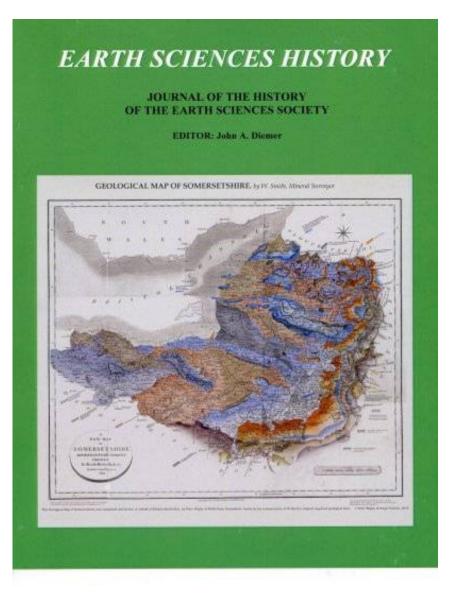
HOGG

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





Front cover

Volume 35, Number 1 of *Earth Sciences History*, published in April 2016, is a Special Issue covering the proceedings of last year's William Smith Map Bicentenary Meeting organised by HOGG. See page 15 of this newsletter for further details and how to order a copy.

Editorial subcommittee

Beris Cox (e mail: beris.cox@btinternet.com) David Earle (e mail: daearle@btinternet.com)

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 57

CONTENTS

Page

Letter from the Chair	2 3 3 3 4
Report on European Oil & Gas Industry History (March 2016) 'Behind the Scenes' visit to the Natural History Museum, London (March 2016)	5 8
IUGS Vladimir V. Tikhomirov History of Geology Award 2016	10
Future HOGG events	11 12 12
1754–1900 (Nov. 9th 2017) FIRST CALL FOR PAPERS	14
William Smith issue of Earth Sciences History	15
Book and Map Notes	16
Blue plaque for John Phillips	18 18
Other Future Meetings and Events (2016)41st INHIGEO Symposium (Aug. 27th–Sept. 4th)Hans Stille (1876–1966)—geologist with international impact (14th Oct.)Dinosaurs at Barnes (28th–30th Oct.)GA South-East Regional Conference (26th Nov.)	20 20 21 22 24
Registration form for Military Aspects of Engineering Geology, Past and Present	25
HOGG Standing Order Mandate.	26

LETTER FROM THE CHAIR



2016 is flying by and already we're almost halfway through the year. On 4th–5th March, we had a joint meeting at Burlington House on the history and heritage of the oil industry with the Geological Society's Petroleum Group and the Petroleum History Institute (see report on page 5 of this newsletter). The meeting was a success, but numbers attending from HOGG were disappointing, perhaps because of the registration fee which, although discounted for HOGG members, was still a bit on the high side. Encouragingly, the 'Behind the Scenes' visit organised by Chris Duffin to the Natural History Museum in London on 15th March went well (see report on

page 8 of this newsletter) and we hope we might arrange further visits to look at museums, their history and their collections. In this, we share an interest with the Geological Curators' Group and we're opening a dialogue with them to see what we might do by way of a joint meeting.

Unfortunately, and speaking of museums, I have less good news about our proposed fieldtrip on 9th September linked with the Extractive Industry Geology biennial conference at Birmingham University and organised by our Vice Chair Geoff Walton. New restricted opening times and the planned closure next year of Dudley Museum, a visit to which was to be a highlight of the trip, mean that we have had to cancel this event. Government and local authority cuts are posing a serious threat to museums and their collections, and we fear for their future-we have already lost Ludlow Museum. In recent years, Dudley Museum has been a lively place under the current Keeper of Geology, the dynamic Graham Worton, and before him, Colin Reid, both of whom have put Dudley back on the map in a way not seen since Murchison's visit to the limestone caverns. That a museum such as this, which plays such an active and high profile role in bringing geology alive to the people of the town, should be facing closure is nothing short of a scandal. But it is symptomatic of the times, with museums, both national and local, being squeezed financially or 'restructured' by management with no understanding of the function of museums and collections, and with associated loss of collections' knowledge and expertise. The history of museum collections is full of examples of cuts in resources leading to the loss of important material. On 26th April, the Geological Society published a Statement on the Value of Museums and Collections, which can be found on the Society's website at www.geolsoc.org.uk/museums_collections. Take a look at it and do keep an eye out for your local museum and be ready to support any campaign against cuts.

Our AGM this year will be held at Burlington House on 16th November during a joint meeting with the Engineering Geology Group on military aspects of engineering geology: past and present, organised by Ted Rose (see page 12 of this newsletter for details); there will be some distinguished international speakers and a great programme, so please do come along.

Papers presented at some of our own, or HOGG-sponsored, meetings over the last year or so are now in print. *Appreciating physical landscapes: three hundred years of geotourism*, edited by Tom Hose has been published by the Geological Society as Special Publication No. 417. *Arthur Smith Woodward: his life and influence on modern vertebrate palaeontology* edited by Z. Johanson, P.M. Barrett, M. Richter and M. Smith is now available as Special Publication No. 430 (see HOGG Newsletter 56 for details of both these publications). The papers read at our William Smith Bicentenary meeting at Burlington House in April last year were published in April this year as *Earth Sciences History* Vol. 35 No. 1 (see page 15 of this newsletter for purchase option).

Just as I was finishing this letter, I was delighted to hear that the International Union of Geological Sciences (IUGS) has awarded the Vladimir V. Tikhomirov History of Geology award for 2016 to Professor Martin Rudwick for his work on the history of the earth sciences. I'm sure you'll all join me in extending to Martin our heartiest congratulations on this well-deserved award (see page 10).

Finally, some sad news, which I'm sure many of you will already have heard—former HOGG Vice-Chair Dr Robert (Bob) Symes OBE passed away on 23rd May after a long illness. Following his

retirement from the Natural History Museum in London, where he was Keeper of Mineralogy for many years, Bob moved to Sidmouth, in Devon, where he became curator, and latterly emeritus curator, of the museum there. He was involved in most things geological in the south-west and lectured extensively around the region. He joined the HOGG committee in 2009 and resigned in 2013 due to illness; a tribute by HOGG member Roy Starkey appears on page 4 of this newsletter.

Tom Sharpe email <u>tom@tomsharpe.co.uk</u> June 2016

HOGG COMMITTEE 2016

Chairman Tom Sharpe Vice Chairman Geoffrey Walton Secretary Chris Duffin Treasurer/ Membership Secretary David Earle Ordinary members Beris Cox (newsletter), Stephen Cribb, Jill Darrell, Sabina Michnowicz, Ted Rose.

HOGG WEB OFFICER

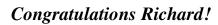
New committee member **Sabina Michnowicz** has taken on the role of HOGG web officer and will coordinate any material for inclusion on our website <u>http://historyofgeologygroup.co.uk/</u>. She will liaise with the webmaster and be the first point of contact for all web matters arising from the committee and wider membership. The site provides easy access to all aspects of HOGG including details about HOGG meetings and the facility for online registration and payment, as well as subscription renewal. Sabina may be contacted at <u>s.michnowicz@ucl.ac.uk</u>.

N.B. Although this is our main website, we continue to have a presence at <u>www.geolsoc.org.uk/</u> where you will also find some useful resources.



