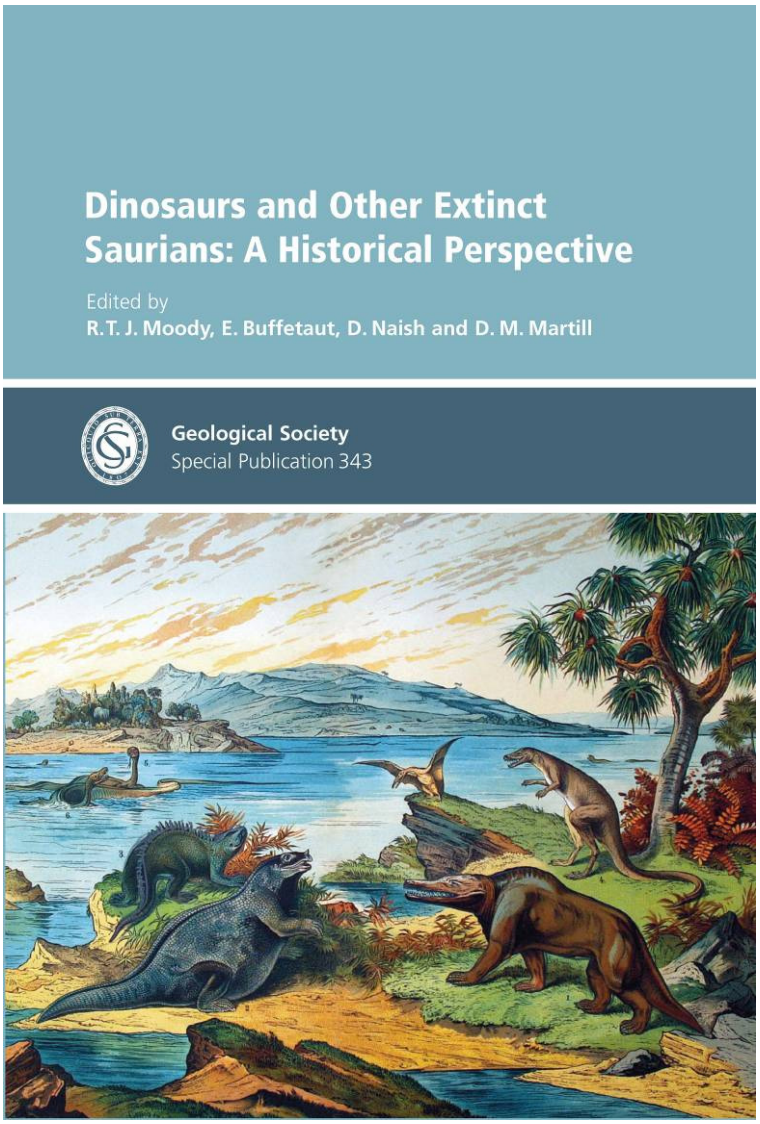
# HOGG

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




**Number 40**
**October 2010**

**Front cover**

The cover of the forthcoming Geological Society Special Publication 343 which brings together some of the papers presented at the HOGG meeting *Dinosaurs and other extinct saurians – a historical perspective* held at Burlington House on 6th – 7th May 2008. Further information about the book, which is scheduled for publication in November, appears on pages 10-11 of this newsletter.

A sequel to this 2008 meeting is being organized with the Société Géologique de France. *Dinosaurs – their kith and kin: a historical perspective* will be held in Paris in May next year (see page 8 of this newsletter for more details).

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**Editorial subcommittee**
Beris Cox (e mail: beris.cox@btinternet.com)
David Earle (e mail: daearle@btinternet.com)
Dick Moody (e mail: rtj.moody@virgin.net)

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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).**

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# LETTER FROM THE CHAIR

After three years, the time has come for me to write my last 'Letter from the Chair'. So perhaps I may be permitted to adopt a rather valedictory tone. Time has passed quickly since the Geological Society Bicentennial in 2007 and the new Committee formed at that time has provided much useful stability and steady progress after the rush of bicentennial events. Our funds have remained healthy and we have continued with the publications output via the Geological Society Publishing House. Special Publication 343, to be published in November and featured on the cover of this newsletter, is the product of a very successful HOGG two day conference organised by its editors in May 2008. HOGG has contributed towards the cost of colour plates for a very fine volume that continues our tradition of quality publications, with a Special Publication appearing almost every eighteen months. I would especially like to thank all of those who contribute to the publications either as chapter authors or editors. It is a time consuming task producing such books and we are fortunate in HOGG and allied groups that there are so many who are willing to assist in this process. They are perhaps the unsung heroes who give up so much of their personal time to ensure that the relatively unexplored byways of the history of our discipline are recorded. A new initiative which is being explored is the production of popular level publications and this is continuing with Nina Morgan acting as executive editor for the proposed series.

Another two day conference is planned for 16th-17th November this year on the subject of the History of Applied Geology, details of which appear elsewhere in this newsletter. The HOGG AGM will take place on 16th November during this meeting when your current Chair will retire and a new Chair take over with fresh faces added to the committee. They will take up their duties in January 2011 and it will be a particularly important time for the new committee leading up to the INHIGEO meeting in Manchester in 2013.

The details of the Government Spending Review should be known by the time this newsletter is distributed and there may well be significant changes that we will all have to deal with. This time of change provides fresh opportunities, particularly in the rescuing of historic collections and archives. In my last newsletter, I mentioned that I, along with several colleagues, was about to rescue a collection that was under threat of disposal. This collection retained many important historical items with original documentation, as well as type and figured palaeontological material. I am pleased to report that the collection has been saved and split between Manchester University Museum (invertebrate fossils and some minerals), National Museums Liverpool (palaeobotanical and Carboniferous vertebrate material, as well as the thin section collection) and Leicester University (the remainder of the data palaeontological material) with the non-data teaching material going to Altrincham Grammar School. In the light of this happy outcome, I would urge HOGG members to remain alert for the possible dispersal of archives and collections. As I mentioned before, some of our lesser known geological collections, documentation and library heritage could be lost during a time of rapid economic cuts if suitable advice is neither sought nor forthcoming. We need to be mindful that many of the lesser known archives and collections are fruitful hunting grounds for historical research and may shed light on more significant events. Fortunately, HOGG working alongside other interest groups, such as the Geological Curators Group (GCG), is in a position to monitor such events closely.

Finally I would like to thank your hard-working committee for all the support and encouragement they have given me over the past three years. My thanks go to the outgoing members of the committee for their dedication and enthusiasm which have helped to facilitate the organisation of

major meetings as well as the development of several outreach initiatives designed to increase awareness of HOGG and to reach a wider audience. Last, but by no means least, I thank all members of HOGG for your continued support.

Alan J. Bowden
September 2010

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## HOGG COMMITTEE

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

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## COMMITTEE VACANCIES
## (repeated from Newsletter 39)

Four members of the current HOGG committee will be standing down in January 2011 when their term of office comes to an end.

Two nominations to fill these vacancies have already been received but we need at least two more. New committee members will be voted in at the 2010 AGM, which will be held on November 16th during HOGG's Applied Geology meeting at Burlington House, and will take up their positions on January 1st 2011. Ordinary committee members serve for three years and are expected to attend four committee meetings, held at Burlington House, each year; travel expenses are paid. If more than four nominations are received, a ballot will be held.

If you are interested in joining the HOGG committee, please contact the HOGG Secretary:

Dr Leucha Veneer
Centre for the History of Science, Technology and Medicine
Room 2-66 Simon Building
University of Manchester
Brunswick Street
Manchester
M13 9PL e mail leucha.veneer@manchester.ac.uk

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## FUTURE HOGG EVENTS

* **HISTORY OF APPLIED GEOLOGY**
**16th – 17th NOVEMBER 2010**
**Burlington House, Piccadilly, London**
**(including HOGG AGM)**
Programme, call for student posters and registration form in this newsletter (see next page)

* **GEOLOGICAL COLLECTORS AND COLLECTING**
**4th - 5th April 2011**
**Natural History Museum, South Kensington, London**
More information on page 7 of this newsletter

***DINOSAURS – THEIR KITH AND KIN: A HISTORICAL PERSPECTIVE**
**2nd – 7th May 2011**
**Société géologique de France, Paris**
More information on page 8 of this newsletter

* **GEOLOGY AND MEDICINE**
**1st – 2nd November 2011**
**Burlington House, Piccadilly, London**
**(including HOGG AGM)**
Call for papers in this newsletter (see page 9)

* **METALLIFEROUS MINING IN THE SOUTH-WEST AND ITS LEGACY**
**November 2013** (note change of date from last newsletter)

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# HISTORY OF GEOLOGY GROUP

## HISTORY OF APPLIED GEOLOGY

### PROGRAMME

**DAY 1 TUESDAY 16th NOVEMBER 2010**

09.30-10.30 **Registration. Tea and Coffee**

10.30-11.00 *Anglo-Irish "advances"?: William Smith (1769-1839), James Ryan (c.1770-1847) and the invention of scientific mineral prospecting* Hugh Torrens
11.00-11.30 *The life and work of Thomas Sopwith (1803-1879): mining engineer & surveyor and geologist* David Greenwood

11.30-11.45 **Short break**

11.45-12.15 *W. Henry Penning: A 19th century applied geologist* Martin Culshaw and Alan Forster
12.15-12.45 *The contribution of the Royal School of Mines to Applied Geology* Dick Selley
12.45-13.15 *John Stuart Webb FREng and Applied Geochemistry at the Imperial College of Science and technology, London* Richard Howarth

13.15-14.30 **Lunch (including HOGG AGM chaired by Alan Bowden)**

14.30-15.00 *The ideas, social pressures and practical needs driving the development of groundwater supplies in the UK over the past 400 years* John Mather
15.00-15.30 *Luna B. Leopold – hydrogeologist* Steven Wainwright
15.30-16.00 *John Milne: father of modern seismology - his life and work* Paul Kabrna

16.00-16.30 **Tea and posters**

16.30-17.00 *Sand, wind, war and water - the extraordinary work of Ralph Bagnold* Michael Welland
17.00-17.30 *Agates and WW2* Alan Bowden
17.30-18.00 *The ground instability legacy resulting from historical chalk mining in south-east England* Clive Edmonds

**Questions and answers**

18.15 Wine Reception (Lower Library)

19.30 Dinner at Getti's restaurant, Jermyn Street

**DAY 2 WEDNESDAY 17th NOVEMBER 2010**

09.30-10.30 **Single Day Registration**. **Tea and Coffee**

10.30-11.00 *European "schools" of applied micropalaeontology: science driven by conflict and competition* Haydon Bailey
11.00-11.30 *Interesting claims for* Nummulites *from Herodotus to madness!* Dick Moody

11.30-11.45 **Short break**

11.45-12.15 *The history of petroleum exploration: multiple evolving technologies based on a handful of underlying principles* Ken Chew and Anthony Spencer
12.15-12.45 *Aspects of geological employment in the extractive industries and the rise of the EIG* Geoff Walton
12.45-13.15 *Geomaterials* Ian Simms

13.15-14.30 **Lunch and posters**

14.30-15.00 *Mineral exploration in Britain - the last 50 years* Tim Coleman
15.00-15.30 *Peak District mining* Richard Shaw
15.30-16.00 *Scientific advice vs government policy: the case of the Haswell Colliery disaster (1844)* Anthony Brook

16.00-16.30 **Tea and coffee**

16.30-17.00 *Contaminated land* Paul Nathanail
17.00-17.30 *Geology and landslips* Ed Bromhead
17.30-18.00 *UK site investigation in the early 1960s* Max Barton

18.00 **Closing remarks**

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**REGISTRATION FORM AT THE BACK OF THIS NEWSLETTER**

HISTORY
OF
GEOLOGY
GROUP

# HISTORY OF APPLIED GEOLOGY

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

**Conference Venue: Geological Society, Burlington House, Piccadilly London, WIJ OBG**

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

**CONFERENCE ORGANISERS:** Richard T. J. Moody, David Earle, Helen Reeves

# CALL FOR STUDENT POSTERS

The practice and application of geological methods and skills probably predate geology as a written or pure science. Applied Geology has developed rapidly over the last 50 years but its roots are founded in the work of builders, craftsmen, engineers, surveyors and natural historians over hundreds even thousands of years. The use of metals, building materials and medicines stimulated people into acquiring local and regional knowledge of outcrops, and the association of minerals and materials to a common source. With time, new areas of knowledge were developed such that modern applied geology comprises a host of disciplines based on knowledge of core geological skills. Applied geologists use their knowledge to the benefit of society, the economy and an ever-changing environment.

