraries, and preventing cavities during the casting of guns. In particular, a pamphlet of 1780 described the methods used in Flanders for drilling artesian wells; this covered the origin of springs, where to drill, procedures, problems and sampling. Amongst the innovations which can be attributed to Le Turc are the early illustration of drilling tools, the use of casing to line water boreholes (distinguishing it from holes to prospect for minerals), and description of a primitive technique for collecting samples in unconsolidated strata. His pamphlets are referenced in a number of papers around the turn of the century and he was in contact with James Sharp who made tools for earth boring. From the middle of 1785, Le Turc became an industrial spy for France, smuggling out firstly stocking looms and then naval pulley-making technology.

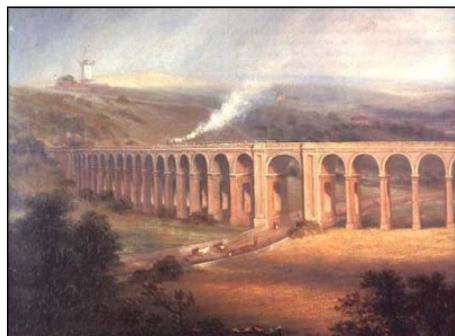
DESCRIPTION

DES
PROCÉDÉS MÉCANIQUES
EN USAGE EN FLANDRE,
POUR CONSTRUIRE DES
FONTAINES
JAILLISSANTES ET PÉPÉTUELLES.

Par M. LE TURC,
Professeur de la MILITAIRE SCIENCES, de la FRENCH LANGUAGE,
and GEOGRAPHY.

Imprimé par T. Spillbury, No. 57, Snowhill;
Et se trouve chez l'AUTEUR, No. 13, Margaret-Street, Cavendish-
Square.

John Lonergan, himself a civil engineer, then spoke about the geological problems of building the London to Brighton railway which ran across the regional dip and therefore through a range of strata. Two routes were selected from the original choice of six; one was a direct route and the other, longer, route passed through Dorking. Robert Stephenson preferred the Dorking route which was flatter. He believed first costs were more important than subsequent operation and maintenance costs; locomotives should be used to pull heavier loads rather than up steeper gradients. Captain Alderson RE agreed the Dorking route was the best engineering solution but the commercial and public benefits of the direct route outweighed the need for heavy engineering works, and therefore the direct route was chosen.



The railway was built over three years; the Shoreham to Brighton section opened in May 1840, and the rest in September 1841. Initially, the tunnels were white-washed and

gas-lit to give confidence to the passengers. The line was commercially successful. Locomotive power grew and soon overcame the steeper gradients. Major slope regrading was needed and still goes on. The New Cross slip of 1841 provided an impetus for basic geotechnical research; failure of Victorian clay cuttings is an on-going railway issue. Paintings and coloured prints from the Brighton Museum & Art Gallery were used, in part, to illustrate the talk.



Tony Brook in flamboyant full flow (Photo: Don Bewick)

After coffee, **Tony Brook** spoke about John Martin (1789-1854) and the artistic search for the “Scientific Sublime”. The concept of “The Sublime”, wherein awe and wonder combine with fear and trepidation to produce times of transcendence, comes from Edmund Burke in the mid 18th century. This concept became the cultural Zeitgeist underpinning art and literature well into the 19th century. John Martin was the youngest and least eccentric of the three Martin brothers. He came to London in 1806, and made his name as a painter of very large, dramatic and vibrant depictions of biblical or mythical catastrophes (the “apocalyptic sublime”). In the 1810s and 1820s, his vast canvases, such as that of Vesuvius erupting, were hugely popular and widely exhibited but were snubbed by art critics. He was a contemporary of Gideon Mantell who asked Martin to paint a visualisation of *Iguanodon* country for his best-selling book *The Wonders of Geology*. This book ran to several editions, and John Martin’s image would have reached a huge public.

He also provided the frontispiece for Thomas Hawkins’ 1840 *The Book of Great Sea Dragons*. However, his images were aggressive, nasty and horrible to such a degree that his frontispiece for Richardson’s 1842 *Geology for Beginners* was replaced by that of another painter in the second edition. John Martin’s work is featured in Max Adams’ 2010 book *The Prometheans: John Martin and the generations that stole the future* and, from September 2011 to January this year, there was an exhibition of his work at the Tate Britain Gallery in London.



Martin Whyte then spoke about Samuel Beckles (1814-1890) who, in 1845, retired from his life as a lawyer in London and moved to St Leonards-on-Sea in Sussex where he began a collection of Wealden and Purbeck fossils. He collected from Sussex, Dorset and the Isle of Wight and, in the 1850s, published several papers mainly on fossil footprints. These included the trifold markings from localities near Hastings and Bexhill which are now known to be footprints of iguanodontid dinosaurs. Elected to the Geological Society in 1854 and the Royal Society in 1859, Beckles was described as a complex, intelligent intellectual but who was driven for status rather than science.



Essex is not renowned for its interesting geology, and its geological heritage has mostly gone but using historic images from sources including archaeological excavations, archives, tokens, topographical accounts, maps, engravings, paintings, postcards, catalogues and photographs, **Bill George** showed how it is possible to reconstruct long-vanished sites and geological events. For example, fine geological sections such as at Harwich, Walton-on-the-Naze, Frinton, Clacton, Shoeburyness, Southend and Purfleet, which have been obscured by extensive coastal defences or been eroded away, were reconstructed using topographical accounts, engravings, paintings and old picture postcards; it is hard to believe that there were once massive Chalk cliffs at Purfleet (seen in an

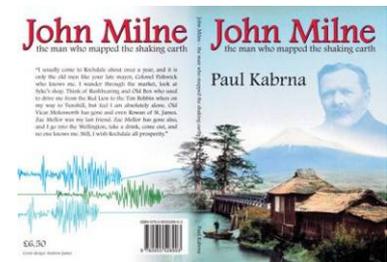


illustration of 1807). The destruction caused by the 4.7 magnitude earthquake that affected Essex in April 1884 was vividly demonstrated through contemporary newspaper cuttings and photographs. Commercial publicity material, postcards, paintings, engravings, archives, maps, and such things as coroners' reports, were used to record the large-scale mineral (chalk, clay/gravel) extraction which has taken place in Essex since medieval times; gravels at Ilford, Essex have yielded the finest example of a mammoth skull. The talk was based on work being undertaken as part of the GeoEssex Local Geodiversity Action Plan which, as part of the UK Geodiversity Action Plan, emphasizes "gathering and maintaining information on our geodiversity", and targets the "audit and maintenance of records of geodiversity in public collections, including specimens, photographs and other geodiversity ephemera".



The last talk before lunch was by **Philip James** who shared his enthusiasm for collecting Victorian geology books by showing images of some of the fine bindings and excellent original cloth copies from his personal geological library of several hundred volumes. He admitted that it was the decorated covers and spines of these books rather than their scientific content that attracted him.