SUE TYLER FRIEDMAN MEDAL 2016

At this year's GSL President's Day on June 8th, the Sue Tyler Friedman Medal, for distinguished contributions to the recording of the history of geology, was presented to HOGG member and former Vice Chairman Richard Howarth. His special interest is the history of the use of quantitative methods in geology and early geophysics. A full citation and Richard's response will appear on the GSL website <u>www.geolsoc.org.uk/About/History/Awards-</u> <u>Citations-Replies-2001-Onwards</u>



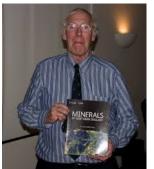




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ROBERT (BOB) FREDERICK SYMES 1939–2016

A tribute by HOGG member Roy Starkey¹ (reproduced from the mindat.org blog with the author's permission)



I first met Bob in 1982 when he came to stay with us at our home in Dudley, as a guest speaker to the West Midlands Mineral and Gemstone Society, of which I was then Secretary. I had contacted the late Peter Embrey at the Natural History Museum to invite him to come and talk to us about his involvement in the production of a facsimile reprint of Greg and Lettsom's classic work (Greg & Lettsom, 1858). Peter declined the invitation owing to pressure of work on *"the book in which I am currently engaged on the minerals of Cornwall and Devon*", but kindly delegated the task to Bob. I had recently found crystals of what I believed to be phosgenite at Clevedon near Bristol, and this was of interest to Bob

given his researches into the minerals of the Mendips. He kindly got the specimen analysed for me and was able to confirm that it was indeed phosgenite.

We collaborated on a number of projects over the years and worked together closely during his term as Hon. President of the Russell Society, when I was Vice-President. Bob was a rare blend of chemist, geologist, mineralogist and enthusiast for all things related to the earth sciences. A senior figure in his professional world, retiring as Keeper and Head of the Department of Mineralogy at the Natural History Museum, he will perhaps be best remembered for his outreach activities and public engagement. Bob was a familiar figure at mineral shows and similar events across the country, and was always in demand as a speaker to local clubs and societies—often on the minerals of the Mendips, or Sir Arthur Russell.

His research interests were wide-ranging, from orbicular rocks and their formation, through supergene geochemistry to the complex mineralogy of the Mendip lead-manganese veins. It was announced in the New Year Honours list on 30th December 1995 that Bob was to be awarded the OBE for services to the museum and the science of mineralogy, something which the amateur collecting world wholeheartedly supported.

Bob was a prolific author, of both scientific papers and popular books, but I suspect that the work of which he was most proud may be *Minerals of Cornwall and Devon*, authored jointly with Peter Embrey (Embrey & Symes, 1987), which set the standard for an occasional series of topographical mineralogy works in the same style, progressively covering different regions of Great Britain.

Bob was instrumental in the formation of the Harrow and Hillingdon Geological Society, and remained its President even after moving to Sidmouth in Devon upon retiring from the Museum, and quickly formed a small informal group of local enthusiasts which he delighted in referring to as "SMAGS"—the Sidmouth Mineral Appreciation Group.

A true gentleman, and a great ambassador for mineralogy, Bob always had time for everyone and was interested to know all the latest news and finds. I last visited him at the Royal Devon and Exeter Hospital on 30th April. Although quite poorly, he was really pleased to see me and enjoyed the visit. We chatted on things mineralogical for half-an-hour or so before saying goodbye.

We offer our condolences to his wife Carol, daughters Victoria and Catherine and their families. He will be sadly missed.

Rest in peace Bob.



Dick Moody¹

This two-day conference, convened jointly with the GSL Petroleum Group and the Petroleum History Institute, was a great success albeit poorly attended. The registration fee was far too high even at a discounted price of £100 for HOGG and GA members; sadly, very few of our members attended on either day. There were 13 talks on Day 1 and nine on Day 2.

DAY 1 SESSION ONE History of the United Kingdom Oil Industry

Professor Dick Selley of Imperial College presented a keynote talk on *UK Shale Gas Exploration: From* 1875 to Now. Dick was on fine form concluding that the two minor seismic tremors experienced by Cuadrilla Resources in the Midlands had 'irritated' opponents to Shale Gas exploration for years to come. **Jon Gluyas** and **Jonathan Craig** of Durham University and ENI spoke about the *Early 20th* century Oil Exploration of the English Midlands: the New Persia, noting the numerous surface seepages in the UK and accidental discoveries of flowing oil. George Martin Lees, who was once head of exploration with Anglo-Persian Oil, successfully drilled Eakring 1 in Nottinghamshire—the first of 25 discoveries in Britain's first oil boom. **Alastair Fraser** of Imperial College rounded off the first session with *From Oil Shale to Shale Gas*, a review of the history of successful drilling of the large surface anticlines of the Weald and Wessex basins culminating in the discovery of the Wytch Farm field with over 1 billion barrels of oil in place.

After the morning break **Russell Thomas** talked on *The Development of the Manufactured Gas Industry in Europe* noting that one of the great technical contributions by Great Britain to the industrial World was the invention of manufactured gas. The Scottish Engineer William Murdoch led the way in commercialised gas but several Europeans helped the industry develop. Britain set out to export gas technology worldwide with William Congreve and George Bower playing major roles. **Stuart Cornfield** of Cornfield Geoscience stepped back in time with a talk on *The Geological Background to the first Drilling Campaign in the UK, 1918–1922.* Stephen noted that onshore drilling started during the First World War and 11 wells were sunk. American geologists played an important role with their logs and maps. Hardstoft in Derbyshire was the first oil discovery in the UK.

According to *Graham Dean* in his talk entitled *The West Lothian Oil-Shale Formation in Scotland—The Oil Shale that changed the World*, the first large-scale commercial production of oil in the world started in West Lothian. From 1851–1951, an estimated 75 million barrels of oil were produced from these shales; they had a TOC of over 40%. The last contribution of the morning was by *Cliff Lea* of the North East Derbyshire Industrial Archaeological Society entitled *Derbyshire's Oil and Refining History: the James "Paraffin" Young Connection.* The conference marked the centenary of plans to sink Hardstoft No 1. Coincidentally, an oil seep in a coal mine at nearby Riddings had provided James "Paraffin" Young with material for his 1847 work on refining technology.

Jon Gluyas et al. spoke about *The redevelopment of the Argyll Field in the UK North Sea*. For 17 years from 1975, oil was produced from Argyll by US company Hamilton Brothers. Abandoned, it lay unwanted until 2003 when, renamed as the Ardmore Field, it produced 20,000–23,000 barrels per day. A repeat failure happened in 2005 but a production restart is programmed for 2015 under the field name Alma. *Matthew Haaroff* of Third Energy gave a talk on *The History of Exploration and Development of Gas Fields in North Yorkshire*, from 1937 by D'Arcy, now British Petroleum, to the modern day with the most recent licence applications (14th Round) being rewarded by the discovery of light gas in the

Carboniferous of the Cleveland Basin (Fig. 1). Fracking is planned for early 2016! *Jonathan Craig*, the driving force behind this meeting, brought Session One to a conclusion with a talk on *Hardstoft— Britains First Oil Field*; his excellent paper has been published in Volume 26, No. 1 of *Geoscientist*.