Student posters should focus on the history of Applied Geology over the last 200 years; bringing to life the work of individuals or the development of institutions that have played major roles in the development of a diverse but increasingly important science.

**The posters will be assessed on 16th-17th November 2010 with prizes of £100 and £50 awarded to the winner(s) and runners up.**

STUDENT REGISTRATION FEE FOR MEETING £5.00.

**For further information, please contact David Earle**

daearle@btinternet.com

# HOGG Conference on Geological Collectors and Collecting
# April 4th – 5th 2011
# Natural History Museum London

The HOGG conference on *Geological Collectors and Collecting* will take place on 4th - 5th April 2011 at the Flett Theatre of the Natural History Museum in London, and is timed to coincide with the Christies planned sale of natural history artefacts.

**CONVENORS: John Henry** (HOGG member, and proprietor of 19th Century Geological Maps)
**Sarah Long** (Head of Palaeontology Collections at the Natural History Museum)
**Nina Morgan** (Science writer and HOGG committee member).

This two day event will include talks, posters, workshops and behind-the-scenes tours on topics of interest to collectors of geological material of all kinds, including books, maps, minerals and fossils, as well as discussions about historical collections and policy issues related to collections and care of collections. Workshops will cover topics ranging from photography to book and map repair and conservation of objects. The behind-the-scenes tours will provide an opportunity to view material in the NHM library and the Palaeontology and Mineralogy departments that is not normally on display. An early evening event to view geological items on offer at the Christies Natural History sale is also planned.

**SPEAKERS** include
**Julian Wilson** of Christies on the history of collecting
**Tom Sharpe** of the National Museum of Wales on that Museum's geological map collection
**Monica Price** of the Oxford University Museum of Natural History on the Corsi collection of ornamental stones
**Karolyn Shindler** on the life and letters of the 19th century fossil collector Barbara Hastings
**Jonathan Larwood** of Natural England on the history of collecting policies
**John Faithfull** of the Hunterian Museum, Glasgow on William Hunter's mineral collection
**Richard Edmonds** of Dorset County Council on the contributions made by fossil collectors to science
**Richard Selley** of Imperial College London on the importance of access to private collections
**Christopher Toland** on information revealed by collecting
**Stuart Baldwin** on book collecting
**Chris Collins** of the Natural History Museum on the history of conservation practices at the NHM
**Richard Fortey** of the Natural History Museum welcoming delegates with stories describing life behind the scenes at the NHM, based on his book *Dry Store Room No. 1*

**REGISTRATION** will begin at the end of October, when forms, including a preliminary programme of events, can be downloaded from the HOGG pages of the Geol. Soc. website www.geolsoc.org.uk/hogg; an e-mail will be sent to members advising them when registration opens. Alternatively, forms may be requested by e-mail from Nina Morgan (ninamorgan@lineone.net).

A poster about the conference will also be available for downloading from the HOGG website.

To receive further information and notices about the conference or to propose a poster (our speakers list is now full!), e-mail Nina Morgan (ninamorgan@lineone.net).

**DINOSAURS – THEIR KITH AND KIN: A HISTORICAL PERSPECTIVE**

**an international symposium**

**Société géologique de France, Paris, 2nd-7th May 2011**

**First Circular**

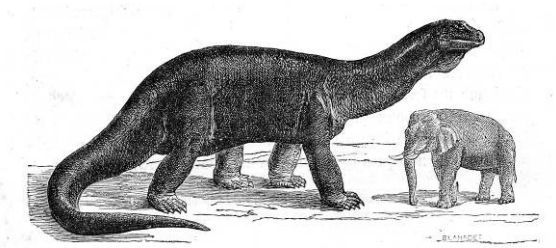

Fig. 297. — Forme et grandeur probables de l'*atlantosaure* : le plus grand des animaux qui aient jamais existé (longueur : 35 mètres).

Following the successful meeting on *Dinosaurs and other extinct saurians: a historical perspective* held in 2008 at the Geological Society, London, a follow-up symposium on

**DINOSAURS – THEIR KITH AND KIN: A HISTORICAL PERSPECTIVE**
**will be held at the Société géologique de France, Paris, in May 2011**.

**Papers are invited** on all aspects of the history of research on dinosaurs (including birds) and extinct non-mammalian tetrapods. Contributions dealing with the work of individual palaeontologists (professional or amateur), institutions, collections, palaeontological expeditions, fossil folklore and artists' reconstructions are welcome. Both posters and oral presentations will be accepted.

There will be an opportunity to publish papers issuing from this meeting in a symposium volume (details to be provided later).

**Field trips** to palaeontological sites of historical importance will be organised before and after the meeting (details to be provided later). An exhibition of historically important fossil specimens will be organised at the Muséum National d'Histoire Naturelle during the meeting.

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**Those interested in attending the meeting** are kindly requested to send their
name
affiliation
address (including e mail)
title of proposed oral communication and/or poster

to Prof. Richard Moody (rtj.moody@virgin.net) before January 31st 2011.

**Organisers**

Eric BUFFETAUT (CNRS/Ecole Normale Supérieure, Paris, France; eric.buffetaut@sfr.fr)
Richard MOODY (Kingston University, Kingston, UK; rtj.moody@virgin.net)
Nathalie BARDET (CNRS/MNHN, Paris, France; bardet@mnhn.fr)
Jean LE LOEUFF (Musée des Dinosaures, Espéraza, France; jeanleloeuff@yahoo.fr)

**H**ISTORY
**O**F
**G**EOLOGY
**G**ROUP

# THE HISTORY OF GEOLOGY AND MEDICINE

## International Conference
## 1st-2nd November 2011

**Conference Venue: Geological Society, Burlington House, Piccadilly London, WIJ OBG**

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

Medicine was essentially the birthplace for both natural science and geology, and the first descriptions of rocks, minerals and fossils are often attributed to early physicians. One of the first pharmacies opened on the Arcadian Way in Ephesus around 400BC whereas the Egyptians prescribed mineral salts ground by mortar and pestle. Nicholas Steno (1638-1686) was an early example of a physician cum palaeontologist, and James Parkinson (1755-1824) was a founding father of the Geological Society of London. This conference is dedicated to the memory of such personalities.

**CONFERENCE ORGANISERS**

Richard T. J. Moody
Chris Duffin
Christopher Gardner-Thorpe

## CALL FOR PAPERS

**Title, abstract (up to 500 words) and an associated image to be submitted by 6th March 2011**

Conference Topics:

The Contributions of Physicians to the Development of Geology
Lithotherapy-Lithopharmacy: The Pharmaceutical use of Geological Materials
Medical Geology and Forensics
Physicians, Mineral and Thermal Waters
Miscellanea

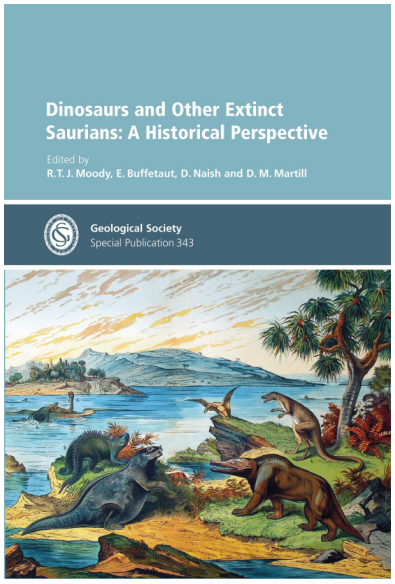
**Please forward abstracts to Richard Moody:** rtj.moody@virgin.net

**For further information contact**:
Chris Duffin e mail: c.duffin@blueyonder.co.uk
Christopher Gardner-Thorpe e mail: cgardnerthorpe@doctors.org.uk

The Geological Society

# Special Publication 343

## Dinosaurs and Other Extinct Saurians: A Historical Perspective




The discovery of dinosaurs and other large extinct 'saurians'— a term under which the Victorians commonly lumped ichthyosaurs, plesiosaurs, pterosaurs and their kin—makes exciting reading and has caught the attention of palaeontologists, historians of science and the general public alike. The papers in this collection go beyond the familiar tales about famous 'fossil hunters' and focus on relatively little-known episodes in the discovery and interpretation (from both a scientific and an artistic point of view) of dinosaurs and other inhabitants of the Mesozoic world. They cover a long time span, from the beginnings of 'modern' scientific palaeontology in the 1700s to the present, and deal with many parts of the world, from the Yorkshire coast to Central India, from Bavaria to the Sahara. The characters in these stories include professional palaeontologists and geologists (some of them well-known, others quite obscure), explorers, amateur fossil collectors, and artists, linked together by their interest in Mesozoic creatures.

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Palaeontology and Geobiology

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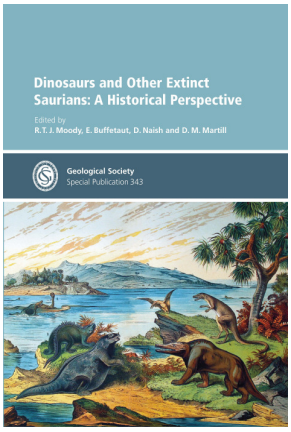
All 2010 prices and postage valid until 31st December.

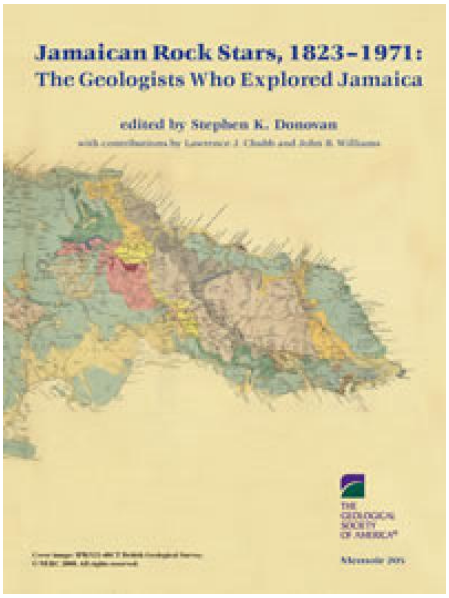
*Please allow up to 28 days for delivery of in stock items in the UK. Parcels to Europe and the Rest of the World are sent by surface mail and can take 6 to 12 weeks to arrive. (Air courier rates available on request).*

# Special Publication 343
# Contents and Authors



# BOOK REVIEWS

***Jamaican Rock Stars, 1823-1971: The Geologists Who Explored Jamaica***
Edited by Stephen K. Donovan with contributions by Lawrence J. Chubb and John B. Williams. 2010. The Geological Society of America Memoir 205, v + 108pp.
ISBN 9780813712055 (hardback) Available from the Geol.Soc. Bookshop, list price £36.00, fellows' price £25.00.




Review by Tom Sharpe[1]

The latest addition to the Memoirs of the Geological Society of America is this volume on the history of Jamaican geology edited by Steve Donovan. Donovan, now at the Nationaal Natuurhistorisch Museum-Naturalis in Leiden, was formerly in the Department of Geology at the University of the West Indies at Mona in Kingston. To describe Steve Donovan merely as editor of this memoir is to understate his contribution; he has taken three previously-published papers, two by Lawrence J. Chubb and one by Chubb and John B. Williams, and added three new papers of his own, plus an introductory chapter In addition, he provides each of the reprinted papers with an abstract, illustrations, notes, and additional recent references.

In the first paper, Donovan introduces us to the "Jamaican rock stars" and explains the background and structure of this memoir. The papers in this volume focus on nine principal characters in Jamaican geology between 1823 and 1971. With an absence of indigenous geologists, all were incomers, mainly from the UK or USA, but including one from Latvia. We are also given, in this introduction, a succinct summary of our current understanding of the geology of Jamaica which helps to put the research of the rock stars into context.