After lunch, **Paul Kabrna**, with a Lancashire accent probably much like that of his subject, attempted to summarize in 30 minutes the life and work of Rochdale-born John Milne (1850-1913), father of modern seismology, as recounted in his 2007 book *John Milne the man who mapped the shaking earth*. Copies of the book were for sale at the meeting and happily signed by the author who pointed out that, in the book (bottom p.15), Milne's journey from Hull to Japan is incorrectly stated as 11 months instead of seven. Next year is the centenary of Milne's death and to coincide with this, Milne's great nephew in Melbourne, Australia is releasing a DVD about his famous (at least to seismologists) relative.



The geologist, writer and explorer John Gregory (1864-1932) was the subject of the next talk by **Bernard Leake** who last year saw the publication of his comprehensive Geological Society Memoir *The Life and Work of Professor J. W. Gregory FRS (1864-1932)*. This memoir was available at a discounted price for those attending the meeting. As with the previous talk, the compression of the subject's life into a 30 minute talk proved difficult. As a young man in London, Gregory walked everywhere, didn't smoke or drink, worked all day, attended classes at Birkbeck College in the evenings before walking home, eating at midnight and then doing a further two hours work.

This level of hard work (18-20 hours a day) and industry seems to have stayed with him throughout his life. He worked in many parts of the world and was a prolific author producing more than 400 publications including 33 books. These publications reflect the breadth of Gregory's scientific work covering topics such as petrology, palaeontology, glaciology, the structure of Asia, anthropology and archaeology, as well as popularizing geology. In 1900, he was proposed by Sir Archibald Geikie for the Chair of Geology and Mineralogy at Melbourne, Australia which he held until 1904; from 1901, he was simultaneously Director of the Geological Survey of Victoria. In 1904, he returned to Britain to take the first Chair of Geology at the University of Glasgow. He was President of the Geological Society in 1928-1930. His action-packed and extraordinarily productive life came to a dramatic end in Peru when he drowned in the headwaters of the Amazon whilst traversing the Andes.

Gareth Dyke who should have then spoken about Franz Nopcsa (1877-1933), "dinosaur baron of Transylvania" had to withdraw because of the birth of his first child on the previous day. His place was taken by **John Henry** who entertained the meeting with an illustrated review of some popular

geological maps, starting with William Smith's (1815) and George Bellas Greenough's (1819) maps which are displayed at the Geological Society premises in Burlington House. Other maps discussed included the incomplete series of county maps by Smith, John Phillips' maps of the British Isles, Yorkshire and England & Wales (hand-coloured), various editions of James Knipe's 1837 to 1865 maps mostly of England & Wales, Murchison & Geikie's 1864 map of Scotland (an early example of colour printing) and Fraser's 1859 map of Ireland. Also shown were Reynolds' (1851) geological diagrams – a teaching set on A4 size cards, Reynolds'/Stanford's geological atlases with fold-out maps and descriptions, and Cassell's Encyclopaedia of the 1890s with fossil illustrations and geological section.



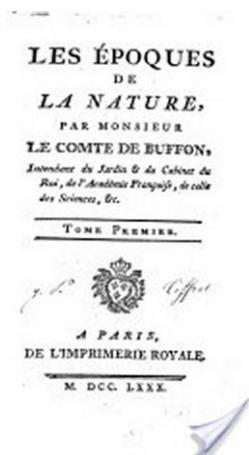
Before the afternoon tea break, **Peter Forey** gave the first keynote presentation entitled '*Old Four Legs*': *scientists, coelacanths and controversies*. His story began in December 1938 when an unusual fish measuring some 1.5 m and weighing 60kg was caught off the coast of South Africa. The specimen had heavy plates on its head, a sail-like dorsal fin, a broad fan-like tail with a tuft and paired fins on fleshy stalks. Marjorie Courtenay-Latimer of East London Museum in South Africa contacted James Leonard Brierley ("J L B") Smith who identified it as a coelacanth which he named *Latimeria chalumnae*. The coelacanth was thought to have been extinct for about 75 million years but was of great interest because it was thought to be a direct link with tetrapod ancestors – a 'living fossil' and a 'missing link'. Scientists argued against Smith that it was just a deep sea fish.



Prof. J. L. B. Smith with coelacanth 29/12/1952
(Photo: SA Institute for Aquatic Biodiversity)

Then, in 1952, another specimen was caught in the Comores Archipelago off the coast of Madagascar. To Smith's dismay, only French scientists were allowed to work on the specimen as it had been caught in French waters; eventually, Smith committed suicide in 1968. Since then about 200 specimens have been caught around the Comores and they have been the subject of much further research, notably by Professor Hans Fricke using a submersible. In the 1970s, large eggs were found inside a female and in 1975, a coelacanth donated to the Americans by the French was cut open to reveal five 'pups'. Further Indonesian finds in 1998 proved that two species existed but this led to disagreements between the French and the Americans, and fraud, perpetrated by the French, which was exposed in the journal *Nature*. Lots of questions still remain.

perpetrated by the French, which was exposed in the journal *Nature*. Lots of questions still remain.



After the tea break, **Jan Zalasiewicz** gave the second keynote address which explored the case for a new geological epoch – the Anthropocene - distinguished from the rest of the Holocene by the domination of human influence. From a historical perspective, the dawn of this idea goes back to Georges – Louis Leclerc, Comte de Buffon (1707-1788) and his well written, but never translated into English, book *Les époques de la Nature*. In his seventh and last epoch, mankind leaves a significant imprint on history. After the French Revolution, the idea grew but it was a one-page paper in *Nature* in January 2002 by the Nobel prize-winning atmospheric chemist Paul Crutzen that really fired up the current more earnest debate assessing the merits of the Anthropocene which has been used as if a formal name since 2003/4. The supporting case for the recognition of a distinct epoch can be made on mineralogical, lithostratigraphical and chemostratigraphical grounds as well as

palaeontological (e.g. skyscrapers as enormous trace fossils) and biological/ecological (e.g. humans and domesticated animals = c. 97%; wild animals etc = c. 3%), and could we be on the brink of the sixth mass extinction?

Following on, **Tony Brown** played devil's advocate. Whilst acknowledging the factual evidence presented by Jan Zalasiewicz, he argued that changes at least as big have occurred already within the Holocene. If Marine Isotope Stage 1 was significantly different from previous marine isotope stages, then a new epoch might be justified but if so, is it possible to recognize a persistent and sustainable basal boundary in the geological record? The debate continues.



