

HOGG

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



Number 22
September 2004



Cover Illustration:

The title page from Bishop Ussher's work entitled:

Annales Veteris Testamenti, a prima mundi origine deducti: una cum rerum asiaticarum et aegyptiacarum chronico, a temporis historici principio usque ad Maccabaicorum initia producto. Jacobo Usserio ... digestore

translated as:

The annals of the world. Deduced from the origin of time, and continued to the beginning of the Emperour Vespasians reign, and the totall destruction and abolition of the temple and common-wealth of the Jews. Containing the historie of the Old and New Testament, with that of the Macchabees. Also the most memorable affairs of Asia and Egypt, and the rise of the empire of the Roman Caesars, under C. Julius, and Octavianus. Collected from all history, as well sacred, as prophane, and methodically digested, by ... James Ussher

Published in 1650, in London, and again in 1654.

Bishop Ussher

Bishop Ussher was born on 4th January 1581, and became Archbishop of Armagh in 1625 and later Primate of Ireland. Apart from being a theologian, he was an avid collector of books, amassing a collection, which he eventually passed to Trinity College, Dublin, a university which his uncle Henry Ussher had helped found. He published 17 works but the *Annales* is his best known. Working backwards through the bible, and also using astronomy and history, he arrived at a date for the creation of the Earth "at sunset on the 22nd October, 4004", with creation beginning at midnight. The date was incorporated into an authorised edition of the bible in 1701. He also calculated that Adam and Eve were driven from Paradise on Monday 10th November, 4004 BC, and that the Ark reached Mt Ararat on 5th May 1491 BC, "on a Wednesday". Ussher died on 21st March 1656.

Bishop Ussher will feature in the HOGG meeting on 22nd October 2004 on "Geofakes, Frauds and Hoaxes".

Editor: Peter Tandy, Department of Mineralogy, The Natural History Museum, Cromwell Road, London, SW7 5BD (tel: 020-7942-5076; fax 020-7942-5537; e-mail pt@nhm.ac.uk)

OOOPS! (again)

Following my apology in the previous issue over an error, the gremlins once again got into the works in the production of issue no.21. Anyone closely reading pages 9 to 10 and 10 to 11 will have noticed that wording carried over the page did not make sense. Seemingly, a line was dropped from the bottom of each page by my printer, even though it is clearly there on the screen on my master copy. I can't explain why this should be so, but can only apologise that I did not spot it in time.

the missing piece from page 9 to 10 is:

"..... Gideon Mantell, namely Dr Sidney Spokes and Sir Arthur Smith Woodward. Dr Spokes, currently....."

the missing piece from page 10 to 11 is:

"..... suffering badly from the salt-laden air at the southern end of Old Steine, only a few hundred yards from the sea (see front cover)."

(Peter Tandy)

Forthcoming HOGG attractions:

HOGG Diary of Future Meetings

The HOGG Committee has set an ambitious provisional agenda of meetings for the future. More details will be given of each meeting nearer the date, but so far the provisional diary is:

2005

(Spring) History of Speleology and Cave finds , combined with a field meeting in the Torquay area related to speleology

(November) "The Role of Women in the History of Geology"

2006

History of Geoconservation

History of Micropalaeontology

(?June/July) a 'Buckland' meeting in Oxford

2007

Celebration of the bi-centenary of the Geological Society

2008

History of Igneous Petrology

Other topics may include:

History of the Philosophy of Geology, the History of Mineralogy, something on

Collections Lost and Found, and more on Hydrogeology

If members have any additional ideas for meetings (or field excursions) the Committee would be pleased to hear of them.



"Geofakes, Frauds and Hoaxes"

A History of Geology Group meeting, Burlington House, Geological Society of
London

Friday 22 October 2004

Registration Form

I wish to register place(s) at the meeting on **GeoFakes, Frauds and Hoaxes**
(Students £5, HOGG members £10, non-members £15)

I wish to book place(s) for **HOGG's Creation Supper** (price £22.50)

Name

Address.....

Email Telephone

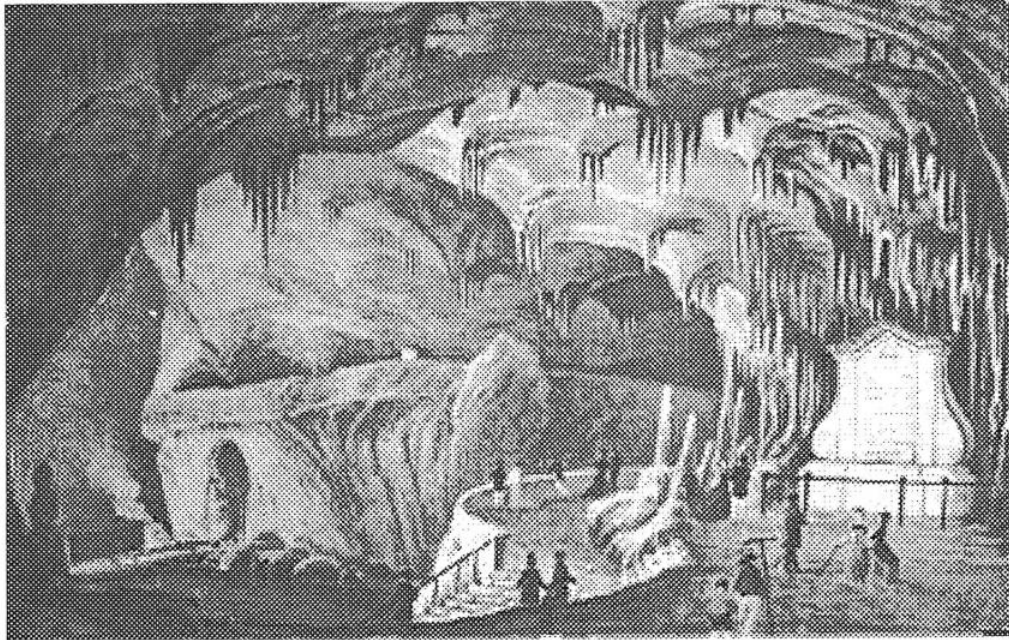
Please send this form and a cheque for the appropriate amount (registration +
supper), made payable to HOGG, to: Dr Cherry Lewis, 35 Morgan Street, St
Agnes, Bristol BS2 9LG