The story of Jamaican geology begins with Henry Thomas De la Beche (1796-1855), best known in the UK as the founding Director of the British Geological Survey. He is the subject of the second paper in this memoir. First published in *Geonotes* in 1958, this paper contains a detailed account of De la Beche's visit to his Jamaican estates in 1823-24 and the geological work he undertook during his first six months on the island. The resulting publications, most notably his 1827 paper in the *Transactions of the Geological Society of London*, made De la Beche the acknowledged expert on the geology of Jamaica until his death in 1855.

The paper in this volume draws on the work of F.J. North of the National Museum of Wales with whom Chubb was in correspondence in the 1950s, and on the papers and diaries of De la Beche in the collections there. *Geonotes,* a mimeographed production of the Geological Society of Jamaica in the 1950s and early 60s, has never been the easiest publication to get hold off, although we've been fortunate here in the National Museum of Wales in having a copy of this issue of the journal sent by Chubb to North. Along with Paul McCartney's 1977 book on De la Beche, *Observations on an observer*, and North's 1930s papers in the *Transactions of the Cardiff Naturalists' Society*, Chubb's paper has long been a standard reference on the life of De la Beche. This reprint is enhanced by the addition of seven illustrations, including a fine full-page colour reproduction of De la Beche's 1827 geological map of the eastern half of Jamaica. (I am still the proud owner of a copy of this map, printed on a tee-shirt produced by Steve Donovan for the De la Beche Bicentennial Conference he organised in Kingston in 1996). The map has been described as the "first geological map of any part

of the western hemisphere", although arguably that title should fall to William Maclure and his 1809 map of the eastern United States. Pedants might also point out that as most of England (and all of Wales) lies west of the Greenwich meridian, there are other contenders. Nevertheless, De la Beche deserves his recognition as the 'Father of Jamaican geology'.

Donovan adds notes where Chubb's paper refers to geologists such as William Smith, Roderick Murchison, Adam Sedgwick and others, but the references Donovan gives for each could have been better chosen; directing readers to the *Oxford Dictionary of National Biography* may be of more use than some of the references he gives. Donovan also gives a most useful stratigraphic table relating De la Beche's 1827 succession to its modern equivalent.

Another Chubb biographical paper follows, on the life and work of Lucas Barrett (1837-1862), first published in *Geonotes* in 1962 to commemorate the centenary of Barrett's death. Barrett, from London, was appointed the first Director of the Geological Survey of Jamaica in 1859 at the age of 22. He had previously participated in dredging expeditions in the North Atlantic and Arctic, and published several papers of results and had also worked as curator of the Woodwardian Museum at Cambridge as an assistant to Adam Sedgwick at a time of significant growth of the collections with such acquisitions as Thomas Hawkins' marine reptiles from the Lias. Although an experienced palaeontologist, his only mapping experience was his production of a geological map of Cambridgeshire published in 1857.

Chubb's paper describes the circumstances by which this young man came to be the first director of the Geological Survey of Jamaica and how he immediately came onto conflict with his older assistant, James Gay Sawkins (1806-1878). Sawkins had previously been assistant to George Parkes Wall on the geological survey of Trinidad, and although without any formal training in geology, had several years of experience of field geology in the West Indies.

During the mapping of eastern Jamaica, Barrett made two significant discoveries: the well-preserved molluscan fauna of the Miocene Bowden Shell Bed, and the discovery of Cretaceous fossils in beds thought by De la Beche, on lithological grounds, to be Palaeozoic. Initially Barrett and Sawkins worked together, but soon they fell into a dispute about the mapping which seems to stem from Sawkins' resentment of a younger, and in his opinion, less experienced, field geologist. Chubb describes how Sawkins took whatever opportunities he could to undermine Barrett's position with the Jamaican authorities.

Following a period spent in England in 1862, mainly connected with the International Exhibition in London, Barrett returned to Jamaica equipped with a divers dress, pump and 100 feet of air hose with a view to sampling the fauna of the shallower waters around the island. Within a month of his return, he died, probably of the bends while diving off Port Royal.

On hearing the news, Sawkins, who had always actively plotted to have Barrett dismissed and claimed credit for work done by him, immediately, and successfully, proposed he be promoted to the newly created vacancy. Although under Sawkin's directorship, the survey produced the first geological map of the whole island in 1865 and a memoir in 1869, Chubb describes how the quality of the survey's work declined after Barrett's death owing to Sawkins' lack of geological and palaeontological knowledge compared with that of Barrett. Chubb tells the story of these two men well, and it is clear that had Barrett not died at so young an age, he could well have become a major figure in geology in the second half of the nineteenth century.

The next paper is a new contribution by Donovan, on the American geologist Robert Thomas Hill Jr (1858-1941). Donovan describes Hill's fascinating career before he went to Jamaica and shows that, although better known for his work on the geology of Texas and Panama, Hill published another

milestone memoir on the geology of Jamaica in 1899. During the course of two years, 1896 and 1897, Hill traversed over 800 miles of Jamaica as part of a systematic survey of the Antilles. An experienced surveyor, he built on the work of his predecessors, and recognised that Sawkins' geological succession was incorrect. This he directly attributed to the early death of Barrett and the inadequate geological and palaeontological knowledge of Sawkins. Donovan discusses Hill's understanding of Jamaican stratigraphy and shows that it stands comparison with our current knowledge. Hill was the first to describe the geological history of Jamaica and, with his field experience on other islands in the Caribbean, he was able, for the first time, to put it into a regional context.

Donovan's next paper describes the work of a trio of geologists in the 1920s and 30s, Wendell P. Woodring (1891-1983), Charles A. Matley (1866-1947) and Charles T. Trenchmann (1884-1964). Woodring, from Pennsylvania, was a palaeontologist who worked on collections from the Pliocene Bowden Shell Bed of eastern Jamaica. Much of his career was spent with the US Geological Survey but his *magnum opus* was a six-volume monograph on the geology, stratigraphy and palaeontology of Panama. Although he studied the Bowden fauna for his PhD in 1916 and worked on the material for many years subsequently, his research was all based on museum collections and it was not until 1952 that he visited the site.

Much of Donovan's paper is taken up with the work of two English geologists, Charles Matley and Charles Trenchmann and their disagreements. Matley was an English career civil servant and an enthusiastic amateur geologist whose spare time and holidays were spent researching his local geology. In Birmingham, his home town, he attended evening classes taught by Charles Lapworth and these led to the award of an external BSc from the University of London. He is best known for his work on the Precambrian of Anglesey and Snowdonia. Following his retirement from the civil service in 1920, Matley was appointed to the geological survey of Jamaica. This work lasted only three years, but during this time Matley prepared a new map of the Kingston district and, based on his experience of mapping on Anglesey, recognised what he regarded as a Basal Complex to the Jamaican sequence.

Trenchmann, from County Durham, was awarded a DSc from the University of Durham for his research on the Zechstein of NE England, and following the sale of his family's cement works to ICI in 1924, had the means and the leisure to devote to geology and archaeology. During the summers, he worked in England and in winter, he headed overseas, particularly to the Caribbean. He made significant contributions to Caribbean geology, especially his study of Jamaican molluscs. He actively disagreed with Matley's idea of a Basal Complex in Jamaica in a number of papers in the *Geological Magazine* between 1936 and 1942, and instead proposed a "Theory of Mountain Uplift". Trenchmann's ideas were so at odds with the mainstream that most of what he wrote on this subject was published privately. This was especially the case with a paper which the British Association for the Advancement of Science refused to publish, and which Trenchmann published himself under the title of *The British Association for the suppression of Science or a new explanation of mountain uplift based on lunar gravitation and oceanic pressure*. Donovan spends some time discussing Trenchmann's ideas in the context of mountain building theory in the decades before plate tectonics.

Chubb and John B. Williams contribute the next chapter, first published in *Geonotes* in 1961, on Professor Verners Aleksandrs Zans (1904-1961). Born in Latvia, Zans worked at the University of Riga in the 1930s, pursuing a range of geological interests in Scandinavia. Chubb and Williams tell of Zans' harrowing wartime experiences and how, with a shortage of British geologists immediately following the war, he came to be appointed by the Colonial Office to the Geological Survey of Jamaica. As head of the Jamaican Survey from 1949 until his death in 1961, Zans oversaw a huge expansion of the Survey from two members of staff to forty (including Chubb and Williams), as well as the publication of a new geological map of Jamaica. This was also a time of increasing interest in

the economic geology of the island, especially in bauxite and gypsum. Through the use of several verbatim accounts, this paper provides a fascinating and entertaining insight into what field geology was like in Jamaica in the 1950s and describes the growth and development of the Survey into a professional organization.

Fastidious and perfectionist, Zans procrastinated in the production of a new geological map of Jamaica which was only completed by some subterfuge by his staff and published, as a provisional edition, in 1958. The arrival of the first new map of the island since 1865 was well received internationally, although Charles Trenchmann, back in County Durham, was, unsurprisingly, less impressed.

The final chapter, again by Donovan, is, appropriately, an appreciation of Lawrence J. Chubb (1887-1971), contributor to three papers in this volume and one whose story is intimately linked with both the development of the Geological Survey and the Geological Society of Jamaica. Following the First World War, at the age of 31, Chubb entered University College London where he graduated in 1922 and was to remain on the staff for a quarter of a century. Upon his retirement at the age of 62, Chubb took up a post with the Jamaican Geological Survey and, in 1962, became acting Director following the sudden death of Zans. Donovan describes Chubb's work on the Cretaceous stratigraphy of Jamaica and his encounters with the irascible Trenchmann as well as Chubb's involvement with the formation in 1955 of the Geological Society of Jamaica, originally as a Group of the Geologists' Association, and his interest in the history of Jamaican geology. This final contribution brings the volume neatly back to where it started, with Chubb's paper on De la Beche.

Steve Donovan has produced a fine volume which no doubt will be the standard work on the history of geology in Jamaica for years to come. And he has done us a great favour by reproducing three interesting and useful hard-to-find papers. Every paper is well-written and readable, even entertaining. The book is packed with information about the development of our understanding of the geology of Jamaica. It must have taken a lot of work to put this volume together, presumably involving a lot of copy typing or hours of scanning and editing. It is therefore probably churlish to complain about the absence of an index. That's my only criticism. Buy it, read it and enjoy it.

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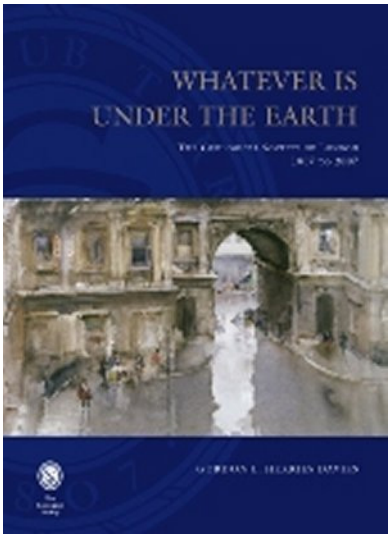
***The following Essay Review by David Oldroyd[1] was prepared for the journal* Metascience. *Now that it has been published in their* Online First *edition (9th September 2010), we have the permission of the* Metascience *editors and the author to include it here.***

THE GEOLOGICAL SOCIETY'S BIRTHDAY

***Whatever is Under the Earth: The Geological Society of London 1807 to 2007***
Gordon L. Herries Davies. 2007. The Geological Society, xiii + 356pp.
ISBN 978-1-86239-214-4 (hardback) £50.00 (GSL fellows £25.00, other societies £30.00)

***The Making of the Geological Society of London***
C. L. E. Lewis and S. J. Knell (eds). 2009. The Geological Society. Geological Society Special Publications, 317, xii + 471pp.
ISBN 978-1-86239-277-9 (hardback) £120.00 (GSL fellows £60.00, other societies £72.00)




The Geological Society (of London) (GSL) had its 200th birthday in 2007 and the doyen of history of geology in Britain, Professor Gordon Herries (GHD) of Trinity College Dublin was enlisted to write a commemorative volume suited to the occasion. A hundred years earlier saw the publication of *The History of the Geological Society of London* by Horace B. Woodward. Comparisons are inevitable but not necessarily invidious. Woodward did an excellent job as regards 'what was done by whom' and how, when, where, and to some extent why. But it was a volume of record, not literature. GHD, by contrast, succeeds in making his book a record of events, but with his well-known fluent and expansive (indeed magisterial) style he offers an accurate, informative, and elegant 'read'.