After a short break, **David Greenwood** brought us back to more prosaic matters with an account of the role of geologists in the Sheffield-based United Steel Company Ltd (1918-1967). The steel industry is a vast consumer of raw materials including iron ore, coking coal, fluxes (limestone and dolomite), chromium, manganese, molybdenum, nickel and silicon. Like some other steel companies, United Steel had iron ore and other mining interests, as well as a number of collieries. In 1946, it therefore set up a Minerals Section employing a number of geologists in Rotherham. As well as dealing with raw material supply, the geologists were also involved in some of the on-going structural engineering problems associated with the steelworks, in particular foundation design. The geologists established the local succession using shaft sections from local collieries, and made 3D models which solved some correlation problems. The collaborative work that took place between the geologists and civil engineers was unusual for the time and pre-dated the formal introduction of geotechnical mapping as defined by the Geological Society's Engineering Group Working Party (1972) by some 25 years.

The development of Earth Sciences at the Open University was the subject of the final talk by **Jane Randle** who herself got a place on the OU's Science Foundation Course in September 1970. From Harold Wilson's original idea in 1963 of a 'University of the Air' until the OU received its Royal Charter in June 1969, things were all very political. The first Chancellor, Walter Perry, had to ensure the OU's survival. In January 1969, Mike Pentz was appointed Dean of Science and, in April 1969, Ian Gass was appointed to the Chair of Geology, and insisted on appointing R C L (Chris) Wilson as his assistant. Within the Science Foundation course, there were 34 component units but the idea of including history of science was rejected. Ian Gass changed the name of his department from Geology to Earth Sciences and in January 1970, he was joined by Peter Smith, a geophysicist. *Understanding the Earth* was written as a textbook to cover the Earth Science component of the Science Foundation Course (8 course units); it suited everyone and sold 100,000 copies. The initial years of the OU coincided with the recognition and widespread acceptance of the theory of plate tectonics, and continental movement, sea floor spreading and plate tectonics were prominently featured as course topics. Unfortunately, the speaker was beaten by the clock but finished with two video clips of early OU programmes featuring Ian Gass, the first demonstrating seismic wave recording, and the second, fieldwork on Skye. The archives at the OU include a Media Library which holds copies of all the broadcasts.



Ian Gass (Photo: OU)

The meeting closed at 6.45pm; a long day but an entertaining one with a great variety of subjects and presentational styles. Congratulations to Tony Brook for bringing the programme together and for his hard work in the organisation. We look forward to another historical 'pot-pourri' in three years time!

IN THE FOOTSTEPS OF SIR ARCHIBALD GEIKIE

Barrie Chacksfield¹ reports on HOGG's joint meeting with Haslemere Educational Museum.

A joint meeting of HOGG and Haslemere Educational Museum was held at the Museum, 78 High Street, Haslemere, Surrey GU27 2LA, UK on April 13th 2012.

The meeting was very well attended with over fifty people present. On arrival, attendees were asked to sign in using either a quill or nib pen and ink which was fun but daunting at the same time. Most of Geikie's thousands of letters had been written with his nib pen; for the inexperienced, it was quite difficult enough to write our names with an even and unblotted line! This was a nice touch and set the tone for a relaxed but informative meeting.



A fine display of items from the Sir Archibald Geikie Archive was on show in the Education Room. This included several of his well known text books, previously unseen copy letter books, and many wonderful examples of his numerous sketches made at home and abroad. A large painting of Glen Sannox on Arran was exhibited alongside his framed retirement gift from the Geological Survey which shows the signatures of most of his contemporaries. Also on view were several items used during his time in the field including his geological hammer in its case, his compass clinometer, and several field notebooks containing many fine field sketches. Two early examples of his field mapping were shown - the 1859 1 inch to the mile geological map of the Edinburgh district with accompanying memoir, which he mapped and co-wrote with H. H. Howell, and the Kinross Sheet (1867) mapped with his brother James.

The series of talks opened with an introduction and warm welcome from Bernard Coe, President of Haslemere Educational Museum, and Professor Richard Moody (on behalf of HOGG). This was followed by an informative account of the Geikie Archive by John Betterton and Julia Tanner of the Museum. From its initial discovery in the Museum's loft, where it had lain undiscovered for decades, through to its ongoing collation and future conservation, they gave an insight into how much painstaking hard work has been undertaken by the



Museum and how much more needs to be done. They welcomed the enthusiasm of the HOGG audience. To fund future conservation work on the Archive, which has huge potential for historians of geology, the Museum had recently received a grant from Statoil (U.K). Several images were shown of Geikie's artwork, including watercolours, pencil and wash, and drawings from field notebooks, together with selected correspondence from his copy letter books, personal photographs and memorabilia relating to his many honours awarded over 46 years of public service.

A fascinating insight into Archibald Geikie's character, how he interacted with staff of the Geological Survey (including his friendship with Benjamin Peach and John Horne), and his involvement in the Highlands Controversy was provided by John Diggens (D.I.G.R.S. Ltd, Haselmere) using extracts from Geikie's copy letter books. Geikie's sense of humour was demonstrated by various cartoons from his field notebooks.



The lunch interval provided an opportunity to visit Geikie's grave at St Bartholomew's churchyard and a large group of HOGG members subsequently gathered around his gravestone.

After lunch, two talks were given prior to the tea interval. Dr Mike Romano described Geikie the artist through a series of illustrations of his many fine landscape watercolours and field sketches. He showed just how accomplished Geikie was as an artist. This was followed by an account of a controversial walk from Kinlochewe to Loch Broom undertaken in the 19th century by the young Archibald Geikie and subsequently re-enacted in 2001 by six geologists including Rob Butler (Kings College Aberdeen) in an attempt to see the geology through Geikie's eyes - a task now made more possible through the notes and sketches from his archive.

Two further talks followed the tea interval. The first was given by Professor John Dewey who provided a detailed account of Geikie's involvement in the Highlands Controversy from his initial involvement in 1860, when he accompanied Murchison on a tour of the North-West Highlands, right through to the publication of the Geological Survey's 1907 memoir *The geological structure of the north-west Highlands of Scotland* which was the culmination of the superb work undertaken by the survey geologists under the direction of Geikie. The final talk was an account of Geikie's influence in British hydrogeology from 1870 to 1914 given by John Mather. This was followed by a concluding summary of the meeting by John Diggens.

Following the talks, there was a "wine interval" which provided the opportunity to socialize and reflect on the day's events. This was followed by a most enjoyable 'HOGG' roast in the grounds of the Museum with more wine and a barrel of local beer. Throughout the day, the Museum was open to view the many exhibits on display including the comprehensive fossil collection, the natural history section, and further Archibald Geikie archive material including many more sketches and notebooks, and his presentation retirement gift from his students.

All told, a very successful and enjoyable meeting. The hospitality and hard work of the museum staff was very much appreciated.