Closing date for registration: Friday 24 September

PROGRAMME

09.00		Registration
09.30	Peter Forey	A fishy business
09.55	Andrew Ross	The "Pitldown Fly" and other amber fakes
10.15	Dave Williams	Is it real? Originals, replicas, models and fakes
10.30	Julian Jocelyn	The scientific work of J.B. Hannay (1855-1931)
10.40		Coffee
11.00	Martin Rudwick	Geologists and fossilists: trust and mistrust in fossil specimens in geology's heroic age
11.25	Paul Taylor & Ann Lum	Beringer's iconoliths or 'lying stones': fossil fraud in the early 18th century
11.50	Joe McCall	The Orgueil Meteorite Fraud turns full circle
12.10	Adrian Rushton	Stimulating the speculators
12.30		Discussion
12.40		Lunch (1.30 HOGG AGM)

"From Earthly Bowels into Light" The History of Geological Speleology and Cave Finds



The Adelsberg Grotto, a postcard of c.1910 (image from Dave Irwin's Web Page at <http://www.irwin24.fsnet.co.uk/>)

A HOGG meeting jointly with the Devonshire Association (Geology Section) and the Pengelly Cave Association, is to be held over three days from 21st April 2005 in Torquay, Devon.

Outline Programme:

Thursday 21st April 2005.

Assemble for the evening when it is hoped there will be talks on

a) William Pengelly, and b) the origin of cave systems

Friday 22nd April: Talks at Torquay Museum on the history of speleology

Saturday 23rd April: Field trips to Kent's Cavern and the caves at Buckfastleigh

Sunday 24th April: TBA.

The meeting will end at lunchtime to allow time to get home.

"The History of Contaminant Hydrogeology "

Friday 17th December 2004 at Burlington House, London.

In cooperation with the Hydrogeology Group, HOGG are organising a meeting on the "History of Contaminant Hydrogeology" on Friday 17th December at Burlington House. The object of the meeting is to review some of the early studies on groundwater pollution.

Anybody interested in contributing a paper to the meeting or receiving further details when these are available should contact John Mather at mather@jjgeology.demon.co.uk or 4 Crockernwell Court, Crockernwell, Exeter, Devon, EX6 6NA.

"The Role of Women in the History of Geology"

Women have fulfilled many different roles over time in the history of geology. They have taken roles as illustrators, academics, travellers, collectors or simply 'wives'. This meeting aims to examine these roles and their effect on the development of geology.

The meeting will be held at Burlington House, Piccadilly, London, on 28th November, 2005, at a time yet to be decided.

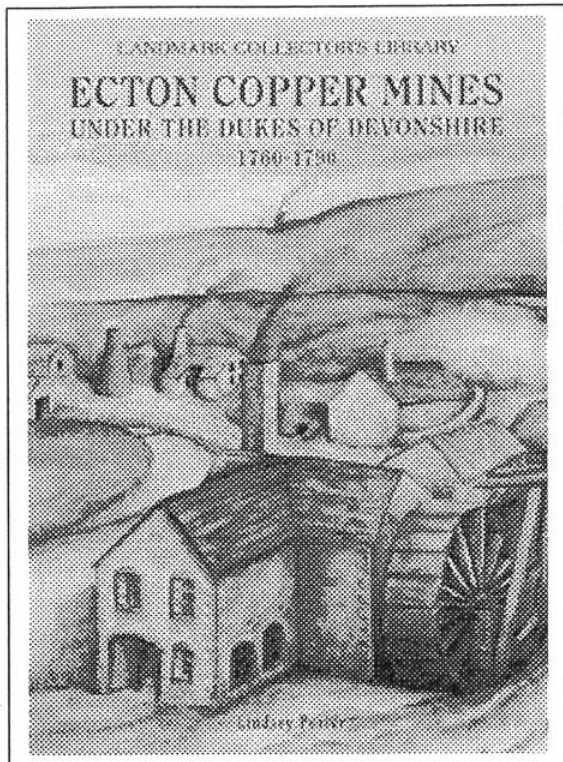
If anyone would like to give a talk at this meeting, would they please contact **Cynthia Burek** at Environment Research Group, Centre for Science Communication, Dept of Biological Sciences, University College Chester, Parkgate Road, Chester CH1 4BJ or email at c.burek@chester.ac.uk or phone on 01244 375444 Ex 3051 (but email is best in the first instance.)

At present the following papers are expected:

Chris Cleal	Women in Carboniferous palaeobotany.
Joan Watson	Women palaeobotanists
Cherry Lewis	Doris Reynolds
Susan Brown	Women in the GA
Bettie Higgs	Irish women geologists
John Mather	Grace Anne Milne, niece of Hugh Falconer and wife of Sir Joseph Prestwich
Cynthia Burek	The role "model" of women in geological education or
Emily Dix & Catherine Raisin	The role of the geological wife
Martina Koelbl-Ebert	The role of British and German women in early 19th century geology – a comparative assessment
Jane Plant/John Dewey	Janet Watson
Tony Brooks	Geologists wives and families - a Sussex case history"
Mary Crease	(no subject yet)
Anne O'Connor	Mary Caroline McKenny Hughes
Jacqueline Malpas & Cynthia Burek	The role of women in the history of biostratigraphical research in North East Wales and the preservation of the sites

For Your Bookshelf...?