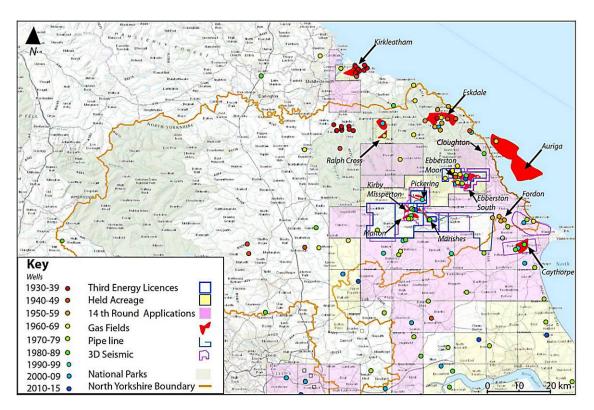


 Fig. 1. Map of NE Yorkshire showing the location of wells drilled and gas fields.
(From Matthew Haarhoff, David Harrison, Fred Hughes, Colin Taylor, Andrew Pearson, Grant Emms and Andy Mortimer, Third Energy Ltd)²

DAY 1 SESSION TWO History of the Oil Industry in Eastern Europe.

Talks on the *Birth of the Oil Industry in the Northern Carpathians* by *Piotr Krzywiec* (Polish Academy of Sciences) (Fig. 2); the *Czech-Slovak Region* by *Pavla Benadova* (Museum of Oil Mining and Geology) (Fig. 3) and *The Geology and Geodynamics Characteristic of the Oil and Gas Field and the History of Oil Production in Azerbaijan* by *Vusala Aghayeva* (Azerbaijan State Oil Company and Industrial University) were very well received by an informed audience. The illustrations associated

with these talks were beautifully presented and highly informative.

Fig. 2. The geological map known as the *Carta Geologica totus Poloniae*, *Moldaviae*, *Transylvaniae*, *Hungariae et Valachiae* (1806) by Stanisław Staszic (1755–1826), a Polish priest, showing numerous oil seeps and different rock types containing hydrocarbons. (From *Birth of Oil Industry in the Northern Carpathians* by Piotr Krzywiec).²

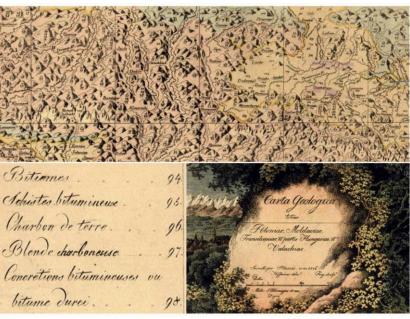


Fig. 3. View of the oilfield at Nesyt, 1924. (From *History of Oil Industry in Czech-Slovak Region* by Pavla Benadová).²

DAY 2 was the equal of Day One with very informative presentations in three sessions.

The names of *Jean-Jaques Biteau* (Total), *Fernando Cazzini* (retired ENI) and *Jorge Navarro* (Association of Spanish Petroleum Geologists and Geophysicists) are legendary in the oil industry and their talks were both entertaining and informative. *Jean Jacques Biteau* talked on the *The Main Tectono-Sedimentary Domains of the Pyrenees* comparing the petroleum systems in the Aquitaine and Ebro Foreland basins; this was a keynote presentation from the former Geosciences Reservoir Vice President of Total. *Fernando Cazzini* is an entertainer as well as legend in the oil industry and his

keynote talk on *The Early History of the Oil and Gas Industry in Italy*, was a classic presentation. Fernando referred to the 'Aloni Sagittae', an ingot of purified bitumen from the first century AD and reported that 7000 wells have been drilled into the buried anticlines of the Po Valley. The *Ayoluengo Field of the Basque-Cantabrian of Spain* is that country's only oil field and was thought once to herald a 'Texas Oil Boom' in Spain (Fig. 4). The history of the field and the development of a tourist attraction at the Oil Museum of Sragentes de la Lora was the subject of the talk by *Jorge Navarro*, President of AGGEP. He invited HOGG to visit the region in the not too distant future!

Fig. 4. Local people witnessing the successful drilling of the first well at Ayoluengo. (From *History Petróleo de la Lora* by Miguel Ángel, Moreno Gallo, José Maria Chomón; credit F. Velez).

The final session of this meeting dealt with the **History of the Petroleum Industry and Petroleum Geologists**. *Jeff Spencer* of Bellvue Texas and *Marius Furcuta* from Romania gave a talk on *Myron M. Kinley (1898–1978), the original pioneer oil well firefighter*. The talk focussed on the 'Torch of Moreni', the name given to well No. 160 drilled near the town of Moreni in Romania in 1929. The well was a blow-out that caught fire. Over a period of two years, 14 men died and over 100 were injured. Initially, the Romanians doubted that Myron could extinguish the fire which occupied a 76 m wide, 20 m deep crater but gelatinised nitroglycerin and a huge skill level finally won the day!

Henry Edmundson and *Mark Mau* spoke on the *Challenges in Writing a History of E&P* [Exploration & Production] *Technology*³; this was a unique presentation dealing with the history of the retail petroleum industry. *Martina Kölbl-Ebert* (President of the History of Earth Sciences Society) is well known to HOGG members (she is herself a member). Her talk on *German Petroleum Geologists in World War II* was an insight into the lives of Alfred Bentz, August Moos and Karl Kreci-Graf. These three petroleum geologists were probably friends, although Bentz collaborated with the Hitler Regime; Krejci-Graf was a member of the SS, and Moos, a Jew, was murdered at Buchenwald in January 1945. Martina dealt well with this tragic story.



Finally, *Rasoul Sorkhabi* spoke on the life of *Sir Thomas Boverton Redwood (1846–1919): A Watershed in the British Oil Industry.*

¹e mail <u>rtj.moody@virgin.net</u>

² From www.geolsoc.org.uk/~/media/shared/documents/specialist and regional groups/petroleum/Oil History Abstract Book.pdf

³ Groundbreakers: the story of oilfield technology and the people who made it happen is published by FastPrint Publishing <u>http://www.fast-print.net/bookshop</u> ISBN 978-178456-187-1 462pp. £24.99.



'BEHIND THE SCENES' VISIT TO THE NATURAL HISTORY MUSEUM, SOUTH KENSINGTON, LONDON Tuesday 15th March 2016

Jim Spencer¹

Members of HOGG were privileged to be taken behind the scenes for an afternoon viewing the historic collections of the Natural History Museum (NHM).

After welcoming everybody, Dr Paul Taylor gave an illustrated talk on the history of the museum and its collections. The museum in South Kensington opened in 1881 when the geological specimens of the British Museum were moved there, followed later by the natural history specimens. The original building was iron-framed with terracotta tiles; the eastern end displayed fossil life-forms, the western end recent ones. The talk was given in the later Palaeontology Building, currently undergoing renovation. The museum possesses over ten million fossils, either here or in store. Amongst these, there are four historic collections that had never been properly integrated in the records—those of **Sir Hans Sloane** (1660–1753), **William Smith** (1769–1839), **Thomas Pennant** (1726–1798) and **Charles Koenig** (1774–1851). So, in 2011, the Historic Collection Project was started in order to register and label this material, in particular to identify type and figured specimens.