¹Barrie Chacksfield (e mail b.chacksfield@googlemail.com)

Photos © Barrie Chacksfield

FUTURE HOGG EVENTS

- * **APPRECIATING PHYSICAL LANDSCAPES: GEOTOURISM 1670 -1970**
22nd – 23rd October 2012
Burlington House, Piccadilly, London
Geological Society-supported meeting.
See pages 16-18 of this newsletter.

 - * **PILTDOWN 100 YEARS ON**
Tuesday 18th December 2012
Burlington House, Piccadilly and Natural History Museum , South Kensington, London
Geological Society-supported meeting.
This meeting will celebrate the centenary of the presentation of the original Piltdown paper at the Geological Society on 18th December 1912.
Details on page 19 of this newsletter.

 - * **2013 INHIGEO CONFERENCE**
MANCHESTER
Monday 22nd – Sunday 28th July 2013
All HOGG members are invited to attend or participate in the 2013 INHIGEO Conference which will take place as part of the 24th International Congress of History of Science, Technology and Medicine (iCHSTM). Further details on pages 20-21 of this newsletter.

 - * **METALLIFEROUS MINING IN THE SOUTH-WEST AND ITS LEGACY**
November 2013

 - * **GEOLOGY IN THE COURTYARD**
Date to be advised.
Burlington House, Piccadilly, London
A look at geological aspects of and historical links between the learned societies (Antiquaries, Astronomical, Chemistry, Linnean) and Royal Academy of Arts which are based with the Geological Society in the Burlington House complex.
-

HISTORY OF GEOLOGY GROUP **Appreciating Physical Landscapes: Geotourism 1670-1970**
22nd-23rd October 2012



Monday 22nd October 2012
Burlington House, Piccadilly, London

PROVISIONAL PROGRAMME

08.30 Registration and distribution of conference packs – Coffee and Biscuits

MORNING SESSIONS

09.20: Welcome and Introduction: Thomas A. Hose (Conference Convenor)

Session M1

- 09.30: KEYNOTE:** *Reason to Believe: Dragons, New Science and Public Perceptions of the Prehistoric World* Prof. David Norman (Department of Earth Sciences, University of Cambridge)
- 10.10: Eugene von Guérard: a geognostic landscape painter in Australia** Ruth Pullin (National Gallery, Australia)

10.30 - 11.00: Poster Exhibition - Coffee and Biscuits

Session M2

- 11.00: Geotourism as documented and photographed by the Geologists' Association from 1858** Jonathan Larwood (Geologists' Association/Natural England)
- 11.20: The role of Local Societies in the Early Geotourism Movement, the Chester Society of Natural Science: a Case Study** Cynthia Burek¹ & Thomas A. Hose² (¹Centre for Science Communication, University of Chester; ²School of Earth Sciences, University of Bristol)
- 11.40: Dovedale and J W Jackson's legacy** Ros Westwood (Derbyshire Museums)

12.00 - 13.00: Luncheon (*delegates to make own arrangements*)

AFTERNOON SESSIONS

Session A1

- 13.00: KEYNOTE:** *Appreciating geology and the physical landscape in Scotland: from the 'tourism of awe' to 'experiential re-engagement'* Prof. John E. Gordon (School of Geography and Geosciences, University of St Andrews)
- 13.40: Visitors to the Northern Playgrounds: Tourists and Some Science from North Norway** Brian Whalley (University of Sheffield)
- 14.00: From tourism to geotourism, a glance to the French northern alps: historical cases** Nathalie Cayla (Laboratoire EDYTEM UMR CNRS-Université de Savoie, France)

14.20 -14.30: Comfort Break

Session A2

- 14.30: Appreciating Loess Landscapes through History: the Basis of Modern Loess Geotourism in the Vojvodina Region of North Serbia** Djordjije A. Vasiljević¹, Tin Lukić¹, Slobodan B. Marković¹, Thomas A. Hose², Miroslav D. Vujičić¹, Biljana Basarin¹ (¹Department of Geography, Tourism and Hotel Management, Faculty of Sciences, University of Novi Sad,

Serbia; ²School of Earth Sciences, University of Bristol)

14.50: *From the History of Geotourism and Geological Monuments of Russia (an Example of Geological Monuments of the Leningrad region)* Maria Tsinkoburova (Department Historical and Dynamic Geology Faculty of Geological Prospecting, St. Petersburg Mining University, Russia)

15.10: *Rediscovering geoh heritage, reinventing geotourism – 200 years of experience from the Sudetes, Central Europe* Piotr Migoń (Department of Geography and Regional Development, University of Wrocław, Poland)

15.30 - 16.00: Poster Exhibition – Coffee and Biscuits

Session A3

16.00: *Thomas Compton and the Hirnantian rocks of North Wales* Keith Nicholls¹ & Cynthia Burek² (¹Department of Biological Sciences, University of Chester; ²Centre for Science Communication, University of Chester)

16.20: *Thomas Sopwith (1803-1879) – Guide and Tourist* Dave Greenwood (Kirkaldy Society, Queen Mary College, London)

16.40: *In the Shadow of Inspiration; Canada's National Parks and Beyond* Julian Ashbourn

17.00: Closing ceremony: John Henry (HOGG Chair)

17.15 – 18.00: Poster Exhibition Discussion Session

CONFIRMED POSTERS

- *Adam Mickiewicz and hills of Vilnius and Kaunas – a poet's search for inspiration* Simonas Saarmann (Vilnius University, Lithuania)
- *Towards a History of Geotourism in Serbia: Marking Moments in Time* Miroslav D. Vujičić¹, Djordjije A. Vasiljević¹, Tin Lukić¹, Slobodan B. Marković¹, Thomas A. Hose², Biljana Basarin¹ (¹Department of Geography, Tourism and Hotel Management, Faculty of Sciences, University of Novi Sad, Serbia; ²School of Earth Sciences, University of Bristol)
- *The Influence of Geology on the Work of Clough Willams-Ellis at Portmeirion, North Wales* Jonathan Wilkins & Keith Nicholls (North Wales Geology Association)
- *Geotourist by Chance: Dante's Commedia Between Politics, Religion and Geomorphology* Antonio Raschi (CNR – IBIMET, Firenze, Italy)
- *Antonio Stoppani: a life of geology, travel and science popularisation* Matteo Garofano
- *From Geological Travels between the 18th and the 19th Centuries to Modern Geotourism: the case-study of the geo-historical trip of Carlo Amoretti in the Pre-Alps.* Libera Paola Arena (Università degli studi di Bari, Italy)
- *The Cheesewring: much more than just another granite tor* John Macadam (Camborne School of Mines, University of Exeter)
- *Geology and Geologists in the 19th Century field in Southern England* – Thomas A. Hose (School of Earth Sciences, University of Bristol)

18.00 - 19.00: Wine Reception (in Lower Library)

19.00: Depart for Conference Dinner (optional)

Tuesday 23rd October 2012
FIELD EXCURSION

PROGRAMME

- 09.30** Meet at St Pancras Station to entrain for Ramsgate.
- 11.00** Arrive at Ramsgate Station for taxis and start of excursion to examine local coastal geology.
- 13.00** Snack Luncheon; return to Ramsgate Station.
- 14.00** Margate Station for start of excursion to examine local historical geotourism sites.
- 16.00** Finish at Turner Contemporary for afternoon tea.
- 17.00** Evening free (and hence return to London by 19.00) or possible return via Canterbury and evening walk around town.