"Ecton Copper Mines under the Dukes of Devonshire, 1760-1790" by Lindsey Porter. Pub 2004 Landmark Publishing Ltd, Ashbourne Hall, Ashbourne, Derbyshire, ISBN 1 84306 125 2, pp240, £19.95



The first thing evident when picking up this book, is that it appears to be a book of quality production, with its superior weight and gleaming white paper for pages. Flicking through it gives an indication of the quality of illustrations (all in b/w) and of the mass of detail in the text - production figures and detail leap from every page. However, it should not be taken that this represents a dry and turgid account. Far from it. In fact the minute details are liberally sprinkled through a very readable text.

After an introduction and modern day photographs from within the mine, the book has a brief description of the type of ore deposit, and how it was perceived in the 18th century. We then move into the period of the takeover by the Duke of Devonshire, and the effect that had on ore production, followed by a chapter on the

management structure at the mine, including a section on the fraud perpetrated by The Duke's manager on the spot, Robert Snitterton, who got away with at least £1000 (which in 1760 was a vast sum of money).

Ecton copper mine, set in the picturesque Manifold River valley, doesn't have the appeal today that some of its more famous neighbours in Derbyshire, or those further afield in Cornwall or the northern Pennines have as a result of the richness of now-desirable specimens they produced. Nonetheless it was, in its time, one of the richest mines in England. In a 28 year period from 1761, nearly 42,000 tons of ore was raised, leading to a profit of a shade over £290,000. The mine had started life in 1723 when adventurers started to work a previous digging. When that lease expired another was started in 1739, even though by then the mine hadn't produced as much as expected. The lessor was none other than 4th Duke of Devonshire, and as profits got better he decided not to renew it in 1760 but to exploit it himself. Sadly he died 4 years later and was succeeded by the 5th Duke. Although he continued patronage, neither saw fit to take much interest in the venture which gave them such good reward, and each only made 1 visit to the mine. The 5th Duke's visit in 1783 occasioned an increase in the consumption of malt and hops, probably for beer for the workers, though the author does wonder if the Duke had a soft

spot for bread and butter pudding, as the necessary ingredients were also purchased at the time!

The impact of the mine on the local community is well bought out in many ways in the book. Quite apart from the obvious employment of miners to work the ore, and women to break it down and separate it from the gangue of rock and 'spar', there were many other trades involved. Enormous quantities of timber were required to shore up the tunnels, necessitating woodsmen far afield and carpenters on site. Carriers were required to move ore by mule cart while others supplied fodder to keep the mules alive. The mine required continuous supplies of bricks, ropes, food, clay, and above all nails and candles; over 10,000 candles a year were used, and their importance is borne out when one remembers that without them there could be no mining at all. In a seven-week period of reckoning in 1780, no fewer than 1,321 candles were delivered to the mine along with 742lbs of black powder, and in a year 3 1/2 tons of gunpowder would be used. No fewer than 186,500 nails were also required that year (and nails at that time, were hand made!). By 1780, 300 people were employed at the mine and a further 250 at the Whiston smelter nearby. These are just a tiny number of the bewildering array of facts to be gleaned from this book.

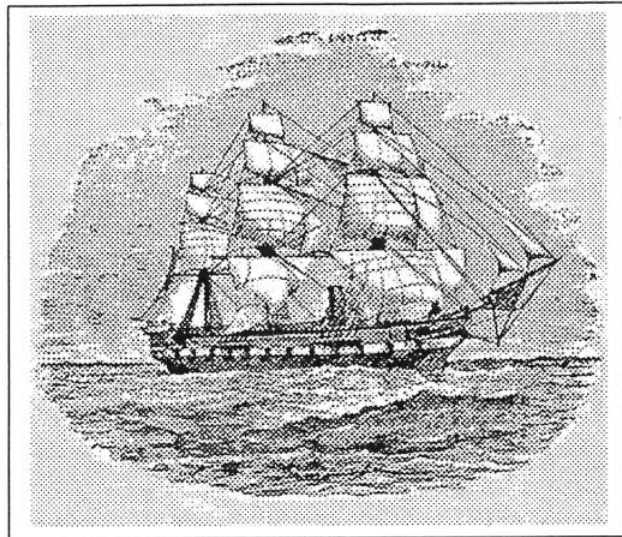
Further chapters look at the dressing and sale of ore, and the workings of the mine. Ecton mine is one of not too many which had a 'Bote' (or boat) level, dug about 1767, and used with wooden boats constructed by the local carpenter to tram ore from the workings. Next, chapters look at some testimonials from visitors to the mine by dignitaries and notables, including Sir Joseph Banks in 1767, and then details of requirements taken from the purchase accounts, which pass alphabetically from 'ale' to 'picks and spades'. Having won the ore it needs to be smelted and the next chapter looks in detail at the smelter at Whiston. The mine had huge impact on the area, not least the road system; transporting ingots of lead weighing 169 lbs each cannot be done over muddy rutted tracks with any degree of success! The book then has a chapter on coal needed for smelting (upwards of 10,000 tons/annum) and its delivery from coalfields near Cheadle. Finally there are short chapters on sales and profit, life in the late 18th century at Ecton (and Wetton), Ecton in the National context, and a glossary of terms used in the mine

Considering that this book only covers 30 years in the life of the mine (albeit probably the more important 30 years) it is a remarkable in-depth study. The author clearly has an ability to get the most from account ledgers and to present them in a readable form which give an insight into life in this 18th century metal mining community. For anyone interested in the history of early British metal mining it represents an excellent addition.