The Geological Society (which in time shed its 'of London', perhaps with the hoped-for implication that it was *the* society for geology that really mattered) is a remarkable institution: both a cultural club, a place for the exchange of news and views, the presentation of learned papers, and with a wonderful library that casts the spell of history over all who use it. Not only that, in my experience it is a friendly and efficient organisation. It also takes the history of geology seriously, as evidenced by its several publications devoted to that topic. And its archives are a treasure trove for historical researchers.

The fact that the body is called the *Geological* Society, rather than, say, the Mineralogical Society or the Geognostic Society, is deemed by some (notably the geohistorian Martin Rudwick) to be historically significant. It is suggested that the use of the term 'geological' marked a turning away from interest in the objects found in the Earth *per se*, or the German interests in mining and structures, towards the determination of the Earth's *history*, for the study of the Earth became an historical science around the turn of the century and this was manifested by the Society's adoption of de Luc's (supposed) neologism for its name. So although the Society was founded by a group of men whose main interests were initially mineralogical, this dominance soon declined, especially after about 1820 when William Smith's work came to be better appreciated. And while German geognosy had a strong foothold in Edinburgh, this was hardly the case in London.

A noteworthy feature of GHD's book is its being furbished with numerous (literary) conceits. The Society's history is presented as a grand analogue of the history of Earth itself or geological processes or concepts. Thus we have as chapter headings: 'The Creation 1807'; 'Primordial Life 1808–1825'; 'The Volcano Erupts 1825–1844'; 'The Dinosaurs 1844–1875'; 'Placid Sedimentation 1875–1907'; 'The Centenary Lode Autumn 1907'; 'Seismic Convulsions 1908–1924'; 'An Endangered Species 1925–1963'; 'Thrusting and Overturning 1964–2005'; and 'The Society on a Plate'. And there is an Appendix listing the Society's officers from 1807 to 2006 and a comprehensive Bibliography. On occasions, GHD lets a particular metaphor (analogy or simile) run for a whole paragraph. For example (p.16):

> "*The inaugural meeting had decided that the Society would convene on the first Friday in each month from November to June. So it was that the Members returned to the Freemason's Tavern on Friday 4 December 1807. Another of the Tavern's excellent dinners vanished from plates, and likewise libations from raised glasses. The Members then readdressed the task of rendering seaworthy their newly-launched barque. There were seams to be caulked and sails to be bent. Aikin, Babington, Greenough, Laird, and Pepys were constituted as a committee to formulate rules for the running of the ship. It was resolved to invite the Hon. Charles Greville to fly his flag as the Society's Patron . . . . The decision was taken that there should be a captain's cabin occupied by an annually elected President, and Greenough, the recently*

*elected Treasurer, was chosen as President for the year 1807–8. In his stead, Pepys was sent to the purser's office as the Society's new Treasurer.*"

Such a lengthy quote may seem superfluous but it does give a good idea of GHD's stylish style. The diligent and accurate Horace Woodward did not allow himself such literary licence and probably wouldn't have been allowed to write like that, even if he had wanted to. Things used to be more formal.

And if we look at the photograph (p. 183) of the stuffed shirts of 1907 in their stuffed shirts, at the task of downing their substantial (according to the menu, reproduced by GHD) Centenary Dinner, we can see what a difference a hundred years has made to society and to the Geological Society.

I would like to convey the impression, then, that this is a jolly kind of book. But it is also a work of serious scholarship, demonstrating the author's immense knowledge of the Society's history, and the relationship of that history to the social context in which geology evolved in Britain. Many details of episodes in the history of geology are deftly and lucidly summarized, so that this book is in a way an epitome of the historical development of geoscience as much as a social history.

But just considering the social history, we are given a pretty detailed account of the GSL's original conception, gestation, parturition, and maturation, and the way it had to struggle (for existence) with the Royal Society in its early days, the expansion during the great movement of science popularization in the nineteenth century, and the vicissitudes of the two World Wars (in which many geologists were involved). Membership, along with everything else, suffered during the Great Depression (as an 'Endangered Species') and in WWII, the Society's irreplaceable library holdings were dispersed into the safe keeping of rural members, and then all safely returned to London after the cessation of hostilities. Would this be possible today, I wonder?

Among many other issues, GHD gives particular attention to the Society's activities as a publisher, with the *Transactions*, the *Proceedings*, the *Quarterly Journal*, and the *Journal of the Geological Society*, as well as subsidiary publications such as *Geoscientist*. In relatively recent times, I learned from GHD, the Society's Publishing House, located in salubrious Bath, not London, has become a major source of income for the Society which has a hefty membership subscription but could not survive on that basis alone. It is quite eclectic in its offerings and its Special Publications series contains quite a number of historical volumes. The establishment of various specialist groups in different fields of geology or different parts of Britain has also helped the Society to thrive, and GHD provides detail of the gradual branching and enlargement of the Society and also the steps leading to its role as an accrediting body for professional geologists, giving warrant for their practical experience and competence, over and above their tertiary qualifications. However, it does not conduct formal examinations for the purpose of accreditation, as do medical colleges or other professional bodies.

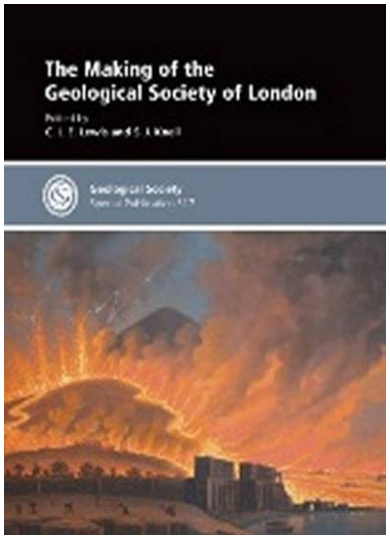
More specifically, the work of notable geologists such as Roderick Murchison, Charles Lapworth and Arthur Holmes is given appropriate attention, and descriptions are also given of some of the more interesting controversies that developed within the geological community in Britain over the years, such as that to do with 'Piltdown Man' or the Cambrian/Silurian fracas. Also, accounts of various field excursions are interestingly provided.

GHD's book has also done women proud. Of course, they now form a natural part of the GSL membership, and no one gives the question of females belonging to the Society much thought these days. But it was not always thus. It was for many years a *masculine* club, deemed suitable to a physically demanding kind of science. Female membership was actively discouraged by many and, unsurprisingly, the vast majority of the stuffed shirts of the 1907 dinner covered male torsos. GHD

carefully and sympathetically tracks the gradual penetration of women into the Society. So while today it is no longer an issue, this penetration into what was for more than a century an almost exclusively male preserve is a matter of no little interest.

Of course, any history is necessarily incomplete by virtue of the 'erosion' of records and memories, but where concrete evidence of this or that occasion or event no longer remains the author cheerfully and charmingly makes flights of fancy – imagining what it might have been like at some notable event in the GSL's history. He imagines, for example, how participants might have travelled from overseas to attend the grand meeting of 1907, what they might have been wearing, who said what to whom, and even what they might have been thinking. So at times the book almost becomes a kind of historical novel. I find this entirely acceptable. It gives the text a lightened touch, and it is not written thus because of lack of diligent digging among the archives on the part of the author. Indeed one might even say that he is doing what was recommended long ago in R. G. Collingwood's *Idea of History* and in his autobiography: thinking oneself into the shoes of the participants in the historical drama. For the present purposes that is both attractive and appropriate.

All in all, this is a fine book that does real credit both to the author and the GSL itself. GHD is renowned for his continued use of a fountain pen. He has wielded it to great effect!




The collection of papers edited by Lewis and Knell is something very different, but complements GHD's volume most satisfactorily. It consists of written and polished versions of the papers presented at the 2007 Bicentenary Meeting; and there are several different kinds of papers. The whole provide a 'snapshot' of geology in the early decades of the nineteenth century.

Professor Knell's excellent introduction is much more than a wave of the hand towards the papers to follow. It gets 'down and dirty', exploring in detail the tensions that existed at different levels in the Society's early years, but more particularly in regard to the question of theory and practice, and the production of geological maps (several of which are beautifully reproduced). It was anything but 'plain sailing', to use a GDHish metaphor. After what must have been a heroic effort in the archives, Knell clarifies the issues that plagued the Society in its early years, with the preparation of the maps of William Smith and George Greenough, and the role of John Farey (like Smith not a Society Member) in the unfortunate 'contest' for data and recognition, and the extent to which plagiarism was or was not involved. We learn also of the roles of players such as William Fitton and William Buckland in the 'messy underbelly' of the Society, not long after its foundation, where the more fastidious GHD has not chosen to pry. Thus between them, GHD and Knell explore the light and the dark sides of the Society's foundation.

Several very interesting papers examine the social and intellectual backgrounds of the early members. Lewis deals with those with medical backgrounds or training; Edward Rose discusses those with military backgrounds (a surprisingly large number); David Knight considers the chemists; Hugh Torrens, the Quakers and Dissenters; and Cynthia Burek, the female members as they joined the Society in its later years. Valuable biographical sketches are supplied for rather little known figures such as Richard Phillips, William Allen or Ethel Skeat. GHD deals specifically with the Comte de Bournon, the translation of whose book on calcite and aragonite from French to English was the seed that led to the Society's crystallisation. Thus we see how the Society developed from the concerns of the various aforementioned strands – and initially from mining, quarrying or agriculture interests also. But, as a semi-prosopographical paper by Leucha Veneer shows,

mineralogical and mining issues fairly soon decreased after the Society's foundation, to be superseded chiefly by interest in palaeontology and stratigraphy.

The medical background may seem surprising but it was the medical schools that provided almost the only professional training in science in London at the beginning of the nineteenth century, and lectures in chemistry included instruction on mineral analysis and sometimes crystallography also. The military men were adept at trigonometry, surveying, and map-work. The mining community was, as said, decreasingly represented. It was different on the Continent, where there was a long and honourable tradition of mineralogical interest and surveying expertise which facilitated the mapping of mines and the surface outcrops or locations of different rock types.

This takes us to a third type of paper in this volume – on the state of geoscience at the time in countries beyond Britain's shores. Gian Battista, a strong Italian nationalist, gives an admirable summary of Italian geology and geologists *c.* 1807, and demonstrates the indebtedness of Charles Lyell to Gian Battista Brocchi (a point previously made, however, by Roy Porter and Paul McCartney (1976)). Philippe Taquet speaks up about the great contributions of Frenchmen to the understanding of the history of the Earth in the early nineteenth century and provides a copy of part of the much talked about, but not often seen, MS map of the Paris Basin by Brongniart and Cuvier (1808). (But the accompanying section looks like a printed item – from the published paper of 1811?) Martin Guntau provides a no less valuable account of German work of the same period and of Werner and his students in the eighteenth century. For all their funny (peculiar, not ha-ha) theory, it was Werner and his followers who really took the lead in the eighteenth century, in studies of mineralogy, and practical geoscience, Archibald Geikie's notorious anachronistic and nationalistic mocking notwithstanding. Then Victor Khain and Irena Malakhova from Moscow tell us many things about early geology in Russia that anglophone historians ought to know about, but mostly don't. Training schools were established there, along chiefly German lines, and early prospecting expeditions were undertaken over the vast territories of that huge country. But Mikhail Lomonosov was perhaps the only early Russian theorist of major significance (but rather earlier than the period of concern of the Lewis and Knell volume; and in any case he had trained at Marburg and under Henckel in Germany). Julie Newell offers a short paper on developments in the United States around 1807. Earth science education made an early start in the US. It was initially a child of British geology, but on Wernerian lines, as promoted by William McClure, who had travelled in Italy with Gregory Watt (son of James) and helped in the production of a 'protogeological' map (*pace* Hugh Torrens). In America, he produced something that was conceptually and stylistically similar to the Italian MS map. Finally in this 'world round-up' David Branagan (Sydney) gives a most useful synoptic account of the early stages of the development of geology in Australia and lists members of the Geological Society from Australia up to the 1940s, drawing on a large database compiled by the late Thomas Vallance. About 360 are identified from the nineteenth century alone. The trans-hemispherical ties or bonds were close (and still are).