All attendees will receive a souvenir excursion booklet and a luncheon pack; afternoon tea will also be provided. Some (3-5 miles) walking on roads, on slightly rough terrain, and along the beach is needed to see all of the excursion localities.

**AN ON-LINE BOOKING FORM WITH FURTHER DETAILS
WILL BE ON THE GSL WEBSITE
LATER THIS MONTH**

CONVENOR: Tom Hose
e mail: gltah@bristol.ac.uk

**HISTORY
OF
GEOLOGY
GROUP**

**‘PILTDOWN: 100 YEARS ON’
Geological Society, Burlington House, Piccadilly, London
TUESDAY 18th DECEMBER 2012**

*A meeting to mark the centenary of the reading of the
Piltdown Man paper at the GSL on 18th December 1912*



PROGRAMME

MORNING

10.00 - 13.30 Tours of the Natural History Museum's "Piltdown Centenary Exhibition" of specimens, manuscripts and papers in the NHM Library.

Three tours will be held at 10.00, 11.10 and 12.20. They will be led by Karolyn Schindler and Paul Cooper; each tour will be restricted to a maximum of 15 delegates. There will be a charge of £8.00 per person.



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AFTERNOON

12.00 – 13.30 Group viewings of the Piltdown painting at the GSL.

Conference

14.00 – 14.10 Welcome/Introduction

14.10 – 14.45 Anne O'Connor: *Piltdown and the Geological Society*

14.45 – 15.20 Dave Martill: *Arthur Conan Doyle and the Piltdown Forgery*

15.20 – 15.55 Miles Russell: *Charles Dawson: a career fabricating prehistory*

15.55 – 16.15 TEA

16.15 – 16.50 Christopher Dean: *The Anatomy of the Forgery*

16.50 – 17.30 Chris Stringer: *The Piltdown Forgery in context*

17.30 – 18.00 Questions/discussion

18.00 – 19.00 RECEPTION

19.00 - DINNER

Registration fees: GSL Fellows, HOGG, GA and OUGS members
Students
Others



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**COSTS
AND FEES
TO BE
ADVISED**

**A REGISTRATION FORM WILL BE AVAILABLE ON THE HOGG
WEBSITE AND IN THE NEXT (OCTOBER) NEWSLETTER.**

Convenor: Prof. Richard T J Moody
e mail: rtj.moody@virgin.net



INHIGEO CONFERENCE MANCHESTER



2013 INHIGEO CONFERENCE

All HOGG members are invited to attend or participate in the 2013 INHIGEO CONFERENCE which will take place as part of the 24th International Congress of History of Science, Technology and Medicine (iCHSTM) to be held in Manchester from **Monday 22nd to Sunday 28th July 2013**. For further details see <http://www.ichstm2013.com/>

iCHSTM is the largest event in the history of science and takes place every four years. The 2013 INHIGEO CONFERENCE is being organized by the HOGG committee working with several UK INHIGEO members. We have submitted proposals for two symposia and anticipate hearing whether they have been accepted very shortly:

1. ***Geologists in the Field***. Convenors: Leucha Veneer (UK) and Martina Kölbl-Ebert (Germany). This symposium will explore the history of geological and geophysical fieldwork, examining the work of individuals, research groups and commercial explorers in all areas of the world, from all periods of history.
2. ***Geology in Art and Literature***. Convenors: Ralph O'Connor (UK) and Noah Heringman (USA). This symposium will explore the historical relationship between the Earth sciences and the production of art and literature around the world, primarily from the late eighteenth century to the present day.

In addition, we will be running three field trips:

1. **18-21 July, 2013. *The Silurian of 'Siluria' and the idea of a Palaeozoic Era***. Leaders: Martin Rudwick and Hugh Torrens. This trip will be based for three nights at the Longmynd Hotel <http://www.longmynd.co.uk> **30 places maximum.**
2. **Mid-conference week. *Buxton Spar and Spa***. Leader: Tom Hose.
3. **27-29 July, 2013. *Ruskin's Geology***. Leaders Alan Bowden and David Oldroyd. This trip will be based for two nights at the Windermere Hydro Hotel: <http://www.thehydro.co.uk> **35 places maximum.**

Submitting abstracts

You may submit an abstract to **one** symposium only.

In the first instance abstracts must be submitted to individual symposium organizers (not the Congress). Once you have been informed that your abstract has been accepted for that symposium, you will then be required to submit it to the Congress. If your abstract is rejected from the symposium, you can still submit it direct to the Congress.

Further information

Full details of registration costs, symposia and abstract submission process, and field trips will be in the second circular which will be sent out by e-mail at the beginning of July 2012. In the meantime, please refer to the schedule of key dates on the next page.

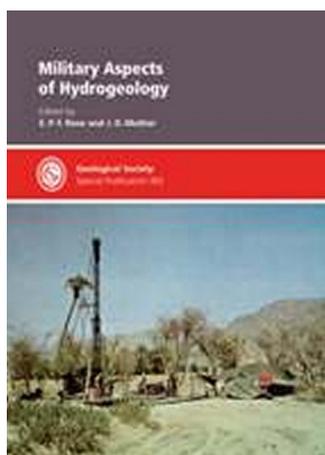
If you think we do not have your e-mail address or if you wish to be sent this information by post, please contact the convenor, Dr Cherry Lewis, at Primrose Cottage, Forge Hill, Lydbrook, Gloucs GL17 9QT E-mail: cherry.lewis@bristol.ac.uk



INHIGEO CONFERENCE KEY DATES

30-Jun-12	Decisions on accepted symposia announced
01-Jul-12	Second circular confirming accepted symposia and requesting abstracts. Will include full field trip information.
01-Oct-12	Deadline for submission of abstracts to symposia organizers
15-Nov-12	Latest date for decisions on accepted/rejected abstracts
30-Nov-12	Deadline for submission of abstracts to Congress
1-Dec-12	Registration opens for field trips on first-come first-served basis for speakers at Inhigeo conference and Inhigeo/HOGG members
1-Mar-13	Deadline for field trip registration by speakers at Inhigeo conference and Inhigeo/HOGG members. After this date any spare places will be offered to Congress participants.
31-Mar-13	Congress registration opens
01-Apr-13	Third circular and full programme
21-May-13	Deadline for accommodation reservations
01-Jun-13	Deadline for full payment of field trips
01-Jul-13	Final date for registration
22-Jul-13	Congress opens
28-Jul-13	Congress closes

BOOK NOTES



Military aspects of hydrogeology

E P. F. Rose and J. D. Mather (eds). 2012. The Geological Society. Geological Society Special Publications, 362, 376pp.