Peter Tandy

"The Silent Landscape: In the Wake of HMS Challenger 1872-1876" by Richard Corfield. Pub. John Murray, London, 2004. pp.285. £20.00. ISBN 07195 6530 8

Deep below the earth's crust great oceans lies an alien world that even today we have only just begun to explore. The quest to know more about this secret domain began in earnest in 1872 when *HMS Challenger* set sail from Portsmouth on the first sea voyage devoted exclusively to science. The expedition is perhaps the greatest oceanographic mission of all time, and one of its most important objectives was to gather the evidence necessary to prove or refute Darwin's daring new theory of evolution. Put simply many saw the Challenger expedition as the ultimate battle between God and science.



Sailing for three and a half years and almost 69,000 nautical miles , scientists and crew alike braved the stifling heat of the tropics followed by the stupefying cold of the Antarctic, enduring danger on the high seas, risking all in the pursuit of knowledge. The undertaking was a resounding success. *Challenger*

dredged up thousands of samples from the sea bed while mapping enormous areas of underwater terrain. Most startling of all, though, was the revelation that the ocean was not a barren graveyard, but a gloriously complex system ecosystem teeming with life.

Drawing from official documentation and the journals of the ship's scientists and crew, *The Silent Landscape* recounts the story of this extraordinary voyage. But Richard Corfield also brings a twenty-first century perspective to bear on *Challenger's* research and discoveries, illuminating the science of that nineteenth century voyage with the most current oceanographic information available. As *Challenger* sails from the endangered coral reefs of the Caribbean to the trackless depths beneath the western Pacific, *The Silent Landscape* takes us on an epic journey across time.

(from the flyleaf)

"Healing Earths: The Third Leg of Medicine. A History of Minerals in Medicine", by W. Rudolph Reinbacher. Pub: 1stBooks Library. ISBN 1-4033-5096-5

Rudy Reinbacher examines the "Moonmilk" cave in the Pilatus Mountains near Lucerne (Switzerland) from where many tons of healing earth were sent all over Europe in the Middle Ages. Research led him to unusual places such as the Sahara and the Kalahari Desert, the tip of South America, Madagascar, northwestern Australia and Papua New Guinea. On an off-the-beaten-track Greek island in the Aegean Sea, Rudy Reinbacher

found the real story of a true ancient legend: terra sigillata, the sealed earth of the Goddess Artemis.

He spent several years in the Rare Book and Special Collection Department of private, state and university libraries in the United States and three continents overseas. His broad concept helped find discussion of earths in disciplines other than medicine and geology, such as in antique philosophy, Egyptology, anthropology, classic history. He read many texts in baroque Latin, Spanish, French, German, as well as modern and medieval English.

This book is not only the story of meditations from the earth, it is an exciting trip through the humankind's written knowledge, it was also many trips through areas of the world where today earths are still prominent in the cure of diseases and the healing of wounds.

(from the back cover)

The New Science of Geology. Studies in the Earth Sciences in the Age of Revolution
Martin J.S.Rudwick, University of California, San Diego, USA, and University of Cambridge. Variorum Collected Studies Series: CS789

Hardback ISBN 0 86078 958 6

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Hugh Miller in Context. Geologist and Naturalist, Writer and Folklorist. The Cromarty Years and the Edinburgh Years, Pub: Cromarty Arts Trust & the National trust for Scotland and National Museum of Scotland. Ed: Lester Borley £7.50

15 essays based on papers delivered at conferences held in Cromarty (October 2000) and in Edinburgh (October 2001), to honour the life and times of Hugh Miller, born in Cromarty on 10th October 1802. Miller, a stonemason and bank accountant in Cromarty, went on to become the editor of *The Witness* in Edinburgh from 1840 to 1856. His many books on geology and other subjects and his reminiscences continued in print for many years after his death, thanks to the dedicated support of Lydia Miller, his widow
(from the back cover)

Celebrating the Life and Times of Hugh Miller. Scotland in the Early 19th century: ethnography and folklore, geology and natural history, church and society. Pub: Cromarty Arts Trust & Elphinstone Institute of the University of Aberdeen, Ed: Lester Borley. £13.50

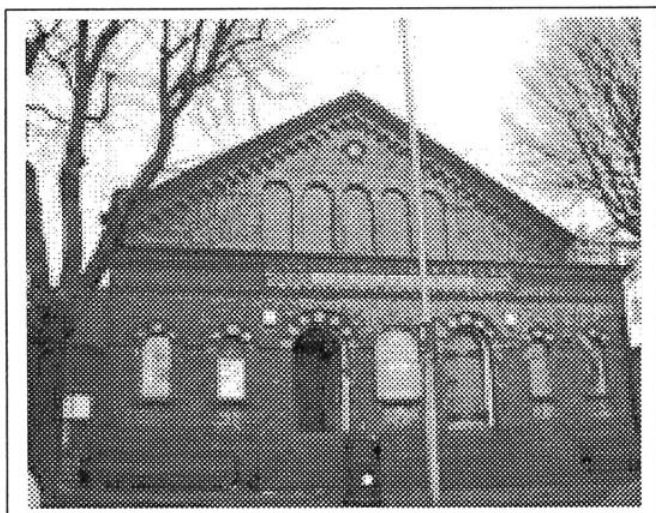
Hugh Miller (1802-1856) as a geologist and writer, used his understanding of fossils to transport his readers back in time to witness a spell-binding spectacle of the creation and unfolding of the world in geological time. The papers gathered in this bicentenary volume also use Hugh Miller's life and writings to explore the way of life in Scotland in the first

half of the nineteenth century, a period of greater scientific progress, with a divided church and the consequences of clearance and emigration.