Then, in another of his always instructive papers, Martin Rudwick compares earth science studies in Britain and elsewhere, discussing institutions and publications as well as different conceptual approaches. He points out that the adoption of the term 'geological' in the Society's name signalled the taking of the study of minerals from the cabinet out into the field and a crossing of the boundary between natural history and the study of the physics of the Earth; and the renunciation (for a time) of sterile controversies about theories of the Earth, such as were being vigorously pursued in Edinburgh.

In this context, the Society's new 'captain', George Bellas Greenough, is generally thought to have pursued an empiricist or 'positivist' line, hoping to avoid controversy by the minimal use of theory. But his work has not perhaps been studied in sufficient detail by anglophones and it is a *German* historian, Martina Kölbl-Ebert, who has published most on Greenough's actual theoretical ideas

(even though he ostensibly eschewed theory). In her paper in the Lewis and Knell volume, she now takes a closer look at Greenough's theoretical views, as expressed in his single book *Critical Examination of the First Principles of Geology* (1819) and in his unpublished papers held at University College London.

Greenough tried to define the meaning of strata: all rocks were, for him, stratified to a greater or lesser extent, and all rocks were in solution at some time, albeit not all simultaneously (for there could never have been enough water for that!). He then argued that valleys have been excavated by running water and that a 'Deluge' was required for such a major task. And it was the Noachian Deluge that did it! In fact Greenwood's *theory* was essentially a variant of Wernerian doctrine. So while dismissing Plutonist or Vulcanist theory, Greenough was happy to play with Neptunist doctrine which, he supposed, rested on a sound empirical basis. Yet, at the same time, Greenough persuaded himself that he and his GSL colleagues would conduct atheoretical, empirical enquiries (which could, however, be of economic value).

As to stratigraphy, Greenough found the term 'formation' too theoretical for his taste, as no strata (he correctly pointed out) could be traced right round the globe. In good Wernerian fashion, however, he was interested in lithostratigraphy, and thought that the degree of inclination of strata might be an indication of age, albeit in a very uncertain fashion. He disapproved of Smithian biostratigraphy, making the reasonable point that particular fossils could not be *universal* guides, as no organisms occur worldwide today.

In brief, Greenough's geological ideas were a mess(!) – both in today's terms and those of the geology of the GSL's earlier years. Yet he was a successful organiser and co-ordinator of data collection for his map (even if some of the information therein was plagiarised from Smith). So although Greenough laid his peculiar stamp on the Society, with a theory that ostensibly wasn't a theory, things moved on and it's evident that the time was ripe for the kinds of things that the new GSL's members sought to do. But it is a kind of paradox that a not very good geologist[1] should have been the captain for the GSL's successful launching and its first voyages.

The other papers are of no less interest. Alan Bowden gives an excellent account of the geological career of John MacCulloch, the medical and military man and analytical chemist from the Channel Islands, who was Britain's first government-appointed geologist and performed the immense task of preparing topographical maps of Scotland and also his great posthumous geological map of that country (1836) as well as a major memoir, *Description of the Western Islands of Scotland* (1819). As Bowden says (p.263), the map "stands alongside William Smith's 1815 map of England and Wales and Richard Griffith's 1838 map of Ireland". MacCulloch's work has previously received substantial attention from Cumming, Flinn, and the present writer but Bowden brings it all together and extends it in several respects.

Other papers dealing with individuals or special topics are Noah Heringman's well-illustrated essay on the work of Sir Henry Englefield and Thomas Webster in the Isle of Wight, which draws attention to the link between antiquarian/archaeological studies and the emerging geology, and the recognition of the importance of Smithian biostratigraphy along with the recognition of substantial deformations of strata revealed by examination of coastal sections and mapping.

On quite a different tack, John Smallwood does an excellent job of reconstructing the work of John Playfair and Charles Hutton on Maskelyne's earlier attempted Schiehallion studies to determine the Earth's density. (Playfair in 1801 sought to ascertain, by mapping, the lithological structure of the mountain's constituent rocks in order to estimate its mass and thereby update Maskelyne's result.)

[1] However, I admire Greenough for his principled resignation from his army reserve unit as a protest against the murderous killings of protesters at the Peterloo riots/massacre in Manchester in 1819.

Smallwood's paper is notable for its excellent illustrations and exposition of the nature of the calculations and mode of reasoning, and also shows how the results obtained two centuries ago can be understood and updated with the help of modern data and computerized calculations. It is perhaps a bit peripheral to the main (GSL focused) concerns of the Lewis and Knell volume, but it does show the kind of geophysical work that was being conducted in Britain at the time of the GSL's foundation.[2]

From the point of the GSL, Patrick Boylan's paper on the 'official recognition' of the Society with the receipt of a Royal Charter of Incorporation, and how this was lobbied for and granted, is obviously important and the details have been thoroughly researched. Attention is also given to the attempts to design a suitable coat of arms, which never got beyond the logo that is still used today. But I confess I found these matters a bit tedious![3]

Ralph O'Connor considers the wider public for geology in the early nineteenth century, revisiting once again the issue of *theorizing*. He points out that the problem for the early GSL was to retain the old popularity of the 'theories of the Earth' genre, and Romantic and religious associations, with a turn toward the establishment of geology as a rigorous empirical science. Perhaps this was assisted by the previously mentioned shift in the focus of 'earth science' from mineralogy to biostratigraphy. Britain is not a particularly well endowed country for mineral collectors, but it is certainly rich in fossils and Greenough's efforts to make the GSL a 'centre of calculation' (*pace* Latour) for the preparation of a geological map of Britain enabled the wider public to be involved by collecting specimens and presenting them to the Society directly or to local museums; or by preparing significant private collections or museums (most notably perhaps that of Gideon Mantell). O'Connor also considers the cost of 'keeping up with the literature'. He considers the costs of important early books and the GSL membership fees with an average lower middle class wage of perhaps 10 shillings a week. On that basis, a large loaf of bread cost half a day's wages. A year's GSL membership would cost 4½ months' wages. Parkinson's *Organic Remains* was worth 16 weeks' wages. But an annual subscription to Mudie's lending library would cost 2 week's wages, which was just possible as a way for the less affluent amateur to 'keep up'. And, if one lived in a suitable place, one could contribute to science as a fossil collector (as Mary Anning and later Hugh Miller did so effectively). Such work sustained the Romantic appeal of geology even as it discarded the 'romances' of speculative theory.

As mentioned, the first century of the GSL was celebrated by a serious history (by Woodward) and a formal banquet attended by 'stuffed shirts'. The Society's History of Geology Group (HOGG) held a much more light-hearted event ('Dine with the Founding Fathers'), at the site of the original Freemasons' Tavern, where the GSL originated. I was not able to be present, but from the photos reproduced in the organiser Richard Moody's account of the event it appears to have been a bit of a 'knees-up'. Many of the attendees wore (very) fancy dress in the style of about 1807. Cherry Lewis appears in a photo of a selection of HOGG members as a kind of Gilbert and Sullivan fairy queen. Perhaps in the same vein, Ann O'Connor (Ralph's sister and another 'HOG' aficionado) seems to have been trying to look like a pirate. And Patrick Boylan might be taken for a Lord High Chancellor! In another picture, my friend Irena Malakhova, Russian historian of geology from the Vernadsky Museum in Moscow, is presenting a whole bunch of scrolls from august Russian institutions to Richard Fortey, the GSL President in 2007. (And from the enthusiastic postures of the two, I suspect that a kiss was also delivered!)

With all such goings on, the preceding field trip to the Isle of Wight, led by Martin Rudwick and Hugh Torrens, to look at the exposures studied long before by Englefield and Webster, may have

[2] Smallwood's paper is part of an ongoing research programme, with a paper on Bouguer's work in the Andes awaiting publication and he has (he has informed me) plans to analyse similarly the studies in India by Pratt and Everest.

[3] This is *not* to say that the paper isn't well done.

been (or was surely) an ante-climax, and although the weather was not good (correspondents have told me) it would surely have been a most worthwhile historiographical experience. Rudwick has long held that 'HOGs' should seek to understand old ideas in the context of the time when they were developed, and not see things through modern spectacles. In his field excursion, he was evidently practising what he preached, providing the excursionists with copies of the original letters from Webster to Englefield about the island. They were invited to 'walk with the founders' and try to see things through their eyes, not those of the compilers of the modern maps. This is very much how things should be done, according to my thinking (though works such as that of Smallwood should not be dismissed because it uses modern calculations and knowledge to try to understand and interpret old investigations).

The Lewis and Knell volume is rounded off by a new edition of the GSL's very first publication, *Geological Inquiries* (1808), which gave suggestions as to what local investigators should look out for and perhaps report to the Society. It was all very simple and 'positivistic' in character. And finally we have a transcription of the 'Preliminary Discourse' to Bournon's treatise on calcite and aragonite, unctuously dedicated to Emperor Alexander I of Russia.

Strangely, it was Bournon's treatise where it all started. The GSL should be proud to see two such fine books, produced by its excellent publishing house, commemorating its bicentenary. They are not self-serving. They are both significant contributions to the study of the theoretical, practical, empirical, and institutional aspects of the history of geology.

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## *Also of interest*

***Sand***
Michael Welland. 2009 (hardback), 2010 (paperback).
Oxford University Press, xviii +333pp.
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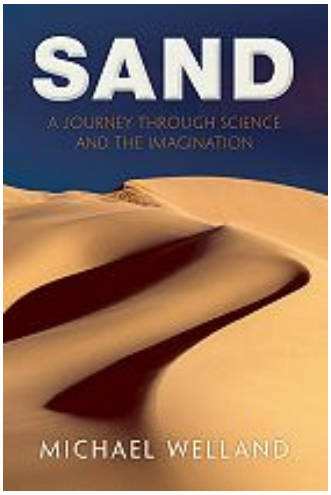
ISBN 978-0-19-958818-3 (paperback| £9.99




Winner of the *John Burroughs Medal Award for Natural History Writing 2010* and described by Richard Fortey as "a wholly delightful book"

*Michael Welland will be speaking at HOGG's November meeting on the History of Applied Geology (see page 4 of this newsletter) about the extraordinary work of Ralph Bagnold, desert explorer and later distinguished scientist who led the field in the study of sand transport.

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# Mineral collecting and the Elgin scandal: just who was Robert Ferguson?

**Cherry Lewis**[1]

The story of Lord Elgin's abduction of the Elgin Marbles has been told several times, both from his point of view and from his wife Mary Nisbet's, but very little is known about her lover, Robert Ferguson, whom Elgin sued in a scandalous divorce settlement.

In fact, Robert Ferguson of Raith (1767-1840) was a member and trustee of the newly-formed Geological Society and one of its first four Vice Presidents, serving between 1810 and 1815. All four Vice Presidents were Fellows of the Royal Society who had established large and important mineral collections; their patronage was therefore keenly sought in order to bestow prestige and credibility on the young Society – despite the high-profile scandal in which Ferguson had recently been embroiled.

## Collecting minerals

Ferguson was born into an extremely wealthy Scottish family at Raith, the family estate in Fifeshire. In 1783, the mathematician John Playfair (1748-1818), who in 1802 was to defend James Hutton's plutonist ideas in his *Illustrations of the Huttonian Theory of the Earth*, was employed to tutor Robert and his brother Ronald. Playfair's younger brother, the architect James Playfair (1755-1794), was also employed in 1785 to extend Raith House and remodel its interior (Historic Scotland online). John Playfair went with the family when they moved to Edinburgh, where he became Professor of Mathematics at the University, and was responsible for instilling in Ferguson a love of science and literature (Conolly 1866). Unfortunately, the relationship ended acrimoniously; the journal kept by Ferguson records that Playfair greatly annoyed Ferguson's father by not intervening in some youthful indiscretion perpetrated by the boys, and that there was a difference of opinion about their education in which Playfair seems to have stood his ground against their father's wishes. In April 1788, Playfair was dismissed and the brothers were instructed never to contact him again.