As personal physician to the Duke of Albemarle, **Sir Hans Sloane** had accompanied him to Jamaica upon the Duke's appointment as Governor. His early interest in natural history led him to start collecting there. Subsequently, his successful career as a physician allowed him to amass a large

collection of items including 8,000 books, 23,000 coins and 44,000 rocks and minerals; the catalogues for these ran to five volumes. Ultimately, this material formed the nucleus of the British Museum



collections. Of the fossils which were transferred to the NHM (then the British Museum (Natural History)), only 113 can now be found.

Thomas Pennant, a

member of the landed gentry, was a keen naturalist and well known for his series of books recording his travels around Britain and abroad. He corresponded with many of the leading





naturalists of the day, including Peter Pallas and Gilbert White. His interest in geology developed after meeting William Borlase, and he formed his own collection of minerals and fossils for scientific study. Following Pennant's death, these remained at the family home, Downing Hall, until the ninth Earl of Denbigh presented them to the British Museum (Natural History) in 1912; there are now 1,138 of these specimens at the NHM. The Pennant collection includes vertebrate teeth as well as invertebrates, and also some pseudo-fossils.

Charles Koenig, the anglicized name of Karl König, became an Assistant Keeper then Keeper in the Natural History department of the British Museum. Later, he became the first Keeper of Geology and Mineralogy. He coined the word "ichthyosaur" and, in 1814, described Guadeloupe Man which had been obtained from a captured French ship; the skull is now in Paris. The Koenig collection contains much material from the White Jura of Solnhofen.



The museum also has the fossil fish collections of **Sir Philip de Malpas Egerton** and the **Earl of Enniskillen** which were

described by **Louis Agassiz** (1807–1873). Agassiz was born in Switzerland, the fifth child of the family. He showed an early interest in natural history, particularly that of fishes. His schooling started in Bienne, where his teacher recommended that he went to Lausanne. From there, he went on to Zurich University with his little brother, Auguste, and then on to Heidelberg and Munich universities. His ambition was to describe all European fish and, to that end, he collected large numbers of fresh fish which he described and had drawn by an artist. In Munich, he was able to study the collection of South American freshwater fish that von Martius and Spix had brought back from their Brazilian expedition, resulting in a book on Brazilian fish. He also obtained a doctorate in Comparative Anatomy.

Agassiz visited many European museums to study their fish collections and, at that time, met Egerton and Enniskillen who were touring Europe. As students of Buckland, they were looking at cave deposits but Agassiz persuaded them to collect fossil fish. The naturalist and explorer Alexander von Humboldt paid for Agassiz to visit Paris and study with Cuvier. In 1833, Agassiz set up a museum in Neuchâtel. Buckland invited him over to Britain to examine the collections of British geologists including the collections of Egerton and Enniskillen. This work, together with other research, was published piecemeal over ten years, and eventually bound into the five-volume *Recherches sur les Poissons Fossiles*. The collections of Egerton and Enniskillen were eventually acquired by the British Museum forming the core of their fossil fish collection.

Following the talk, the group then entered the Palaeontology storerooms where Paul showed the collections of Sloane, Koenig and Pennant, now all neatly labelled and numbered.

Jill Darrell then showed a collection of **William Smith** material, with the figured specimens shown together with the original specimens and some Smith maps.



Chris Duffin had set out a collection of fossil fish from the Museum collection together with the illustrations produced for Agassiz. The group was also able to view copies of Agassiz's *Recherches*.

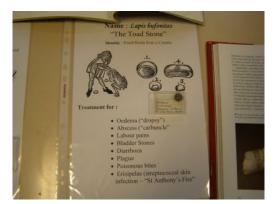


The final display was of geological material that had been used as medicines or cures.

Thanks to Paul Taylor, Chris Duffin, and Jill Darrell for providing such an interesting afternoon.

¹e mail jimspencer@gmail.com





Images © Jim Spencer

IUGS VLADIMIR V. TIKHOMIROV HISTORY OF GEOLOGY AWARD 2016

The International Union of Geological Sciences (IUGS) has awarded the Vladimir V. Tikhomirov History of Geology award for 2016 to distinguished HOGG member and former committee member Martin Rudwick. The award, which rewards outstanding original contributions or achievements that mark a major advance or contribution to the Earth Sciences, was inaugurated in 2012 and is named after the founder of the International Commission on the History of Geological Sciences. Martin reportedly said "As a paid-up historian for the past half-century, it gives me special pleasure to be given an IUGS 'Science Excellence Award'.



FUTURE HOGG EVENTS

2016

*JOINT FIELD TRIP WITH EIG BIENNIAL CONFERENCE

Friday 9th September 2016

This field trip, which was advertised in Newsletter 56, has had to be *CANCELLED* (see 'Letter from the Chair' on page 2 of this newsletter).

*PETROLEUM, RIOJA AND DINOSAURS—A FIELD EXCURSION TO NORTHERN SPAIN September 2016 (dates to be confirmed)

This excursion will focus on the history of the onshore petroleum geology of the Burgos region (including two museum visits), the geology of the Rioja vineyards, and the coastal geology of Asturias.

See page 12 for further details.

*MILITARY ASPECTS OF ENGINEERING GEOLOGY, PAST AND PRESENT Wednesday 16th November 2016

Burlington House, Piccadilly, London *including HOGG 2016 AGM*

A joint meeting with the GSL's Engineering Group, convened by Ted Rose and Dr Judy Ehlen, to mark the centenary of the year in which (Sir) Edgeworth David was deployed on the Western Front, the first "engineering geologist" to serve as such with the British Army in combat. Programme details on page 12 of this newsletter; registration form on page 25.

Alternatively, view all details and register online at

http://historyofgeologygroup.co.uk/november-2016-military-aspects-of-engineering-geology-past-and-present/

2017

*THE SOCIETY OF ARTS AND THE ENCOURAGEMENT OF MINERALOGY AND GEOLOGY—1754–1900 Thursday 9th November 2017 Burlington House, Piccadilly, London A joint meeting with the William Shipley Group for RSA History

First Call for Papers on page 14 of this newsletter.

AND PROVISIONALLY

*WEEKEND MEETING/EXCURSION TO THE FOREST OF DEAN Summer (?June) 2017 led by Cherry Lewis

*WEEKEND MEETING/EXCURSION TO LYME REGIS Autumn (?September) 2017 led by Tom Sharpe

PETROLEUM, RIOJA and DINOSAURS—A FIELD EXCURSION TO NORTHERN SPAIN SEPTEMBER 2017



This excursion, organised by Professor Dick Moody, will cover the geology of the Basque-Cantabrian Basin with reference to the onshore petroleum history, visiting museums dedicated to oil discoveries such as the Ayoluengo-1 well, once regarded as the first sign of a 'Texas Boom' in Spain.

Northern Spain is also famous for Rioja wines, first legally recognised by the King of Navarra and Aragon in 1102AD. The Rioja region is protected by the Cantabrian Mountains in the north and is drained by the River Ebro and its tributaries which influence local soils.



From Rioja and the Cantabrian Mountains, the excursion will follow the geology of the coast including the Dinosaur Coast section between Ribadesella and Villaviciosa, and the 'Jurassic Museum' at Colunga in the Asturias region.