The thirty papers in this volume were all delivered at a conference held in the 18th century burgh of Cromarty to celebrate Miller's bicentenary. The emigration stone on the Cromarty Links, commissioned from the stonecarver Richard Kindersley, was dedicated by Dr Margaret Mackay, Director of the School of Scottish Studies Archives on 10th October 2002. The Caithness flagstone, 4 metres high, is inscribed with the words that Hugh Miller used to describe the departure of the *Cleopatra* from Cromarty for Canada in 1831, and also lists the names of the ships known to have sailed from Cromarty with emigrants bound for the New World in the 1830s and 1840s.
(from the back cover)

"A Walk on the Weald Side" a report of the 'Sussex Pioneers' HOGG field trip Peter Tandy

Following the decision by the HOGG committee to try and slip something else into the programme in lieu of the cancellation of the Spring meeting, Tony Brook managed to set up a 2-day field trip covering Sussex Pioneers.



For the Saturday the itinerary started with a walk from Brighton Station to the Booth Museum of Natural History. There, former curator John Cooper was waiting to give a short lecture on its history. The large rectangular shed-like museum was built by Edward Thomas Booth. He was born in 1840, the son of a wealthy family from East Anglia, though the family had a background in Hastings. Booth went to Cambridge University where he had a passion

for ornithology, but left Cambridge in the 1860s to return to Brighton. His ambition was to build a museum of British birds, all to be shown in their natural surroundings - quite an innovation for the time. His one stipulation was that no specimen would enter the collection unless it had been personally shot by him!, and his extant notebooks read as a rather dull periodical listing of the numbers of various species shot at various times. In order to fulfil his dream, he bought a property called Bleak House adjacent to the present museum, and in 1874 he built his museum in the grounds. His museum was only open to the public on special days. He died in 1890 following a severe bout of asthma. His museum survived, and is essentially the museum as seen today, with many additions, and was eventually acquired by Brighton corporation together with its stuffed bird dioramas. In recent years, it and the birds, became a listed building, and this has severely tied the

hands of curators who would like to make changes and develop the building, but are prevented from doing so. Following acquisition by the local authority, other natural history collections, especially insects and fossils, were added, such that it now comprises one of the largest collections of fossils in the south east, and indeed in the country.

Of these collections, one in particular is that of the little known Sussex collector and Quaker, George Bax Holmes. Holmes had been born on 3rd May 1803 at Horsham, and grew up in the Quaker environment of his father, Joseph. George himself went to his first meeting in 1829, three years after he had married Mary Burns of Chichester. In 1836 his father died and left considerable wealth including several properties. His Quakerism may have started his love of fossils since the teaching included natural subjects and nature study. His collection was begun about 1832 and by 1840 was being admired by none other than Richard Owen. Owen was impressed, especially with some of the bones of iguanodon. They continued correspondence with Holmes even trying to identify some of Owen's fossils. Holmes engaged his daughters to make exquisite drawings of many of his finds, and sent some to Owen fully expecting to see them appear in print after the formation of the Palaeontographical Association in 1847. Although he was mentioned in 1851, it was not until 1855 that his specimens were used in quantity. Although he continued to collect and be interested in Wealden fossils, he had a family of four daughters and a son to look after, and this clearly consumed much time. Sometime between 1856 and 1868 he became seriously ill, but recovered. Although details are scant it seems he lent some material to the "Horsham Loan Exhibition" in 1874. Holmes died on 31st March 1887, and was buried at the Friends Meeting House in Horsham. Amazingly, though all headstones were removed in Quaker fashion, two were kept as paving stones. One of these records the names of George Bax Holmes and his wife Mary.

(for more information on Holmes see: COOPER, J. A. The life and work of George Bax Holmes (1803–1887) of Horsham, Sussex: a Quaker vertebrate fossil collector. *Annales of Natural History*, 19 (3): 379–400 (October 1992), and George Bax Holmes (1803–1887) and his relationship with Gideon Mantell and Richard Owen, *Modern Geology*, 18,(1993):183–208).

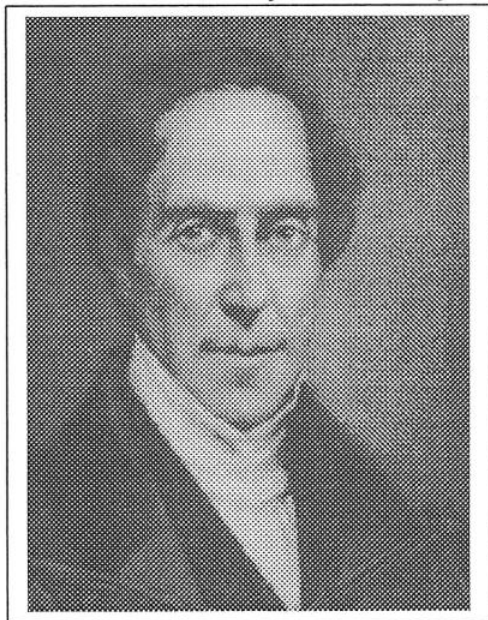
Following the talks, the group was privileged to be shown the storage areas on a creaking mezzanine floor above, and, some of the latest palaeontological research work. This is being done on perhaps the largest collection of fossil aphids (!) from a find in Continental Europe.

In the afternoon, following a pub-based lunch, the group walked across a Chalk dry valley at Goldstone Bottom, to the interesting preserved water pumping station at Hove, now known as the British Engineerium. In a building deserted of people, the owner/curator gave a somewhat strange & idiosyncratic talk and guided tour. The main engine preserved is known as the "Goldstone Giant" a beam engine which formerly pumped water for Brighton and Shoreham, from the Chalk. Its enormous beam high above, and gigantic 26 foot flywheel are indeed impressive. Built in 1876 and delivering a nominal 130hp at 12 rpm to lift water from an oval well 12 feet by 9 feet, at a depth of 160 feet, the two 33" bore by 30" stroke bucket pumps are capable of lifting 130,000 gallons of water per hour. Sadly, it would not be in steam until the following day, but equally it was good to be able to see it with no-one else around. For a historical geological connection we had to think that this is the same kind of engine which was used

so extensively in Cornwall, Devon, Shropshire, Wales and much further afield, to de-water mines, and which allowed the extraction of metals from deep-seated lodes. With some imagination it was not hard to visualise its enormous beam gently oscillating to operate pump rods to raise water from a shaft, or operating a 'man-engine' to lower miners to their places of work.