ISBN 1-86239-340-0 or 978-1-86239-340-0 (hardback)

List price £110 (GSL fellows £55, corporate affiliates £80, other societies £66)

This book stems from the joint HOGG, GSL Hydrogeological Group and the Institution of Royal Engineers meeting *Military Uses of Hydrogeology: Past and Present* which was held at Burlington House in November 2009.

Historically, it gives examples of the influence of groundwater on battlefield tactics and fortress construction; describes how groundwater was developed for water supply and overcome as an obstacle to military engineering and cross-country vehicular movement by both sides in World Wars I and II; and culminates with examples of the application of hydrogeology to site boreholes in recent conflicts, notably Afghanistan. Examples of current research described include hydrological model development; the impact of variations in soil moisture on explosive threat detection and cross-country vehicle mobility; contamination arising from defence sites and its remediation; privatization of water supplies; and the equitable allocation of resources derived from an international transboundary aquifer.

CONTENTS AND AUTHORS

- Preface
- Mather, J. D., Rose, E. P. F. *Military aspects of hydrogeology: an introduction and overview.*
- Younger, P. L. *Crouching enemy, hidden ally: the decisive role of groundwater discharge features in two major British battles, Flodden 1513 and Prestonpans 1745.*
- Mather, J. D. *Water supply to Britain's eastern coastal defences in the 18th century and the work of Sir Thomas Hyde Page (1746-1821).*
- Rose, E. P. F. *Groundwater as a military resource: pioneering British military well boring and hydrogeology in World War I.*
- Doyle, P. *Examples of the influence of groundwater on British military mining in Flanders, 1914-1917.*
- Willig, D., Häusler, H. *Aspects of military hydrogeology and groundwater development by Germany and its allies in World War I.*
- Rose, E. P. F. *Groundwater as a military resource: development of Royal Engineers Boring Sections and British military hydrogeology in World War II.*
- Mather, J. D. *War as a catalyst for change: groundwater studies in the Geological Survey of Great Britain before 1950 and the impact of two World Wars.*
- Greenwood, D. A. *Soil and water: research by the British Army's Committee on Mud Crossing Performance of Tracked Armoured Fighting Vehicles in World War II.*
- Willig, D., Häusler, H. *Aspects of German military geology and groundwater development in World War II.*
- Robins, N. S., Rose, E. P. F., Cheney, C. S. *Basement hydrogeology and fortification of the Channel Islands: legacies of British and German military engineering.*
- Gellasch, C. A. *Hydrogeological support to United States military operations, 1917-2010.*
- Dow, R. I. L., Rose, E. P. F. *Hydrogeology in support of British military operations in Iraq and Afghanistan 2003 to 2009.*
- Willig, D. *Hydrogeology and the Bundeswehr: water supply to German armed forces in Somalia, Kosovo and Afghanistan between 1993 and 2010.*

- Downer, C. W., Ogden, F. L., Martin, W. D., Harmon, R. S. *Opportunity-driven hydrological model development in US Army research and development programs.*
- Howington, S. E., Peters, J. F., Ballard, J. R. Jr, Eslinger, O. J., Fairley, J. R., Kala, R. V., Goodson, R. A., Price, S. J. Hines, A. M., Wakeley, L. D. *Using computer simulation to explore the importance of hydrogeology in remote sensing for explosive threat detection.*
- Priddy, J. D., Berney IV, E. S., Peters, J. F. *Effect of near-surface hydrology on soil strength and mobility.*
- Miller, J., Foran, C. *Development of cleanup technologies for the management of US military installations.*
- McCaffrey, M. M., Bullock, C. *Hydrogeology of British military sites: Project Aquatrine.*
- Mansour, M. M., Peach, D. W., Hughes, A. G., Robins, N. S. *Tension over equitable allocation of water: estimating renewable groundwater resources beneath the West Bank and Israel.*

THE GEOLOGICAL SOCIETY LIBRARY'S "SPONSOR-A-FISH!" PROJECT

*An update on the GSL Library's project to conserve and digitize one of its most important collections
(see HOGG Newsletter 43).*



The Geological Society Library's appeal to conserve and digitize nearly 2000 drawings from the fossil fish collection of Louis Agassiz (1807 – 1873) continues. Through the generosity of Fellows, Friends and members of the public from around the world, over £6000 has been raised, a brilliant achievement for the first year of the appeal and one it is hoped to build on in the year to come. Many fish were sponsored in memory of friends or relatives who had a particular interest in fossil ichthyology, while other donations were made as birthday, retirement and even wedding gifts (on such occasions a certificate is provided). There is still some way to go, however, as £20,000 is required to fully clean, conserve and digitize all of the drawings, making them

available to new groups of researchers for generations to come. If you would like to sponsor a fish for £20, please send a cheque to the Library, or call 020 7432 0999 to pay by card. Larger donations are greatly welcomed.

Lithographic Prints for Sale

The Library is also giving you a rare opportunity to purchase one of the original lithographic prints from a copy of Agassiz's *Recherches sur les Poissons Fossiles*, which have been kindly offered by a Fellow of the Society to raise funds for the appeal. These lithographs were created from the original watercolours which the Society seeks to conserve and digitize. Please bear in mind that these are original lithographs from circa 1840 and show some natural wear and tear due to their age. Why not view them online now at www.geol soc.org.uk/sponsorafish and become the proud owner of a slice of fossil fish history?



INTERNET ARCHIVE (archive.org)

*Some HOGG members may not be aware of the 'Internet Archive'.
Here, Peter Austen¹ sings its praises.*

Over the past couple of years, whilst jointly researching and writing a contribution for the Palaeontological Association's *Field Guide to Fossils* No. 14 on English Wealden Fossils (edited by David Batten 2011), and assisting with cross-checking bibliographic references for the whole volume, I found certain websites invaluable – in fact, without them, it would not have been possible to achieve the detail and accuracy the Field Guide required.

One of these sites is the 'Internet Archive' (archive.org), a site from which historic books can be accessed and, in most cases, downloaded. One of the many aims of the *Field Guide* was to provide author references for all the species included, making the book a useful research tool for anyone wishing to investigate further. I was involved in the chapter on Wealden plants where a number of these author references date back to the 19th century when many fossil plant species were first erected; it was often necessary for me to refer to some of these works. This was also necessary when checking the references for the rest of the volume. Not so long ago, that would have necessitated a visit to a University library or, in the case of rarer works, the Natural History Museum or even the British Library which could be a costly and time-consuming affair. However, most of the 18th and 19th century works (and more than 90% of those I required) are now available on the 'Internet Archive', and the numbers are increasing daily.