The excursion will last eight days (<u>actual dates to be</u> <u>fixed</u> but will be after the end of the school summer holidays).

Flights from London Heathrow to Bilboa with BA. Local travel by minibus.

Estimated cost per person (sharing room) £720.00.

Museo del Jurasico

(Wikimedia Commons)

Expressions of interest to Professor Dick Moody e mail rtj.moody@virgin.net



MILITARY ASPECTS OF ENGINEERING GEOLOGY: PAST AND PRESENT

Burlington House, Piccadilly, London Wednesday 16th November 2016



PROGRAMME

- **09.00–09.25** REGISTRATION
- 09.25–09.30 Ted Rose Introduction
- **09.30–10.00** John Mather (Emeritus Professor of Earth Sciences, Royal Holloway, University of London, UK) *Water supplies to maritime and coastal defences: a story of risk and innovation*
- **10.00–10.30** Tony Brook (West Sussex Geological Society, UK) Response to the Napoleonic threat of invasion in 1804: canals, coastal forts and cartography of south-east England
- **10.30–11.00** COFFEE BREAK

- **11.00–11.30** Danny Harrelson (Engineer Research Development Center, US Army Corps of Engineers, Vicksburg, USA) *Geologic influence of the Great River Raft on the Red River Campaign of the American Civil War*
- **11.30–12.00** Peter Doyle (Visiting Professor of Geology, University College London, UK) *Geology* and military mining: Gallipoli and the Western Front, 1915-1918
- **12.00–12.30** Dierk Willig (Head of Geology, Hydrology & Geophysics, Bundeswehr Geoinformation Centre, Germany) German military mining and military geology on the Eastern Front in the Great War
- 12.30–13.30 LUNCH BREAK (to include HOGG AGM). Sandwich lunch provided in Lower Library
- **13.30–14.00** Ted Rose (Honorary Research Fellow in Earth Sciences, Royal Holloway, University of London, UK) *Quarrying Companies Royal Engineers: a geology-related innovation stimulated by World War*
- **14.00–14.30** Hermann Häusler (Professor of Geosciences, University of Vienna & Colonel, Reserve Army, Austria) *The northern Atlantic Wall: German engineering geology work in Norway during World War II*
- **14.30–15.00** Florian Malm (Bundeswehr Geoinformation Centre, Germany) One hundred years of cross-country mobility prediction for military purposes
- **15.00–15.30** Paul Nathanail (Professor of Engineering Geology, University of Nottingham, UK) The impact of the Military Engineering Experimental Establishment (M.E.X.E.) approach to terrain evaluation
- 15.30-16.00 TEA BREAK
- **16.00–16.30** Eddie Bromhead (retired Professor of Engineering Geology, University of Kingston, UK) *The landslip-damaged Roman era fort at Lympne, Kent*
- **16.30–17.00** Deodato Tapete (British Geological Survey, Keyworth, UK) Coastal processes that have led to the loss of sites of British military heritage
- **17.00–17.30** Sandy Mackay (ALYSJ joint venture, Doha, Qatar) Engineering geological considerations for the 'Old' Beacon Railway Tunnel, Hong Kong Special Administrative Region: a route denied to the invading Japanese in World War II
- 17.30–17.35 CONCLUDING REMARKS

CONVENORS

Edward P.F. Rose (e-mail <u>ted.rose@earth.oxon.org</u> *Judy Ehlen* (e-mail <u>judyehlen@hotmail.com</u>)

REGISTRATION FORM ON PAGE 25 OF THIS NEWSLETTER or REGISTER ONLINE

@

http://historyofgeologygroup.co.uk/november-2016-military-aspects-ofengineering-geology-past-and-present/





THE WILLIAM SHIPLEY GROUP FOR RSA HISTORY

The Society of Arts and the Encouragement of Mineralogy and Geology 1754–1900

A joint meeting of the History of Geology Group of the Geological Society and the William Shipley Group for RSA History is to be held on 9th November 2017 at the Geological Society, Burlington House, Piccadilly, London.

First Call for Papers

The Society for the Encouragement of Arts, Manufactures and Commerce, founded in 1754, was a quintessential enlightenment organisation dedicated to raising the standard of life through encouraging invention, discovery and improvements. To this end, it instituted a series of awards covering a broad spectrum of endeavour. Prizes in the field of chemistry, cartography, and land reclamation encouraged the emerging science and field practice of mineralogy and geology. Although there were direct awards for mineralogical maps of England, Scotland and Ireland, other less direct awards set the scene by enabling geology and mineralogy to develop by exploitation of minerals, by hydrological and coastal defence work and by improved survey. Several prominent people of the time were members of both the Society of Arts and the Geological Society, as well as other contemporary institutions, notably the Royal Institution.

Papers on the Society, its aims and organisation, its effectiveness in supporting the development of geology and mineralogy, and rivalries with other interested bodies, are welcome. It is intended that the papers will be published. Presentations will be 20–25 minutes long, although published papers may be longer. To be considered, abstracts of 250–500 words for proposed papers should be received by the convenors by 31st October 2016. For further information, please contact the convenors John Henry (john@geolmaps.com) of HOGG or Susan Bennett (susan@bennett.as), Honorary Secretary of the WSG.



If you wish to join an electronic mailing list to receive updates, please send your email to <u>susan@bennett.as</u>

William Shipley Group for RSA History <u>www.williamshipleygroup.btck.co.uk</u> History of Geology Group <u>www.historyofgeologygroup.co.uk</u>

WILLIAM SMITH ISSUE OF EARTH SCIENCES HISTORY

JOURNAL OF THE HISTORY OF THE EARTH SCIENCES SOCIETY

Volume 35, Number

John Henry

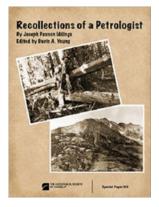
The *Earth Sciences History* April 2016 issue is now out and covers most of the proceedings of the HOGG William Smith Conference held at the Geological Society in April 2015. It is a larger than usual issue with papers covering several aspects of William Smith's life and career not previously published. It is particularly well illustrated in colour thanks to the combined generosity of HOGG, bookseller Stuart Baldwin and the authors. The collected papers present a well-rounded, not uncritical, account of William Smith and his achievements. The issue includes 11 papers:

William Smith (1769–1839): His struggles as a consultant, in both geology and engineering to simultaneously earn a living and finance his scientific projects, to 1820. Hugh Torrens	pages 1-46
William Smith's 1815 map, A Delineation of the Strata of England and Wales: Its production, distribution, variants and survival. Tom Sharpe	47-61
William Smith: The maps supporting his published maps. C. John Henry	62-98
New light on the 1824 William Smith Northumberland County map: A joint work by Smith and Phillips. Martyn Pedley	99-114
William Smith and Ireland: Sources of Irish geological information on his geological map of 1820. Patrick N. Wyse Jackson	115-123
William Smith: The natural order of strata and the search for underground water supplies. John Mather	124-144
A breach too far? East Norfolk's place in William Smith's search for success. Peter Riches	145-166
David Mushet, John Farey and William Smith: Geologising in the Forest of Dean. Cherry Lewis	167-196
William Smith and Tucking Mill: The story of a geologist and his cherished home. Richard T. A. Irving	197-211
William Smith's London neighbourhood. C. John Henry	212-217
A note on William Smith's drainage works near Churchill. Geoffrey Walton	218-227

If you are not a subscriber to *Earth Sciences History* but would like a copy of this particular issue, I have made a bulk purchase which substantially reduces the cost to UK purchasers compared with the cost of purchasing a single copy directly from the publisher in the USA.