Following the guided tour of the pumping station, it was a pleasant walk through Hove Park, to the original 'Goldstone'. This is a huge sarsen stone, which had been known since the 1880s when it stood in a field of wheat. Unfortunately, its attraction to druidic types led to damage to the crop, so the farmer buried it. After the land became a park it was rediscovered and remounted behind its own circular barrier, along with some 7 or 8 other smaller examples, for all to see. About 7 feet square and 2 feet thick, it consists of a brown fine-grained siliceous matrix containing on one side many angular flint pebbles. There was some discussion by the group about the origin of sarsen stones in general, and why this one should have such angular flints - this topic would crop up again the next day.

The Sunday morning dawned rather grey, though the forecast was for strong sunshine (which did arrive for the afternoon). Meeting at 20, Old Steine in central Brighton, we first looked at the plaque erected in honour of Gideon Algernon Mantell, now on a building undergoing some renovation. The plaque, approximately 15" square surmounted by a portion containing a relief of two dolphins (see cover of newsletter no.21), had been extensively painted in the past. Notwithstanding this, it was felt that it was still intact, even readable if with some difficulty, and, if permission could be obtained, could be renovated at relatively little cost by doing little more than removing the layers of paint.



Tony Brook related the tale of Mantell and how he had lived in this then-elegant town house from 1833-1838, and had erected his museum of fossils on at least two of the floors.

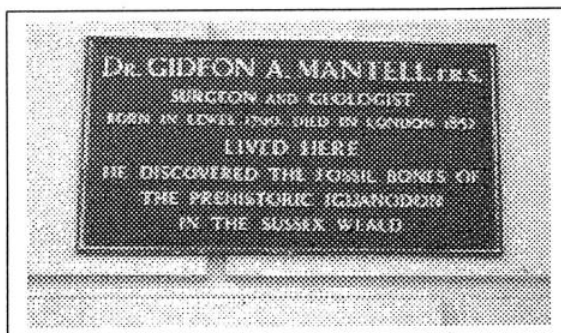
The group then drove to Lewes, where Mantell had lived and practised as a doctor, but made a stop at Falmer pond to look at more examples of sarsen stones. Here, around the pond are more examples of these somewhat curious stones (now arranged around the old water pump). In this area they proliferate on the Downs between the Rivers Adur and Ouse. Although these examples bore a superficial resemblance to the Goldstone example, they didn't show the same angularity of pebbles. Their origin was again discussed at length with the general conclusion that they represent the remains of a sub-tropical silcrete

formed between periods of intense rain and long drought. After this, the group continued onwards to Lewes.

Walking up the hill to the High Street from the car park, it was possible to see Baxters, stationers and printers which was established in 1802, where Mantell's younger brother

Joshua served an apprenticeship as a bookbinder. Somewhat further on we came to Lewes Castle. Though this had no historical geological connection, the house situated in its shadow did, as it was the one purchased by Charles Dawson, who was later deeply implicated in the Piltdown fraud. Dawson was a solicitor, and the house was leased by the Sussex Archaeological Society, but Dawson managed to purchase it first. There was speculation by the group that his work as a solicitor could have given him an advantage which he exploited ruthlessly. Certainly the house, a large building with ecclesiastical style windows, turreted rooflines and a knapped flint exterior, is probably the most desirable in the town, and certainly the most noticeable. If anyone ever wanted to show that they were on the way up in society, it is surely the house to own. The Sussex Archaeological Society were (and still are) relegated to a red-brick building some 50 yards away, outside the castle precincts, and looked down upon by Dawson's mansion.

Returning to the High Street, just a few yards further on, another elegant town house (Castle Place) bears a plaque stating that it was the home of G.A. Mantell. Originally it consisted of two houses, of which Mantell bought firstly the right hand one, then the left hand one, and then had a grand new frontage, with porticoed entrance, built on them to enhance their status