A few months later, at the age of 21, Ferguson left home to study civil law and literature at Glasgow University, resolving to "earn a good opinion of my father and society" (Lloyd 2000). But he was not really cut out to be a lawyer and in 1793, he set out for the Continent, spending the next 11 years travelling Europe and seeking minerals to add to his collection that was eventually "surpassed by few private collections in the kingdom" (Lloyd 2000). While abroad he visited mines, observed extraction and smelting techniques, and met with eminent mineralogists such as Abraham Gottlob Werner (1749-1817) and his industrious student, Robert Jameson (1774-1854). He also studied geology under Georges Cuvier (1769-1832), whom he accompanied on some of his excursions to the Paris Basin (Conolly 1866).

Profile of Robert Ferguson by William Penny of Midcalder, near Edinburgh, from a bronze medallion. Ferguson gave it to his wife as "a little surprise". The Rev. Dibdin (1838) considered that "as a likeness of Ferguson, it could scarcely fail to be satisfactory". Courtesy of the Royal Society

**A scandalous affair**

Before Ferguson left Scotland, he had become engaged to his cousin, Agnes Berry (1764-1852), but the union was discouraged by his parents on the grounds that Agnes was older than him. A more likely reason was the animosity between the two families caused by Ferguson's father being the younger of two sons who, very unusually, inherited the family wealth, leaving the older brother, Agnes's father, relatively impoverished (Lewis 1866). Not long after Ferguson arrived on the Continent, he started a lengthy affair with the married Countess Henrietta Schall of Gausig (a small town near Dresden) with whom he had a son, Henry Robert Ferguson, born in Rome on 4th May 1796.

During the whole time Ferguson was abroad, Britain and France were at war except for a short period of peace during 1802. In May 1803, hostilities again broke out and Ferguson, then in Paris, became a prisoner of war, albeit one allowed to live in a hotel. Lord Elgin (1766-1841) and his beautiful 25-year-old wife Mary (1778-1855), heiress to a vast fortune, were also trapped there, along with many other Britons who had seized the opportunity to travel abroad during the short-lived peace. Ferguson, who had known Elgin when a boy (Vrettos 1997) as their estates in Scotland were very close, was frequently invited to the Elgin's hotel (Alger 1904) and in January 1804, while Elgin was imprisoned in Pau, Mary and Ferguson began a passionate relationship (Lloyd 2000).

Portrait of Mary Nisbet by Baron Gérard François, 1804

During his enforced stay in Paris, Ferguson became a member of the Institute of France (Conolly 1866) and occupied himself attending courses in science, becoming "acquainted with the most celebrated men of science in Paris" (Lloyd 2000). His relationship with these men, and the strings pulled from Britain by Joseph Banks (1743-1820), also a member of the Institute, eventually helped persuade the French authorities that Ferguson should be released. He arrived back at Raith in October 1804, via a three-month visit to his Countess and their son in Germany. However, it seems he then returned to France to escort Mary Elgin home when she was released from Paris in February 1805, for it was reports of Ferguson's presence on the boat to England that first alerted Elgin to the possibility that Ferguson and his wife were having an affair (Vrettos 1997). Elgin subsequently had them watched and intercepted many of their letters that were described at the ensuing trial as "the most ridiculous medley of love and madness" that would "disgrace the worst novel of the last century" (Alger 1904).

**Trial for adultery**

Elgin was eventually released in July 1806 and confronted Mary who confessed to the affair (Bunyan 1995). But this presented Elgin with a dilemma; if he divorced Mary and no longer had access to her money, he would be unable to finance his plans for bringing the marbles to Britain (the first shipment of which had cost a staggering £40,000 (Vrettos 1997)), but she would only agree to stay with him on a condition of celibacy – she had already had five children, one of whom had died, and wanted no more. She also found him physically repugnant, following the disfigurement of his face after an illness.

Divorce at that time was almost unheard of; an act of parliament was required and it would be necessary to take the case through both the English and Scottish courts, at huge expense for whoever

lost. Nevertheless, believing he would get his hands on his wife's money if he divorced her, in December 1807 – just a month after the Geological Society was founded – Elgin sued Ferguson for the breakdown of his marriage, claiming £20,000 in compensation. The case in England was not contested by Ferguson and the act of parliament that divorced Elgin and Mary was passed in 1808. But following the case in Scotland where all the details of the affair emerged amidst huge scandal, Elgin was awarded damages of £10,000. However, Mary's powerful family connections ensured that she protected her vast family fortune, although Elgin retained sole custody of their four surviving children, forbidding them any contact with their mother.

**The Ferguson archive**

In March 1805, Ferguson had been made a fellow of the Royal Society and in 1806, MP for Fifeshire. Then living in London, he became a patron of science and in 1807 was one of the 16 people who subscribed £50 each in order to finance the publication of Count de Bournon's (1751-1825) treatise on aragonite. It was meetings about this publication that eventually led to the founding of the Geological Society (Lewis 2009). De Bournon, who was one of the Society's 13 founders, had been a refugee from the French Revolution when he came to England in 1792. There he was immediately elected to the Royal Society because of his advanced expertise in mineralogy. Mineral collecting was very much in vogue at this time among the wealthy elite who spent vast sums on their collections, and de Bournon was employed by some of these men to look after and enhance their collections. Unfortunately, his main patron, Sir Charles Greville (1749-1809), died unexpectedly in 1809, leaving de Bournon with a much reduced income. Ferguson was one of the four people asked by Parliament to place a value on Greville's collection, which was then purchased by the British Museum for £13,727 (Cooper 2004).

De Bournon, who had worked on Greville's collection for 18 years, rather naturally expected to be given the job of cataloguing it for the British Museum, but an archive of Ferguson's papers recently purchased by the University of Bristol contains letters between Ferguson and de Bournon that


Letter from Count de Bournon addressed to Robert Ferguson
Courtesy of the University of Bristol Library Special Collections

reveal de Bournon's mounting frustration when he is offered a derisory salary for doing the job, and his later despair when it transpires that Joseph Banks, then President of the Royal Society, has appointed someone else to the job, despite Ferguson and many other eminent mineralogists signing a letter in support of de Bournon. De Bournon consequently determines to "leave mineralogy for ever", ignoring Ferguson's attempts to persuade him otherwise.

As well as the de Bournon correspondence, the Ferguson archive includes a rare copy of the Geological Society's Charter of 1838, a considerable amount of material sent out by the Society in

its first few years, contemporary notes on chemistry and geology, and correspondence with other mineralogists. An amusing ditty by Ferguson, found in his geological notes, runs as follows:

*Oh ye Huttonians whose expansive force*
*Lifts up the very mountains to the skies,*
*Whose inward heat, of World's* [sic] *to come the source,*
*Baked and puffed out like [the] crust of apple pies.*

**Whig and Foxite**

Following the death of his father in 1810, Ferguson returned to Raith to manage the estate. Although he seems to have abandoned collecting minerals, he did retain an interest in science. He performed experiments in his garden at Raith, recording the temperature of soil at depths of one and two feet beneath the surface during each month for the years 1816-17, revealing that soil cooled much more slowly than the atmosphere did (Lindley 1840). In 1831, Ferguson became MP for Kirkcaldy and between 1835 and 1837, he held the seat for Haddingtonshire (now East Lothian) that contained his wife's estate which lay opposite his own across the Firth of Forth. Finally, he again became MP for Kirkcaldy when he lost Haddingtonshire, a seat he held until his death. He was a staunch Whig and modelled himself on Charles Fox (1749-1806), known for his opposition to George III, but his views as a reformer were tempered by his first-hand experiences of the French Revolution (Conolly 1866). He also became Lord Lieutenant of Fifeshire – a position greatly coveted by Elgin. By all accounts, he was a model landlord to his tenants and was so "beloved by them" (Conolly 1866) that after his death they erected a 45-foot-high monument in Haddington to commemorate him. On the top is a colossal statue of Ferguson, sculpted from a single block of granite. The column stands on a square base ornamented at the bottom by four allegorical figures representing justice, geology, art and agriculture – his four main interests. The inscription describes him as "a kind landlord, a liberal dispenser of wealth, a generous patron of literature, science and art" (Miller 1844).

Following their scandalous affair, Ferguson and Mary lived quietly together at Raith but seem not to have married until 1821 (Vrettos 1997). A visitor to Raith in 1836 described their "united efforts to make every visitor happy" as being "famed throughout the land". As well as mentioning the beautiful grounds, the many paintings in the house, and the library stocked with "some five thousand goodly volumes", the visitor pays particular attention to a cabinet of jade, "so precious and so unique, that the Emperor of China should send a special embassy of Mandarins to obtain it at any cost". He also noted a cabinet of minerals, "particularly rich in rare foreign specimens" (Dibdin 1838). One wonders what happened to the jade; the mineral collection was rediscovered in the house in 1997 (Lloyd 2000).

The couple did not have any children of their own but at some point, Ferguson's illegitimate son Henry came to live with them and, apparently, Mary was an affectionate stepmother to him (Bolen 2008). When Ferguson became an MP, they moved to his house in Portman Square, London, where he died on 3rd December 1840. Being illegitimate, Henry – who was to become General Sir Henry Robert Ferguson Davie – was not entitled to inherit his father's estate which went to his uncle, Ronald Ferguson, who died in April 1841, just a few months after his brother. In 1847, Henry became the MP for Haddington Boroughs and held the seat for 30 years (Mosley 2003). On Ferguson's death, Mary returned to her family home where she died in 1855. After Elgin's death in 1841, she was finally reunited with her surviving children.

**References**

Alger, J W. 1904. *Napoleon's British visitors and captives 1801 - 1815*. Archibald Constable and

Co. Ltd, Westminster.
Bolen, C. 2008. Online review of: *Mistress of the Elgin Marbles: A Biography of Mary Nisbet, Countess of Elgin* by Susan Nagel. www.cherylbolen.com/elgin.htm
Bunyan, S. 1995. Two ladies of Dirleton. *Nesbitology*, *Publication No. 9.* Nesbitt/Nisbet Society, Cambridge.
Conolly, M F. 1866. *Biographical Dictionary of Eminent Men of Fife*. Inglis and Jack, Edinburgh.
Cooper, M P. 2004. Greville, Charles Francis (1749–1809). *Oxford Dictionary of National Biography Online*. Oxford University Press.
Dibdin, Rev T F. 1838. *Bibliographical antiquarian and picturesque tour in the Northern counties of England and in Scotland*. Vol 2. C. Richards, London.
Historic Scotland online. *An Inventory of Gardens and Designed Landscapes in Scotland.* www.historic-scotland.gov.uk/gd/index/heritage/gardens/gardenssearchmoreinfo.htm?s=raith&r=&bool=0&PageID=2129&more_info=Site
Lewis, C L E. 2009. Doctoring geology: the medical origins of the Geological Society. *In*: Lewis C L E & Knell, S J. (eds) *The Making of the Geological Society of London*. Geological Society, London, Special Publications, 317.
Lewis, Lady T. (ed.) 1866. *Extracts from the journals and correspondence of Miss Berry from the year 1783 to 1852*. Vol 1. Longmans, Green, and Co. London.
Lindley, J. 1840. *The theory of horticul*ture. John Wiley, New York.
Lloyd, B. 2000. The journals of Robert Ferguson (1767–1840). *Mineralogical Record*, 1–19.
Miller, J. 1844. *The lamp of Lothian; or, the history of Haddington*. James Allan, Edinburgh.
Mosley, C. (ed.) 2003. *Burke's Peerage, Baronetage & Knightage, 107th edition, 3 vols*. Wilmington, Delaware, U.S.A.
Vrettos, T. 1997. *The Elgin Affair*. Secker and Warburg, London.

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## POSTSCRIPT: TRANSLATOR NEEDED

Cherry writes: “We are currently seeking someone able to read good French to translate the De Bournon letters in the Ferguson archive – he wrote in French and Ferguson replied in English. We can’t pay, I’m afraid, but if anyone is interested in translating these fascinating letters for the love of it, I would be very interested to hear from them.”
If you can help, or for further details, please contact Cherry (addresses above).

# Jean Jones (1935-2009): authority on the life and work of James Hutton

***Hugh Torrens[1] pays tribute to Jean Jones who died last year. This article first appeared in the INHIGEO newsletter of May 2010, and is included here with permission.***

My friend Jean Jones, the pre-eminent scholar of the life and work of geologist James Hutton (1726-1797) died on 3rd May 2009, in Edinburgh at the age of 74, after a long and heroic struggle with ill health. She received fine obituary notices in the *Guardian* (14th August, p.35), as a "meticulous editor and historian of science", while the *Scotsman* (15th August, p.47) instead called her "editor, curator and artist". These – both online – give basic biographical data, and show the enormous range of her interests and skills. This notice will refer more specifically to her work as a historian of geology and science, and to the fun we had together.