The price from me is £21 including postage. This compares well with the price of a single copy posted from the US (£27.80 / \$40). If you would like to place an order, please contact me at john@geolmaps.com Payment may be by cheque, online transfer to my account, or PayPal.

BOOK AND MAP NOTES

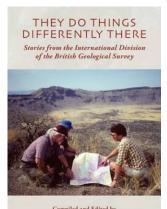


Recollections of a Petrologist

Joseph Paxton Iddings (edited by Davis A. Young) Geological Society of America. GSA Special Paper 512. 2015. 208pp. ISBN 978 081372 512 3 paperback £33.00 (GSL fellows £23.00)

In this book, "Joseph Paxson Iddings (1857–1920), the leading American igneous petrologist of his era, recounts his illustrious career with the US Geological Survey and the University of Chicago. A major participant in the transition from hand-specimen petrography to theoretical igneous petrology based on microscopical petrography and physical chemistry, Iddings deciphered

the igneous geology of Yellowstone National Park, spearheaded the CIPW quantitative igneous rock classification project, and wrote several magisterial petrology texts......Iddings shed light on the central petrologic issues of his time in a lucid narrative interspersed with assessments of the personalities and achievements of geological contemporaries, literary allusions, poems, humorous stories, and a wealth of vivid descriptions and impressions of the cultures of Far Eastern countries. No petrologist, mineralogist, or historian of geology should miss the pleasurable reading offered..... Editor D. A. Young has supported Iddings' lively text with literature citations, a bibliography, and hundreds of biographical notes." (Publishers blurb)



Compiled and Edited by A. J. Reedman and D. G. Bate They Do Things Differently There: Stories from the International Division of the British Geological Survey Reedman, A.J. and Bate, D.G. (eds) Aspect Design, Malvern. 2016 338pp. ISBN 978-1-908832-89-4 Paperback £12.99.

Review by John Henry¹

'Stories' is the operational word in this title. This is a rich compilation of the experiences of individual geologists working overseas in the past half century. The brief prologue quotes L. P. Hartley "The past is a foreign country: they do things differently there." The stories cover a recent period but much of it before modern communications. In many places, the experiences preceded

modern transport and mapping. These individual accounts remind of us of the resourcefulness and toughness of the geologist(s), which were the keys to accomplishing their tasks successfully in challenging terrains and circumstances. Less than a lifetime ago, the independence or isolation of the geologist in the field well into the 1980s meant a very different working environment without reference to head office and often without backup. Of course, the other difference, perhaps more pronounced in past decades, was cultural. Working in another country with different attitudes, expectations and talents brought interests and challenges not encountered at home. The stories, often adventures, make this compilation an exceptionally good read. For this reader, it prompted recollections of some similar experiences and situations.

The book is arranged in decades which capture the trends. 'The 1960s: Winds of Change' captures the period of transition of many countries from colonial status to independence. 'The 1970s: Broadening Horizons' covers a period of expansion with 90 projects in 50 countries. 'The 1980s: Challenging Terrains' continues the expansion beyond the Commonwealth. 'The 1990s A Competitive World' deals with a period of declining British aid but increasing funding by international agencies such as the World Bank and European Commission. '2000-2011: A Chapter Closes' tells of a shift from major residential

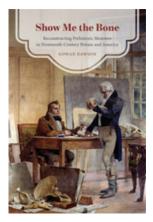
projects to short term assignments and the creation of a consultancy, International Geoscience Services Ltd, which pursues thematic surveys and 'capacity-building' with more of a focus on pure science. The headings may sound dry but the 70 stories by geologists, and occasionally their partners, provide a fascinating insight into our recent geological history from a personal viewpoint.

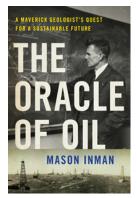
Much of the overseas experience was in Commonwealth countries but a surprising number of projects were in South America and in the Francophone sphere. There is a helpful index of articles by country. Since 1965, over 350 BGS staff have worked on international assignments associated with over 2000 overseas counterparts. This book is not about geology, nor is it a conventional historical account. It is about the human experience of situations, some unusual, many typical, some dangerous, some sad and many, retrospectively humorous. The tales are all well told and some are by master story tellers. A great book for bedside reading.

¹e mail <u>geol.maps@virgin.net</u>

Show Me the Bone: Reconstructing prehistoric monsters in nineteenthcentury Britain and America Gowan Dawson University of Chicago Press. 2016. 480pp. ISBN 978 022633 273 4 clothbound \$50

"..... You may on occasion find this richly detailed tapestry of 19th-century Franco-Anglo-American natural history a little exhausting, but persevere and you will be amply rewarded by Dawson's meticulous evocation of a colourful cast of characters and their equally colourful times." (from Ian Tattersall's review in *New Scientist* 230/3072, 7th May 2016).





The Oracle of Oil: A maverick geologist's quest for a sustainable future Mason Inman W. W. Norton & Co. 2016. 432pp. ISBN 978-0-393-23968-3 hardcover \$29.95

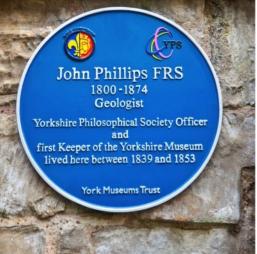
This biography of M. King Hubbert is the "story of how this brilliant but irascible Shell geologist accurately forecast in 1956 that US oil production would peak and go into terminal decline by 1970.... Hubbert's forecast pitched him into a running battle with many in the oil industry until he was eventually proved excruciatingly right during the oil crisis of 1973, and achieved "oracle" status while Jimmy Carter was president. Inman plots Hubbert's work and short-lived impact on US energy

policy, until the geologist's death in 1989..... The book is...well written, deeply researched and rich in anecdote—Hubbert's character and his intellectual achievements sing out...... " (from David Strahan's review in *New Scientist* 230/3076, 4th June 2016).

BLUE PLAQUE FOR JOHN PHILLIPS

HOGG member Duncan Hawley has drawn attention to this item on the Yorkshire Philosophical Society's website:

"A blue plaque to a famous York geologist was unveiled in the Museum Gardens at 2pm on Thursday 25 February at St Mary's Lodge. Three York organisations—York Civic Trust, Yorkshire Philosophical Society and York Museums Trust—came together to design and install a plaque to John Phillips (1800–1874). He was active in the mid-1800s and used fossils to prove the correct stratigraphy of geological deposits. He identified and named the major geological eras—Palaeozoic, Mesozoic, and Caenozoic and demonstrated the mass extinctions between them. Phillips was a prolific academic and popular science author, and was a genuine polymath, being active in many scientific fields. He was first Keeper of the Yorkshire Museum, and was an officer of the Yorkshire Philosophical Society for several decades."