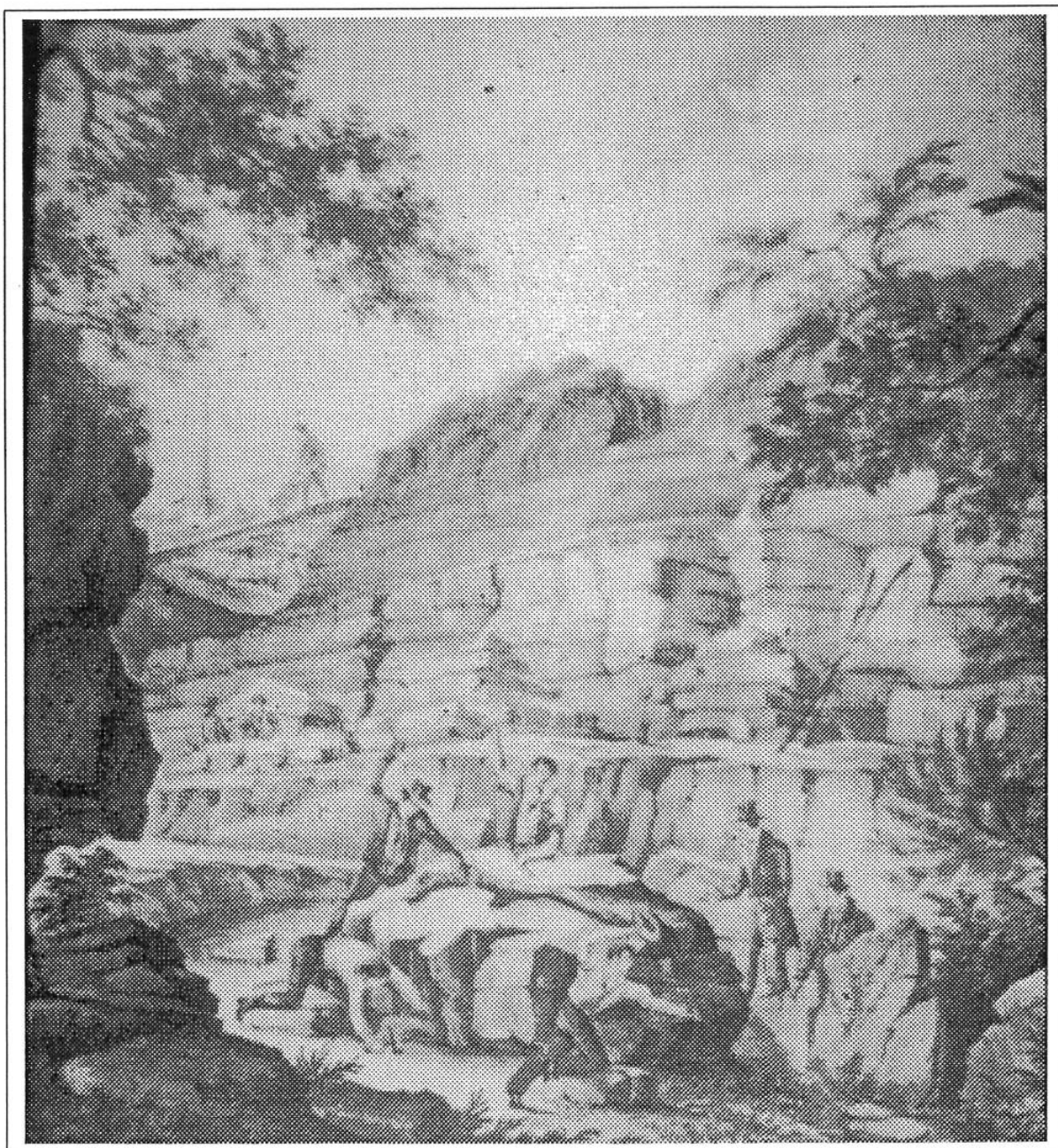
and convert them into one grand house. It was here that he set up his museum of dinosaur bones, somewhat to the consternation of his wife who was not too keen to entertain the good ladies of Lewes amid piles of rock!

A few strides further up the hill is the church of St Michael's where it was possible to inspect the memorial tablet to Mantell, erected by unknown persons in 1857 (the lengthy text of this plaque was quoted in full in Newsletter no.20, p.14). The plaque is an elegant brass etching some 3 feet by 2 feet set in a surround of an indeterminate sandstone, mounted on the north wall of the church (with insufficient lighting to be able to read it clearly). Nonetheless, with its extensive wording, variable coloured initial letters and coloured corner monograms and escutcheons, it was, in its time, an expensive addition to the church. Given that Mantell and his family were dissenters to the Anglican faith, it still remains a mystery of just who erected it. Discussions about the style of manufacture (? etching rather than hand engraving), the wording (the benefactor had to understand the meaning of "the fluvial origin of the Wealden formation" etc), and other aspects, kept the group busy until the churchwardens wanted to close the church for the day.

Lunch for the day was taken in the village of Piltdown, and where else but at the "Piltdown Man" pub, a rather anonymous white clapboard building whose inn sign features a skull with enormous eye sockets, one beady blue eye, and a mischievous toothy grin. In the pleasant summer sunshine we talked about the Piltdown fraud, as well as the site of the discovery of Iguanodon by Mantell. This would be our final stop, but first a slight detour down a narrow country lane to get as close as one can nowadays to the site of the Piltdown find. Now set in the private grounds of Barkham Manor, it is only possible to peer through electronically operated gates, between the parallel rows of trees,

towards the small gravel pit (now no longer open) where Charles Dawson and others 'found' the infamous skull.

Following some further discussion, it was off to the site of the find of Iguanodon at a quarry at Whitemans Green, just west of Cuckfield. Now, it's a level playing field (literally!) with a plaque and memorial tablet of sandstone outlining the discovery by the Mantells of the first Iguanodon bone. A contemporary lithograph provided by Tony Brook shows the quarry at the time of the discovery, with Mantell, Lyell, Buckland and others in attendance. Crucially, the lithograph shows the spire of Cuckfield Church in the distance and beyond it Ditchling Beacon, which means it has to be a view looking SE. There was some dissension that a quarry of the apparent size and depth shown in the lithograph could be filled with (presumably) rock and soil waste, to such an extent that it was flat enough for sports pitches; the thought was there must surely be some settlement as the materials bedded down. This led to a feeling that either the lithograph (below) was



somewhat overdone by the artist (and the quarry nothing like a deep as shown), or the suggested viewpoint position was wrong, and a search was undertaken to try and see if anything remained of the quarry face. This took us on a lengthy trek through grassed fields ringed with nettle beds, in search of a better location. But though we found hummocky ground beyond the pitches, the land sloped in the wrong direction for it to have been a quarry face *over* which Cuckfield Church spire could be seen. Eventually, a young man out walking his dogs, said he remembered two small quarries, now beyond the rugby pitches, and marked by clumps of large trees. Investigation did indeed show undulating ground in the vicinity of clumps of trees with, in one, a depression of some 15 feet, now filled by soil and logs. Beneath some of the large trees growing here, there is clearly a thinly-bedded light-brown sandstone, and it was possible to stand in the depression and look **towards** Cuckfield Church spire and imagine it being beyond a quarry face (albeit perhaps not a very big one). It was heartening to think that we may have seen the last remains of the actual quarry that Mantell consigned to immortality when he discovered the famous *Iguanodons* of Tilgate Forest.