We made contact because of a mutual interest in studying the private archives of the steam engineer James Watt (1736-1819) which were held at Doldowlod, near Llanwrthwl in Radnorshire/Powys. Their then owner, Lord James David Gibson-Watt (1918-2002), would understandably only allow limited access to them and so, in the early 1980s, Jean and I decided to try and get there together. Her letter of application, of 27th September 1983, having succeeded (I am sure only because Jean had written it), I found myself driving Jean, in March 1984, from Crewe into the wilds of mid Wales in one of my old cars. Going together meant we could devote more time to being grateful since, while one of us was busy in the attic, the other was able to say thank you and drink the Gibson-Watt whisky. This helped us to get invited back and, on a later visit, another old car would not start. Lord Watt, regarding at least one of us as a 'lady in distress' insisted I borrow the estate Land Rover to take Jean to the local hotel at Newbridge-on-Wye. This allowed us more time next day to work on these wonderful papers.

On a final visit, Lord Watt asked what we thought of these papers being sold to America, as he had just been offered a seven-figure sum for them. We both agreed that we had to try to keep them in Great Britain (although Jean thought in Edinburgh, while I thought in Birmingham where the business papers already were). In the end, these private papers of James Watt and his family were purchased from Lord Gibson-Watt in June 1994 with the assistance of the National Heritage Memorial Fund, Victoria and Albert Purchase Grant Fund and many other donors. They are now housed, and well catalogued, in the Archives Division of Birmingham Central Library. They comprise some of the most important documents in the entire history of the Industrial Revolution. Jean and I, meanwhile, had been able to publish our work on these fine, if bawdy, letters in 1994-1995 (nos 19 and 20 of her bibliography listed below). It should also be recorded that she was nominated for election to INHIGEO but chose, in typical Jean style, to decline so that younger blood could be allowed in instead. This alone justifies this notice here.

In later years, Jean worked with Robert Anderson on the papers of Joseph Black (1728-1799), chemist and physician, and friend of Hutton. A publisher accepted their publication only two weeks before she died and she was thus made aware of this good news. She had fallen ill with a strange and undiagnosed Parkinsonian-like illness, and I was able to visit her all too rarely. But she remained as kind, stoical and thoughtful as ever. Two concepts defined Jean in all she did: *focus and integrity*. A phenomenal degree of attention, coupled with her fine memory, informed everything she did, from painting, to research, to sport. Her integrity made her fearless in telling people when, in her view, they had strayed from the straight and narrow, from her closest family to simple professional advisers. I am proud and grateful to have had her as a friend. She will be much missed. Her Hutton archives have gone to the Natural History Museum at the University of Oxford, and the papers on Doldowlod to the archives at Birmingham City Library.

***Bibliography of Jean Jones***

1) 1961 (editor) *Hans Andersen's Fairy Tales*, London and Glasgow: Blackie, 264pp.
2) 1981 James Hutton: the inner man (a digest of letters), *Edinburgh Geologist*, 10, 17-20.
3) 1983 (with George Waterson) *Fair Isle: A Photographic History*, Edinburgh: Blackwood and the National Trust for Scotland, 86pp.
4) 1982 (with Gordon Craig) *A Geological Miscellany*, compiled by G.Y.Craig and E.J.Jones, Oxford: Orbital, 195pp., ill.; 24cm; also 4a) 1985, another edition, Princeton: Princeton University Press.
5) 1982 Some James Hutton (1726-1797) queries, *Times Literary Supplement*, 5th February 1982.
6) 1982 James Hutton and the Forth and Clyde Canal, *Annals of Science*, 39, 255-263.
7) 1983 James Hutton: Exploration and Oceanography, *Annals of Science*, 40, 81-94.
8) 1984 The Geological Collection of James Hutton, *Annals of Science*, 41, 223-244.
9) 1984 The Tassie Portrait of James Hutton, *Edinburgh Geologist* 16, 2-5.
10) 1984 *Scottish Men of Science. James Hutton 1726-1797*, Edinburgh: Scotland's Cultural Heritage, (booklet, 21pp., unpaginated)
11) 1985 James Hutton's Agricultural Research and his Life as a Farmer, *Annals of Science*, 42, 573-601.
12) 1985 (April), No. 21 of a series of articles in Japanese on famous scientists, on James Hutton by Izumi Mori – the pen name of geophysicist Hitoshi Takeuchi (1920-2004) – for which Jean Jones and Gordon Craig contributed the five photographic illustrations (the Raeburn portrait of Hutton, granite and shale pebbles in Glen Tilt Gorge, view of Salisbury Crags in Edinburgh, strata at Salisbury Crags, and the metamorphosed contact there), *Newton – Graphic Science Magazine* (published in Higashi-Murayama-Shi, Tokyo), 5, no. 4, 122-127.
13) 1986 *A Hotbed of Genius: the Scottish Enlightenment 1730-1790*, edited by David Daiches, Peter Jones and Jean Jones for the Institute of Advanced Studies, Edinburgh, Edinburgh University Press, xi, 160pp., ill. (some col.), facsims., 1 map, plans (some col.), ports (some col.); 27cm, also as 13a) 1996 another edition: *The Scottish Enlightenment 1730-1790*, Edinburgh: The Saltire Society [ISBN: 0854110690].
14) 1986 *A Hotbed of Genius*, check list of exhibits for the above exhibition. Edinburgh, Royal Bank of Scotland, 32pp., booklet.
15) 1987 James Hutton's Unpublished Manuscript: The 'Elements of Agriculture', *Royal Society of Edinburgh Yearbook 1987*, 44-47.
16) 1989 Exhibition Guide: '*Revolutions in Science 1789-1989: Our Changing View of nature and Ourselves*' Royal Museum of Scotland: University of Edinburgh, 43pp. [ISBN 0 9514854 0 7].
17) 1990 *Morals, Motives and Markets: Adam Smith 1723-1790. A Bicentenary Exhibition*, Edinburgh: Royal Museum of Scotland, 48pp., ill.
18) 1991 James Hutton – The Road to Ecology, *in* Magnus Magnusson and Graham White (eds), *Nature of Scotland: landscape, wildlife and people*, Edinburgh: Canongate Press, 215pp., col.ill., 32cm [ISBN: 0862413338].
19) 1994 (with Hugh Torrens and Eric Robinson) The correspondence between James Hutton (1726-1797) and James Watt (1736-1819) with Two Letters from Hutton to George Clerk-Maxwell (1715-1784): Part I, *Annals of Science*, 51, 637-653.
20) 1995 (with Hugh Torrens and Eric Robinson) The correspondence between James Hutton (1726-1797) and James Watt (1736-1819) with two Letters from Hutton to George Clerk-Maxwell (1715-1784): Part II, *Annals of Science*, 52, 357-382.
21) 1996 (with Mary Uhl) *Under One Roof*, Edinburgh: National Museums of Scotland, 110pp., ill.
22) 1998 (with Peter Jones) *James Hutton's An Investigation of The Principles of Knowledge (1794, reprint),* Bristol: Thoemmes Press, 3 vols, xi + lxxii + 649pp; xxiii + 734pp.; xvi + 755pp.
23) 1999 Marine Science in the Correspondence of James Hutton and Joseph Black, *Scottish Naturalist*, 111, 157 (Abstract).
24) 1999 'The correspondence of Joseph Black' in *The Petersburg Academy of Science Among*

*Other Academies of the World, Petersburg Academy of Science, Proceedings of an International Conference (edited E.A. Ivanova) for the 275th Anniversary 1724-1999*: Volume 4, 29-39, St Petersburg [ISBN 5-86763-029-3].
25) 1999 Essay Review "Priestley Enlightened": a review of R.E.Schofield 1997 *The Enlightenment of Joseph Priestley: a study of his life and work from 1733 to 1773*, (publ. Pennsylvania State University Press), *Annals of Science*, 56, 95-98.
26) 2004 Sir James Hall of Dunglass, fourth Baronet (1761-1832) chemist and geologist, *Oxford Dictionary of National Biography*, 24, 620-621.
27) 2004 James Hutton (1726-1797) geologist, *Oxford Dictionary of National Biography*, 29, 60-63.

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## The J. B. Harley Research Fellowships in the History of Cartography

The *Harley Fellowships* – the only one of their kind in Europe – provide support of up to four weeks (normally at £400 per week) for those, from any discipline, doing the equivalent of post-graduate level work in the historical map collections of the United Kingdom. Web site: http://www.maphistory.info/harley.html

*Harley-Delmas Fellowships*
For the period 2007-2011, in addition to the normal J. B. Harley Fellowships, there are also Harley-Delmas Fellowships funded by the Gladys Krieble Delmas Foundation. Successful applicants researching the history of cartography during the European Renaissance to the Enlightenment c.1400-c.1800 will be eligible for a Harley-Delmas Fellowship. **All** applicants, however, should apply for a J. B. Harley Fellowship. Eligibility for a Harley-Delmas award will be decided by the Selection Committee of the Trustees.

The closing date for applications is **1st November**. The Fellowship website includes an Application page that should provide all the necessary information as well as answering many frequently asked questions. *E mail applications to rose.mitchell@nationalarchives.gov.gsi.uk*

# On Mantell, Buckland and Castle Hill, Newhaven, Sussex

**Anthony Brook**[1]

Priority of discovery is the ultimate of scientific endeavour. Whoever makes the discovery first claims the glittering prize, and the rest immediately become also-rans, no matter how brilliant their research might be. Sometimes, though, for various reasons, history can make a mistake and priority should, in fact, be awarded elsewhere. This is a case in point, where the initial description of a unique geological feature should really go to William Buckland of Oxford rather than Gideon Mantell of Lewes, as generally assumed.

During investigations into the strange history of the rare Sussex mineral aluminite, formerly known as websterite, I came across a sparse reference which read: Buckland, Geol. Trans., 4, p. 294, which was sufficiently intriguing to require checking. It turned out to be a long article in an early issue of the *Transactions of the Geological Society*, with considerable relevance to Sussex and its strata. The full reference, for the record, is William Buckland "Description of a series of Specimens from the Plastic Clay near Reading, Berkshire: with Observations on the Formation to which those Beds belong", *Transactions of the Geological Society,* Vol. 4, Part 2 (1817), pp. 277-304. It would seem to relate to specimens from the 'Plastic Clay' which was the contemporary term for those beds immediately above the Chalk - known later as the Woolwich and Reading Beds and nowadays comprising the Lambeth Group.

The second part of the title and of the paper is often overlooked but that is where Buckland is taking the broader view and considering the 'Plastic Clay' in locations other than near Reading, such as Sussex. Indeed, pp. 294-97 are solely concerned with the 'Plastic Clay' in Sussex: a) "Appearance of the Plastic Clay formation on the coast of Sussex", b) "Sections near Seaford and Newhaven", c) "Plastic Clay near Arundel", followed by two further sections of even larger scale and significance, d) "Connections of beds of Plastic Clay formation in England with the French beds of the same era - the cross-Channel connection", and e) "General character of the Plastic Clay formation in England". This is an important and very early consideration of a specific Sussex stratum bearing in mind that Buckland read his paper to a meeting of the Geological Society on 6th January 1816. It certainly became public knowledge and in the public domain the following year when it was published in the Society's *Transactions* which circulated to a small but well-connected coterie of geological enthusiasts, some of whom lived in Sussex.

When I read Buckland's "Section of Strata at Castle Hill, Newhaven", it seemed strangely familiar. I was sure I had seen it, or something very much like it, somewhere before - and indeed I had - in Gideon Mantell's *Fossils of the South Downs*, published in May 1822 which is generally assumed to be the first descriptive section of the Palaeocene strata at Castle Hill, Newhaven. However, it would appear that Buckland beat him to it, by five years at least, although whether Mantell was aware of, or had even read, Buckland's paper in the *Transactions* is another matter. Mantell certainly does not acknowledge Buckland's priority in any way. In the following Table, I have listed both Buckland's 1817 description and Mantell's 1822 description. From this, it becomes clear that Mantell's description is only a minor elaboration of Buckland's; the differences between the two are insignificant.