© Nigel Kirby

LAPWORTH MUSEUM OF GEOLOGY (UNIVERSITY OF BIRMINGHAM), UK

HOGG member Roy Starkey, who works as a volunteer at the Lapworth Museum of Geology, reports that after several years of sustained effort, and a lot of hard work by many, many people, the Museum finally welcomed its first visitors on Friday 10th June. "The end result looks superb—smart modern lines blending with the stylish Edwardian interior, all brought bang up to date by top class display cases, great graphics and a diverse range of excellent displays.

Visitors can explore life over the past 3.5 billion years, whilst enjoying displays of exceptional objects from one of the UK's most outstanding geological collections, with state-of-the-art galleries and a range of innovative and interactive exhibits—all completely free of charge. From rocks and fossils to volcanoes, earthquakes, and even dinosaurs, the Museum will capture the imagination of all ages."

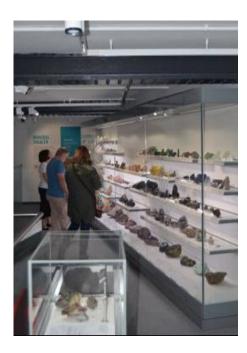
You can read a report, with pictures at

http://www.mindat.org/article.php/2372/Lapworth+Museum+of+Geology+reopens+after+an+extensive +%C2%A32.7+million+redevelopment and find out more details about opening times, directions, access etc. on the Museum website at http://www.birmingham.ac.uk/facilities/lapworth-museum/index.aspx

<u>Additional information</u> (taken from Jon Clatworthy's article in The Palaeontological Association's Newsletter 91):

The Museum's collections contain in excess of 250,000 specimens covering most aspects of the geological sciences, including palaeontology, mineralogy and petrology, as well as zoology,

comparative anatomy, archaeology and photography; there are also important collections of scientific instruments and geological models. The palaeontology collection includes material from many of the most significant geologists and collectors of the nineteenth and early twentieth centuries.





Charles Lapworth (1842–1920), after whom the museum is named, became a world authority on graptolite faunas and was instrumental in showing their significance in biostratigraphy. His extensive graptolite collection was used to produce the definitive Monograph of British Graptolites, and contains many type and figured specimens. His archive is one of the most important features of the Lapworth Museum and is regarded as one of the most complete archives of any Victorian or Edwardian UK geologist. It covers 60 years of his geological work from the 1860s up to his death in 1920, and comprises 3500 letters, approximately 1000 field and manuscript maps, and hundreds of field sketches, notebooks, consultancy reports, and photographs. It contains his lecture notes spanning the period 1880–1913, combined with teaching aids and examples of student notebooks from the same lectures. The archive provides a unique record of important advances made in the geological sciences, and the development of the science during an important period of its history.



Images © Roy Starkey

In due course, we hope to arrange a HOGG visit to the Lapworth Museum of Geology—watch out for announcements in future newsletters.

OTHER FUTURE MEETINGS AND EVENTS



41ST INHIGEO SYMPOSIUM CAPE TOWN, SOUTH AFRICA 27TH AUGUST–4TH SEPTEMBER 2016

The 41st INHIGEO Symposium will be part of the 35th International Geological Congress (<u>www.35igc.org</u>) to be held in Cape Town, South Africa in August–September 2016.

A "History of Geoscience" theme is listed under a Core Topic of "Geoscience and Society"; the INHIGEO Secretary General (Associate Professor Barry J. Cooper <u>barry.cooper@unisa.edu.au</u>) is the designated co-ordinator.

The historical symposia suggestions under the "History of Geoscience" theme are listed as

- 1. General contributions on the history of geology.
- 2. Historical studies of Gondwana.
- 3. Local (indigenous) understanding of geology.
- 4. History of fossil man investigations.
- 5. History of geology over the past 50 years.

Field trips

A one-day pre-Congress field trip is being planned around Cape Town by INHIGEO Vice President North America Greg Good on Saturday 27th August 2016. It will cater primarily for INHIGEO members. The exact itinerary of this field trip is not yet worked out but the idea is to visit several historical sites near Cape Town visited by John Herschel and Charles Darwin in their geological fieldwork.

A general day excursion for all Congress participants during the Congress will visit the historically important "Sea Point contact".

- Abstract submission closed on 31st January 2016.
- Early Bird Registration closed on 31st May 2016.

www.inhigeo.org

FUTURE INHIGEO SYMPOSIA

Future venues/dates for the annual INHIGEO symposia are as follows:

2017 42nd Yerevan, Armenia (12th–18th September; 50th anniversary INHIGEO conference).

2018 43rd Mexico City, Mexico (4th–14th November).

2019 44th Como/Varese, Italy.

- 2020 45th New Delhi, India.
- **2021** 46th Poland.



Leibniz-Sozietät der Wissenschaften zu Berlin e.V.

begründet 1700 als Brandenburgische Sozietät der Wissenschaften

HANS STILLE (1876-1966)—GEOLOGIST WITH INTERNATIONAL IMPACT 14th OCTOBER 2016 in BERLIN

Organized by the Leibniz-Society of the Sciences (Leibniz Sozietät der Wissenschaften zu Berlin e.V.)

1ST CIRCULAR AND CALL FOR CONTRIBUTIONS

Hans Stille (1876–1966) deserves to be honoured as a geologist with international impact despite difficult times, as academic teacher at the universities of Göttingen and Berlin, Member and Vice President of the Academy of Sciences (Berlin). We invite presentations (also poster contributions) covering the following two topics: i) The historical perspective on life, scientific work, and influence of Hans Stille; ii) New aspects of global tectonics (plate tectonics), preferably in relation to the views of Hans Stille.

Prof. Dr. Hans Stille became an Ordinary Member of the Prussian Academy of Sciences in 1933. This Academy is the predecessor of the present Leibniz-Sozietät der Wissenschaften zu Berlin constituted in 1992. It was founded in the year 1700 under Gottfried Wilhelm Leibniz as its first president. Hans Stille was a Secretary of the Mathematical-Physical Class of the Preußische Akademie der Wissenschaften from 1937. After the closure of the Academy in 1945, he was one of the members who worked, successfully, for a re-opening, now as Deutsche Akademie der Wissenschaften zu Berlin from 1st July 1946. Since then, until the end of his election period in 1951, he acted as its Vice President. In addition to his ordinary membership of the Gesellschaft der Wissenschaften zu Göttingen (from 1916, secretary 1925–1932) and in the Preußische Akademie der Wissenschaften, Hans Stille was a member of the Leopoldina (from 1912), corresponding member of the Bayerische Akademie der Wissenschaften (from 1935), the Norwegian Academy of Sciences (from 1936), the Romanian Academy of Sciences (from 1944), the Austrian Academy of Sciences (from 1964). Hans Stille was awarded five honorary doctorates, and honorary memberships in numerous scientific societies.

Hans Stille, born in Lower Saxony, became internationally known as one of the founders of geotectonics. His particular aspect was the systematic, global comparison and correlation of orogenic processes in all of the continental regions of the earth. As an academic teacher, he founded a large school of his PhD students at the geological institutions of the universities at Göttingen (1913–1932) and Berlin (1932–1950), where comparative tectonics was a dominating topic. The list of academies corresponds to some extent with the areas which Stille and his PhD students worked on. It has to be completed with the regions of central Asia, Crimea, and North and South America.

This colloquium of the Leibniz-Sozietät is organized by its members A.M. Celal Şengör (Istambul), Reinhard O. Greiling (Karlsruhe), Heinz Kautzleben (Berlin), Rainer Kind (Potsdam), Axel B. Müller (Oslo) and Reimar Seltmann (London).