Amongst those included are some of the classic works on geology and palaeontology: the Sowerby's *Mineral Conchology* (all 7 volumes); d'Orbigny on molluscs; Agassiz (all 5 volumes of his classic work on fossil fish including plates for volumes 1-4); Brongniart, Sternberg, Lindley & Hutton, Seward and Stopes on plants; Owen and Mantell on dinosaurs and other vertebrates; Handlirsch on insects; Topley (on the Weald); Giebel (on the Weald); Dixon (on Sussex); Phillips (on Yorkshire) and Plot (on Oxfordshire 1704). Also available are 19th century volumes of geological and palaeontological journals: *Transactions* and *Quarterly Journal of the Geological Society*, *Proceedings of the Geologists' Association*, *Monographs of the Palaeontographical Society*, *Geological Magazine*, *Palaeontographica*, many of which include some of the early classic papers in geology and palaeontology.

It is a truly remarkable resource and extremely useful as, in a lot of cases, the online digital versions of the works are fully searchable. For works that are not searchable, the 'Internet Archive' offers a 'djvu.txt' version which is a text listing only and allows you to search for whatever term you are after, e.g. the name of a quarry – this option is available through the HTTP portal.

¹ Peter Austen (e mail p.austen26@btinternet.com).

Reproduced, with permission and minor amendment, from the *Hastings and District Geological Society Journal*, Vol. 17, December 2011, p. 45.

A NOTE ON JOHN MARTIN AND HIS GEOLOGICAL AND ENGINEERING INTERESTS

David Earle²

Tony Brook's HOGG Open Meeting in March this year, reported elsewhere in this newsletter, included a presentation by the convenor about the artist John Martin (1789-1854) and his geological illustrations. Following the meeting, I coincidentally came across a biography of Martin by Thomas Balston¹ which included an account of Martin's wider geological and civil engineering interests. These notes are taken directly from the Balston volume.

Martin apparently devoted two-thirds of his time and energy from 1827 until his death to the outstanding 19th century metropolitan social and engineering problem of water supply and waste removal. The nature of the problem was laid out in wonderfully colourful form in a committee report of 1836:



Portrait of John Martin by Henry Warren 1839 (Wikipedia)

“The Thames, to this day, receives the excrementitious matter from nearly a million and a half of human beings; the washings of their foul linen; the filth and refuse of many hundred manufactories; the offal and decomposing vegetable substances from the markets; the foul and gory liquid from slaughter-houses, and the purulent abominations from hospitals and dissecting rooms, too disgusting to detail. Thus that most noble river, which has been given to us by Providence for our health, recreation and beneficial use, is converted into the Common Sewer of London, and the sickening mixture it contains is daily pumped up with the water as a common beverage for the inhabitants of the most civilised capital in Europe”

Martin worked on and submitted a sequence of plans for the improvement of London's water supply and sewage disposal which combined the aesthetic with the engineering. These plans were seriously considered by bodies such as the Select Committee on Metropolitan Sewers, the Institute of British Architects, The Royal Institution, the Committee on Metropolis Water and the Institution of Civil Engineers. These assessments of Martin's plans involved practical engineers and scientists, such as William Matthews author of *“Hydraulia, An Account of the Waterworks of London”*, Wheatstone, Faraday and Thomas Sopwith (who commented that *“great genius is to madness close allied”*), as well as members of the artistic community such as Turner.

In 1846, the House of Commons passed the Metropolitan Sewage Manure Company Bill of which Martin was the projector, giving the company power to build between high and low water marks a great sewer to drain district sewers. By 1852, the company had failed and Martin had ceased to be a director.

Whilst the water problems of the metropolis were Martin's main concern, he had involvement in other geologically related issues. In 1835, he made three appearances before the Select Committee on Accidents in Mines and submitted three papers, *“Improved Plan of Working and Ventilating Coal Mines”*, *“Plan with Mr. Martin's Opinion on the Causes of Explosions in Mines”* and *“Mr. John Martin's Safety-Lamp, being a suggested improvement on Mr. William Martin's Safety-Lamp”*. Many years earlier, William's safety-lamp had been tested by the waste-men of Willington Colliery and pronounced superior to Davy's. In 1849, Martin printed his *“Plan for ventilating Coal Mines”* following many large explosions which had occurred since 1835. He provided a technical account of how to develop a mine with adequate ventilation, crediting the scheme to his brother William.

A further example of Martin's engineering interests is not geological but does illustrate the class of engineering company which he kept. In 1841, he was invited by Isambard Brunel to accompany him on

a test of the maximum speed of a broad-gauge engine. The test began at Southall on the Great Western main line and a distance of nine miles to Slough station was run in six minutes – an almost unbelievable rate of 90 miles an hour.

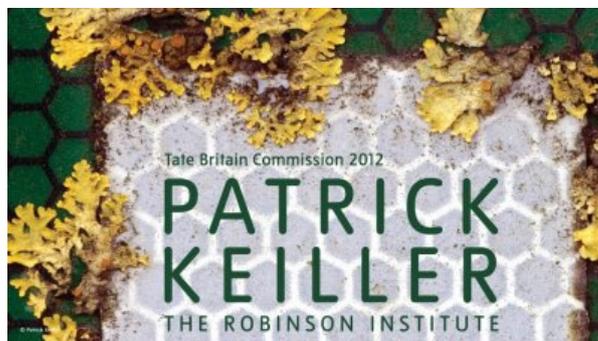
A short note is not the place to cover the engineering and artistic details of Martin's water supply and sewage schemes but it would be interesting to consider what influence and relevance Martin's ideas had on the subsequent metropolitan engineering works.

¹ Balston, Thomas, 1947. *John Martin 1789-1854: His Life and Works*. Gerald Duckworth, London.

² David Earle (e mail daearle@btinternet.com)

WILLIAM SMITH MAP ON SHOW AT TATE BRITAIN

Wendy Cawthorne of the Geological Society Library tells us that the GSL's William Smith map is currently on show in the Duveen Gallery at Tate Britain as part of Patrick Keiller's *The Robinson Institute*. This is a Tate-commissioned exhibition that considers the origins of the current economic crisis. Throughout *The Robinson Institute*, images of landmarks and locations in the English landscape are employed to illustrate the development of capitalism.



(Photo: Wendy Cawthorne)

Keiller is best known for his series of film essays *London* (1994), *Robinson in Space* (1997) and *Robinson in Ruins* (2010) in which a fictional, unseen scholar Robinson undertakes exploratory journeys around England. Robinson's chance encounters with various locations prompt him to record and reflect on the significance of each to greater global themes. In *The Robinson Institute*, researchers have revisited Robinson's last known journey, presenting the findings and film footage as an exhibition that features works by artists, writers, historians, geographers, cartographers and geologists, and a variety of other objects. Visitors are invited to retrace Robinson's steps and consider the connections that he makes.