Priority for the "Section of Strata at Castle Hill, Newhaven" should thus be awarded to William Buckland, as published in the *Transactions of the Geological Society* in 1817. Please note that although Buckland has antecedence for the first *descriptive* section, Mantell retains credit for the first *illustration* of this special stratigraphical section, as portrayed in the frontispiece of *Fossils of the South Downs*, a lithograph engraved by his wife, Mary Ann Mantell, in May 1818 which is curiously close to the date of Buckland's published description.

| Section of the Strata at Castle Hill, near Newhaven, commencing with the lowermost deposit | | | | | |
|---|---|---|---|---|---|
| No. | BUCKLAND (1817) | Thickness (ft) | No. | MANTELL (1822) | Thickness (ft) |
| 1. | Chalk, containing alumine in hollows on its surface | 50 | 1. | Chalk with flints | 50 |
| | | | 2. | Ochraceous clay, containing hydrate and subsulphate of alumine, and crystalized sulphate of lime | c. 1½ |
| 2. | Breccia of green sand and chalk flints, the latter covered with a ferruginous crust | 1 | 3. | Breccia of greensand and chalk flints, the latter covered with a green and ferruginous crust | 1 |
| 3. | Sand, varying from yellow to green and ash in colour | 20 | 4. | Sand, of various shades of yellow, green and ash colour | 20 |
| 4. | Series of clay beds containing coaly matter, selenites and fibrous gypsum; also leaves of plants and sulphur-coloured clay | 20 | 5. | Blue clay with a marl of sulphur yellow colour; including large crystals of sulphate of lime, with fibrous and foliated gypsum | 20 |
| | [*possibly above as 'coaly matter'*] | | 6. | Seam of surturbrand, or coal | c.½ |
| | | | 7. | Indurated reddish-brown marl, the lower part slaty, containing impressions of leaves, and casts of cerithia, cyclades, etc. | A few inches |
| 5. | Foliated blue clay containing cerithia and cyclades, and a few oysters. In this clay is a seam of iron pyrites, c. 1 inch thick, with pyritical casts of cyclades and cerithia | 10 | 8. | Blue clay, containing immense number of shells, chiefly of genus Cerithium; teeth of a species of squalus, etc. This bed is traversed by a seam of pyrites, few inches thick, containing casts of cerithia | 10 |
| | | | 9. | Blue clay with broken bivalve shells, apparently of genera cytheria and cyrene | |
| 6. | Consolidated argillaceous rock, full of oysters, with a few cyclads and cerithia | 5 | 10. | Bed composed almost entirely of oyster shells held together by an argillaceous cement | 5 |
| 7. | Alluvium, full of broken chalk flints mixed with sand | 10 | 11. | Diluvium, consisting of yellow and fawn-coloured sand, with pebbles: the latter evidently formed of broken flints rounded by attrition | 10-15 |
| | Total | 116 | | Total | 118-123 |

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## REPORTS ON MEETINGS OF OTHER BODIES

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## BRITISH SOCIETY FOR THE HISTORY OF SCIENCE (BSHS) ANNUAL CONFERENCE

***Leucha Veneer reports on the BSHS annual conference held this year in Aberdeen from 22nd to 25th July.***

The British Society for the History of Science annual conference was very successful this year, with over 140 delegates from across the world. The venue at the University of Aberdeen was good: conference sessions were held in the beautiful old King's College building, the Friday evening drinks reception (with whisky tasting) in the King's College Divinity Library, and the conference dinner and ceilidh (on the Saturday evening) in the neighbouring and suitably impressive Elphinstone Hall.

The plenary lecture, on the Thursday evening, was a good opening to the conference, with **Mario Biagioli** (Harvard) discussing how Galileo copied (rather than invented) the telescope. Sessions ranged across the sciences and covered various periods from the medieval to the late twentieth century, with several on the earth sciences. The study of volcanoes in late colonial Guatemala and the scientific credentials of the Japanese expedition to the South Pole in 1910-1912 were discussed in one session; eighteenth century mineral analysis, the architectural aspects of nineteenth-century aesthetics of geology, and the importance of taste in William Buckland's geology in another.

A museums and popular science session discussed the early collections, of both specimens and instruments, of Teyler's Museum in Haarlem (founded c. 1785) and Richard Owen's palaeontological contributions to the *Penny Cyclopedia* in the 1830s. A more technologically orientated session included comparison of nineteenth and twenty-first century techniques of fossil preparation and conservation. Oil prospecting in the North Sea was included in a session on post-war science and industry.

Sessions also encompassed forensics, psychology, chemistry, astronomy, physics, biology and the biomedical sciences, and the philosophy of machines. Other particularly popular sessions at the conference included a session on science on stage and screen, a session on local collections with material from the host university's curators, and the songs of science session, which encompassed not only historical discussion of songs written by or about scientists, but also their performance (edited footage may soon be available on the Society's website).

Overall, the conference was very enjoyable, and remarkable for the range and quality of the papers, its internationality, and the array of delegates from doctoral students to emeritus professors. On to Exeter next year!

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# FUTURE MEETINGS OF OTHER BODIES

**MANCHESTER SCIENCE FESTIVAL**
**MANCHESTER MUSEUM**
**SUNDAY 24th OCTOBER 2010 12.30 – 1.30pm**
**and THURSDAY 28th OCTOBER 2010 12.30 – 1.30pm**

**ARGUMENTS AND UMBRELLA STANDS:**
**VICTORIAN MANCHESTER'S**
**NATURAL HISTORY COLLECTIONS**

***A talk by Dr Leucha Veneer (Centre for the History of Science, Technology and Medicine, University of Manchester)***

Ever wondered where today's museum collections come from? In Victorian Manchester, there was a Geological Society and a Natural History Society. They shard a museum, but disagreed about the admission fee – and about everything else including the museum's umbrella stand! Find out about these nineteenth century societies, and see how some of their collections ended up in the Manchester Museum.

http://www.manchestersciencefestival.com/whatson/argumentsandumbrellas

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**GEOLOGICAL SOCIETY OF LONDON**
**FOUNDER'S DAY LECTURE AND DINNER**
**THURSDAY 11th NOVEMBER 2010**
**BURLINGTON HOUSE and LE MERIDIEN, PICCADILLY, LONDON**

**Lecture: *From Paviland to Pakefield: 700,000 years of* Homo britannicus**
**Speaker: Chris Stringer (Natural History Museum)**

**Dress: Black tie**
**Tickets (price £70) are limited.**

**After dinner speaker: Dick Selley (Imperial College, London) *Dining with Dinosaurs***

The search for human origins has always been, and continues to be, fraught with issues of identity, race, religion and nationality. This, combined with a palaeontological record that is extremely fragmentary and difficult to interpret, makes palaeoanthropology one of the most hotly debated issues in science. Professor Chris Stringer will trace our attempts to make sense of the origins of *Homo britannicus*, from Dean Buckland's "Red Lady" to the present day.

For further details, contact
Alys Hilbourne, The Geological Society, Burlington House, Piccadilly, London W1J 0BG
Tel. 020 7432 0981 E mail alys.hilbourne@geolsoc.org.uk
Web www.geolsoc.org.uk/founders10

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**BRITISH SOCIETY FOR THE HISTORY OF SCIENCE**
**POSTGRADUATE CONFERENCE**
**4th - 6th JANUARY 2011**
**CENTRE FOR THE HISTORY OF SCIENCE, TECHNOLOGY AND MEDICINE**
**UNIVERSITY OF MANCHESTER**

The BSHS Postgraduate Conference is an annual event for postgraduate students from the UK and abroad. The conference is organised for and by postgraduates working within the history of science, technology, medicine and related fields. Its purpose is to encourage links between postgraduates in these areas who may often be isolated from others in their field of study. The conference will be an excellent opportunity to give a short paper, discuss ongoing research interests and make contacts and friends with other students. The aim is for postgraduates to convene from a wide range of universities and disciplines to discuss common interests and present research in a friendly and receptive environment.

Presentations of 15 minutes on any aspect of the history of science, technology and medicine are welcome from postgraduate students from the UK and abroad. Abstracts of no more than 300 words should be mailed to pgconference2011@bshs.org.uk no later than **Friday 12th November 2010** using the abstract form which can be downloaded from http://www.chstm.manchester.ac.uk/newsandevents/conferences/bshspostgraduate2011/
The deadline for registration and payment for attendance at the conference will be Monday 6th December 2010.

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**EXPLORA INTERNATIONAL CONFERENCE**
**LOST AND FOUND: IN SEARCH OF EXTINCT SPECIES**
**31st MARCH – 1st APRIL 2011**
**CAS (EA – 801) / TOULOUSE NATURAL HISTORY MUSEUM**

Extinction has always fascinated and intrigued men, be they men of science or men of letters. The history of the Earth has been marked by five major mass extinctions, the most famous being undoubtedly the one that saw the end of the dinosaurs on Earth at the close of the Cretaceous Period. At the beginning of the nineteenth century, the increasing number of palaeontological discoveries challenged certainties about the origins and place of man on Earth. The scientists' search for extinct species and their conclusions or surmises, undermined literalist readings of the Bible. Hinting at the issue of extinction, the discoveries paved the way for the development of evolutionary theory, climaxing with the publication of Charles Darwin's *The Origin of the Species* in 1859. The study of fossils was thus poised between conflicting interpretations of the evolution of life on Earth: fossils crystallized conflicts, bringing to light the tensions between science and religion, and epitomizing the period's questionings as to the past and future of man on Earth.

This interdisciplinary conference aims to look at the way in which extinct species and past ecosystems have been represented and sensationalized from the nineteenth century to the present time. It will examine how man's sudden awareness of species extinction (from the Dodo bird and the Moa, to the more recent American pigeon) and/or the threat of extinction have informed literature and the arts, particularly focusing on the impact of climate change in literary and non-literary narratives, on the issue of man's (in)significance in the history of the Earth, and on the literary and artistic significance of end-of-world scenarios.

*We invite 20-minute papers that engage with, but are not limited to, the following topics:*

- **history of palaeontology and fossil classification**
- **history of fossil collecting**
- **popularization of geology and palaeontology**
- **reconstructions of extinct species**
- **representations of extinct species in literature and the arts**
- **representations of ecosystems in literature and the arts**
- **extinct species, ecology and the development of ecocriticism**
- **theories of mass extinction**
- **end-of-world scenarios**

***Please send 300-word proposals (attached as a .doc-file) together with a short biographical note to*** exploraextinctspecies@yahoo.com**.**

***DEADLINE FOR SUBMISSIONS: 20TH NOVEMBER 2010***

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# HISTORY OF GEOLOGY GROUP

## HISTORY OF APPLIED GEOLOGY
## NOVEMBER 16th-17th 2010
## Meeting Registration Form

**NAME:** ……

**ADDRESS:** ……..

……..

**Postcode:** …….. **Telephone:** ……..

**E mail:** ……..

The conference will be held at the **Geological Society, Burlington House,** Piccadilly, London W1J 0BG (nearest Underground stations are Piccadilly Circus and Green Park).
The Brunel Museum trip will be undertaken by public transport.

**Registration:** I wish to register for the following (please tick where appropriate)

**November 15th 2010 (afternoon) Field trip:**

| | | | |
|---|---|---|---|
| Brunel Museum Rotherhithe | £12.50 | ☐ | …….. |

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

| | | | |
|---|---|---|---|
| HOGG, GA, OUGS members | £20 00 | ☐ | …….. |
| Engineering Group members | £20.00 | ☐ | ……. |
| Others | £30.00 | ☐ | …….. |
| Students | £5.00 | ☐ | …….. |
| Single day registration<br>Please tick day (16th) (17th) | £16.00 | ☐ | ……. |

**Reception (November 16th)** (*free to speakers and conference delegates*) ☐

**Conference Dinner (November 16th)** £30.00 ☐ ……..

**TOTAL PAYMENT**

**.....**

Please complete and return this form, together with a cheque (*payable to HOGG*), to Professor Richard Moody, Gnoll House, 15 Forster Road, Guildford, Surrey GU2 9AE
E mail rtj.moody@virgin.net

****Deadline for receipt of registration form: 30th October 2010****