For the publication of the contributions to this colloquium, combined with those of the meeting of

November 2015, we are preparing a special volume in the journal *Global Tectonics and Metallogeny* (<u>https://www.schweizerbart.de/journals/gtm?l=DE</u>) by the publisher Schweizerbart. The deadline for the submission of the manuscripts will be shortly after the colloquium.

Please indicate your interest in participation as soon as possible, by e-mail. Contacts : Reinhard O. Greiling <u>r.o.greiling@kit.edu</u> Heinz Kautzleben@t-online.de

Leibniz-Sozietät der Wissenschaften zu Berlin e.V. Begründet 1700 als Brandenburgische Sozietät der Wissenschaften <u>www.leibnizsozietaet.de</u>



DINOSAURS AT BARNES 28th–30th OCTOBER 2016 London Wetland Centre, Barnes, London SW13 9WT

Over the last decade, the Dinosaur Society has followed the trend of many other interest groups by keeping its members up-to-date by social media such as Facebook and Twitter. However, the time has come to hold a

reunion, a Festival of Dinosaurs, with a one day conference as part of a three day gathering at the beautiful London Wetland Centre in Barnes, south-west London.

The Wetland Centre is a fantastic setting for such a meeting as the landscape replicates the background of the dinosaur epoch although the vegetation is almost completely different.

The Festival will take place on 28th–30th October with the Conference being held in the magnificent, newly renovated lecture theatre. The emphasis of the lecture programme will be on the evolution, physiology and palaeogeography of dinosaurs.

Our guest speakers include **Romain Amiot** (University of Lyon, Fr.), **Eric Buffetaut** (CNRS, Paris, Fr.), **Michael Benton** (Bristol University), **David Hone** (QMU London), **Jeff Liston** (Peterborough Museum), **Angela Milner** (NHM, London), **David Martill** (University of Portsmouth), **Richard Moody** (Kingston University, London), **Darren Naish** (Southampton University), **Bob Nicholls** (artist, Bristol), **David Norman** (Cambridge University).

Hopefully, there will be a daily forum and 2–3 lectures on both 29th and 30th.



Dinosaur art will be a major component of all three days with a gallery and several art work-shops. Our invited great artists including John Sibbick, Luis Rey, Bob Nicholls, John Conway and Mark Whitton, together with several dinosaur sculptors/modellors.

We can confirm the support of numerous companies and institutions including the Geologists' Association, Rockwatch, the Kent Geologists' Group.

The Dinosaur Society acknowledges our patron Sir David Attenborough, OM, FRS for his continued support.

Registration is now open (see next page)

If you are interested in joining us in October, please complete the following form and mail to:

Professor R. J. Moody, Dinosaur Society, Gnoll House, 15 Forster Road, Guildford, Surrey KT6 3LE. Tel: 07973273623. Email: <u>rtj.moody@virgin.net</u>

REGISTRATION FORM

The Dinosaur Society Conference, London Wetland Centre, Barnes, London SW13 9WT Friday 28th October 2016 9.30–5.30.

Registration: **£40.00** for **Member** or Affiliate Group Member, **£45** for **Non Member**. <u>Affiliation</u>: **HOGG**, Geologist's Association, Rockwatch, Geological Society, Palaeontology (online group).

Cheques payable to the *Dinosaur Society*. or Bank Transfer to Dinosaur Society: NatWest sort code 600427 a/c. no. 94172528 Reference: Wetland

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GEOLOGISTS' ASSOCIATION SOUTH-EAST REGIONAL CONFERENCE SATURDAY 26th NOVEMBER 2016 Exhibition Hall of Worthing College (at their campus on the northern outskirts of the town)



Geology, Landscape and Man in South-East England

PROGRAMME

9.00–9.40	REGISTRATION AND WELCOME
9.40-10.20	Chris Duffin (Natural History Museum) The Iguanodon: iconic dinosaur of the Weald
10.20-11.00	Julian Murton (University of Sussex) South-east England as a periglaciated landscape
11.00-11.30	COFFEE/BISCUITS
11.30-12.10	Sanjeev Gupta (Imperial College, London) The English Channel megaflood:
	implications for pre-history
12.10-12.50	Julie Gardiner (Oxbow Books) Flint Mining: organisation, operation & significance
12.50-2.00	BUFFET LUNCH
2.00 - 2.40	Brian Short (University of Sussex) Victorian Ashdown Forest: environment and politics
2.40-3.20	Jeremy Hodgkinson (Wealden Iron Research Group) <i>Iron Working in the High Weald:</i> 1600–1770
3.20-4.00	Annabelle Hughes (Wealden Buildings Study Group) <i>The Wealden House: general model or complete misnomer?</i>
4.00-4.30	TEA/BISCUITS
4.30-5.10	Tom Dommett (NT Regional Archaeologist) <i>The changing landscapes of Petworth Park: mediaeval to modern</i>
5.10-5.50	Roger Smith (Southern Testing Geoconsultancy) The geological hazards of South-East England—and how to avoid them!

REGISTRATION FORM

Conference Fee for the day is still only $\pounds 25$, including coffee/tea/biscuits, buffet lunch and Conference publication. Conference Fee for full-time students is a paltry $\pounds 20$.

Name.....

Address.....

Please make your cheque payable to Anthony Brook and forward, with this completed form, to:

Anthony Brook, 15, Cambourne Court, Shelley Road, Worthing, BN11 4BQ Email: <u>anthony.brook27@btinternet.com</u>

MILITARY ASPECTS OF ENGINEERING GEOLOGY, PAST AND PRESENT

A joint meeting of the History of Geology Group (HOGG) and the Engineering Group of the Geological Society (EGGS)—non-members welcome

WEDNESDAY 16 NOVEMBER 2016 from 09.15 to 17.35

at the Geological Society, Burlington House, Piccadilly, London W1J 0BD

TO REGISTER FOR ATTENDANCE AT THIS MEETING

Please *either* register online at <u>http://historyofgeologygroup.co.uk/november-2016-military-aspects-of-engineering-geology-past-and-present/</u>

or complete the form below and send this with the appropriate cheque to:

Dr Edward P. F. Rose 13 Nea Road Highcliffe CHRISTCHURCH Dorset BH23 4NA

Registration fee covers the cost of admission to the meeting; coffee/tea during a morning break; sandwich lunch in the Lower Library; and afternoon coffee/tea.

Registration Form: Military Aspects of Engineering Geology: 16 Nov 2016

Name:	
Address:	
Telephone number:	
Email	
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Member's registration fee **£35** (HOGG / EGGS / Geological Society of London / Geologists' Association—please delete as appropriate)

Non-member's registration fee £40

I enclose a cheque payable to *HOGG* for £.....

HOGG STANDING ORDER MANDATE

Name of bank or building society
Branch address
Sort codeAccount number
Account name
Please pay the amount of £15 (fifteen pounds) to the History of Geology Group of the Geological Society (Santander Business Account, Sort code
Signed Date
PLEASE SEND THE COMPLETED MANDATE TO
David Earle (HOGG Treasurer) 61 Straight Road, Old Windsor, Berkshire SL4 2RT