The exhibition has been reviewed widely in the national press and, most recently, in the June edition of *Geoscientist* where Michael McKimm of the GSL Library writes "Don't miss the chance to see Smith's map as it is exhibited here: the vibrancy of the colours and the intricacies of his work become crystal-clear under the gallery's lights and it is hung at such a height that you can really get up close to parts of the country that are a bit of a neck-stretch in Burlington House."

The exhibition is at Tate Britain in London until 14th October 2012; admission is free.

See: www.tate.org.uk/whats-on/tate-britain/exhibition/patrick-keiller-robinson-institute

NEW YORK BANS “GEOLOGICAL HISTORY”

The words “geological history” are amongst 50 words or phrases banned by the New York Department of Education as inappropriate for mention in tests that students must sit periodically to assess their progress. As reported in the *i newspaper* of 29th March 2012, including the terms in exam papers “could evoke unpleasant emotions in the students”. The list of terms was meant as a guide to private companies recently invited to offer their thoughts on how the school tests might be improved but the instruction that “any proposal you might submit should steer clear of all the above [terms]” has opened the Department to a blaze of ridicule for taking political correctness to news heights, or lows. The banned words or phrases were Abuse • Alcohol, tobacco or drugs • Bodily functions • Cancer • Catastrophes/disasters • Celebrities • Children dealing with serious issues • Cigarettes • Computers in the home • Crime • Death and disease • Divorce • Evolution • Expensive gifts, vacations and prizes • Gambling involving money • Geological history • Halloween • Homelessness • Holidays • Homes with swimming pools • Hunting • In-depth discussions of sports that require prior knowledge • Junk food • Loss of employment • Movies • Nuclear weapons • Occult topics • Parapsychology • Politics • Pornography • Poverty • Rap music • Religion • Religious holidays and festivals • Rock ‘n’ roll • Running away • Sex • Slavery • Terrorism • Television and video games • Traumatic material • Vermin • Violence • War and bloodshed • Weapons • Witchcraft and sorcery.

JAMES HUTTON AT BGS HQ

The recently completed redevelopment of the British Geological Survey headquarters site at Keyworth near Nottingham was officially opened on 17th May 2012 by Sir John Beddington, Government Chief Scientific Advisor.

The façade at the entrance to the new eco-friendly James Hutton Building commemorates Hutton’s work by featuring a stylized representation of the unconformity at Siccar Point on the Berwickshire coast. Seaward – facing views of the outcrop, together with a field sketch made by Sir James Hall, who accompanied Hutton and John Playfair to the locality in 1788, formed the basis for the façade’s design which was executed using lateral equivalents of the Siccar Point wacke sandstones exposed in Dumfriesshire, and Middle Devonian sandstones from Easter Ross.



(Photo: BGS)

<http://www.bgs.ac.uk/news/NEWS/SiteOpeningPR170512.pdf>
<http://www.bgs.ac.uk/downloads/start.cfm?id=2488>

FUTURE MEETINGS OF OTHER BODIES

SUSSEX ARCHAEOLOGICAL SOCIETY THE PILTDOWN CENTENARY CONFERENCE: TRUTH AND LIES FROM THE DEEP SUSSEX PAST

SATURDAY 22ND SEPTEMBER 2012

Assembly Room, Lewes Town Hall

Main Street (Fisher St Entrance), Lewes BN7 2QS



In 1912, the discovery of a new and remarkable fossil human from Sussex was announced at the Geological Society, London. Now, a century on from this announcement and almost 60 years after it was revealed as an audacious hoax, the Piltdown Man affair continues to intrigue and fascinate. Indeed, it is arguable that in the fields of archaeology, human origins and natural science, Piltdown remains the most internationally recognizable Sussex place-name.

Set against a backdrop of the intrigue and excitement of early 20th century science and archaeology, and of competing individuals and nations during the years leading up to and through the First World War, the hoax is a gripping story of human fallibility and manipulation. It remains a cautionary tale in the natural sciences on the importance of rigorous method and against uncritical acceptance.

To mark the centenary, the Sussex Archaeological Society has assembled speakers actively engaged in researching the people and materials associated with the fraud. Leading experts on the history of the site and the personalities involved in the hoax will speak alongside specialists in the fraudulent tools, human remains and fossils found at the site. For the first time, the intriguing relationship of the Society itself to the prime suspect, Charles Dawson, will be explored and the case against new suspects presented.

The conference will also provide a chance to consider and celebrate the true nature of the early Stone Age record in Sussex from the internationally important site of Boxgrove to the unexplored potential of Sussex river valleys and rock shelters. It is through continued research of these sites that we can ensure Sussex continues to play a part in the study of human origins. The speakers' new evidence, combined with the scope for lively discussion and debate, promises a day of new evidence and intrigue around the greatest mystery in the history of science.

PROGRAMME

9.30am	Registration
10.00am	<i>Welcome and introduction: The Sussex Archaeological Society, Charles Dawson and Piltdown Man.</i> John Farrant (Morning Session Chair)
10.40am	<i>The Hoax in Historical Context.</i> Beccy Scott (AHOB3 Researcher/British Museum) and Andy Shaw (Research Fellow, CAHO Southampton)
11.15am	TEA/COFFEE
11.40am	<i>New Investigations of the Piltdown Man 'Fossil'.</i> Natural History Museum (speaker to be confirmed)
12.15am	<i>The animal fossils of Piltdown.</i> Andy Currant, Curator, Palaeontology Dept., Natural History Museum
12.50pm	LUNCH
	Afternoon Session chaired by Matt Pope.
1.50pm	<i>The Lying Stones of Sussex: what the artefacts tell us about the Piltdown fraud.</i> John McNabb, Southampton University
2.25pm	<i>A Brief History of Crime: the curious career, finds and 'discoveries' of Charles</i>

- Dawson FSA*. Miles Russell, Senior Lecturer in Prehistoric & Roman Archaeology, Bournemouth University
- 3.00pm TEA/COFFEE
- 3.25pm *The Case Against Pierre Teilhard de Chardin: Priest, Palaeontologist and Philosopher*. Francis Thackeray, Director, Institute of Human Evolution, University of the Witwatersrand. Johannesburg
- 4.00pm *Past, Interrupted. Stone Age Archaeology in 21st Century Sussex*. Matt Pope, Senior Research Fellow, Institute of Archaeology
- 4.35pm *Questions and End*
-

The fee for the conference is £30 (£20 for students) which includes a delegate booklet, and morning and afternoon refreshments. Lunch is not provided but may be bought locally – or bring a packed lunch.

Book online through the Sussex Past website www.sussexpast.co.uk (quote 'Piltown') or by phone (01273 405737).