That was the last activity on what had been a most interesting weekend. As the sun shone brilliantly, we bade our farewells and left for home. Our thanks go to Tony Brook for masterminding and leading it. The only real disappointment was the lamentable turnout. Just 4 people on each day - so much effort for so little response!

ADVANCE NOTICE

YORKSHIRE GEOLOGICAL SOCIETY: GENERAL MEETING

Saturday 16 October 2004 at the University of Hull's Scarborough campus, commencing 2 pm

William Smith and early geologists on the Yorkshire Coast

This meeting is open to all. It forms part of our normal winter series of meetings, but is also a contribution to the celebrations marking the 175th anniversary of the opening of the Rotunda Museum in Scarborough, designed under the guidance of William Smith. The programme will consist of two main talks, plus a brief account of the proposed redevelopment of the Rotunda to restore it to a geological role.

On the following morning (Sunday 17 October) there will be a brief visit to the Rotunda, followed by a half-day geological field excursion around South Bay and the castle headland, led by YGS Council member, Peter Robinson.

The visit to the Rotunda museum will be open to all. For the geological excursion in South Bay first preference will be given to YGS members, but the organisers will do their best to accommodate HOGG members too. Please inform the local organiser, Mr Will

Watts (Email: Will.Watts@scarborough.gov.uk), by **Friday 1 October 2004**, if you intend to visit the Rotunda and/or if you wish to join the excursion'.

Further details of this meeting and the field excursion can be obtained from:

Will.Watts@scarborough.gov.uk

The titles and abstracts of the two main talks are:

William Smith and his geological advances as expressed through his work in Yorkshire

H.S. TORRENS

The lecture will deal first with Smith's early years, with special reference to his several visits made to Yorkshire, and the reasons behind them, before 1815, when his great Geological Map was published. This then contained a significant mistake in the correlation of Yorkshire's rocks with those that Smith had 'standardized' farther south near Bath, by mis-representing the horizon of the Alum Shales at much too high a stratigraphic level. The important reasons for this previously misunderstood "error" will be carefully examined.

After Smith's release from prison in London in the autumn of 1819 he, and his newly geologically-apprenticed nephew John Phillips, became at first itinerant all over the north of England. But a short visit to Scarborough in 1817 had made Smith aware of the delights and geological potential of Scarborough and, after his mysterious wife showed serious signs of mental disturbance in 1819, he decided to try to settle there. His immediate contacts in this part of Yorkshire in the 1820's will be dealt with next in the lecture. These include his important part in the foundation of the Scarborough Rotunda museum and his work at Hackness for Sir John Johnstone. His forgotten work while there as a trainer of geologists will also be described. His pupils included such later significant geologists as Roderick Impey Murchison and George Featherstonhaugh from America. Finally, Smith's part in that significantly 'Yorkshire' advance in geology – involving the careful discrimination of fossil distributions within single lithostratigraphic units (as exemplified by the work in the 1830's of Louis Hunton and William Crawford Williamson) – will also be outlined, as will Smith's death and its aftermath and sad effect on his widow.

Scarborough: 'the finest spot for a geologist that the whole earth contains'

SIMON KNELL

November 1822 saw an explosion of museums across Yorkshire. It was the moment when England established its museum culture; a culture that owed a great deal to the new science of geology. As lecturers, curators, advisers and fieldworkers, William Smith with his revolutionary ideas and John Phillips, his nephew and protégé, with his extraordinary communicative powers, catalysed museum, and geological, development. Whitby geologists, George Young and John Bird, had already begun the Yorkshire geological project but used ideas which were soon outmoded. William Buckland and his Oxford friends, William Conybeare and William Vernon (Harcourt), were also interested in resolving the county's geological questions. They and others knew of the geological potential of Castle Hill – but no one had realised that potential. In April 1824, Phillips wrote to tell his new friends in York that 'Scarborough Castle Hill is surely the

finest spot for a geologist that the whole earth contains'; the previous November he had told them: 'The Scarborough Castle Hill may rival any hill or mountain upon earth in the extraordinary Section of Strata which it presents around its precipitous sides'. It was here that Phillips recognised the Kelloways Rock of Wiltshire which provided a key stratigraphic anchor which permitted the completion of the superimposition of Smith's order of strata on northern England.

In the course of this project, Phillips inherited Smith's geological project and famously produced a large geological section of the whole of the Yorkshire coast which he used in his lectures and which was copied onto the walls of the Scarborough Museum (though only a newer version can be seen today). It was also printed in Phillips' pioneering book on the geology of the Yorkshire coast (1829), which applied Smith's teachings brilliantly and finally proved to any doubters that Smith's ideas were correct. Phillips spent the rest of his life exploring and extending Smith's geological inventions and rose to the position of Oxford professor. This lecture, however, will concentrate on Yorkshire and explain that this geological breakthrough relied upon a whole raft of things that weren't so geological at all: museums, gift giving, civic pride, blood-ties, an emerging fossil trade, collector rivalries, patronage and so on, as well as the discovery of new fossil localities. It is a story of remarkable relationships between the towns of York, Whitby and Scarborough, and it explains why we have museums in these towns today.

Lancaster University
Centre for North-West Regional studies
in conjunction with
Lancashire County Museums Service

Richard Owen: Dinosaur Man
A bicentennial symposium in celebration of his work
Saturday 20th November 2004

The year 2004 marks the bicentenary of the birth of Lancaster's 'Man of Science' - Sir Richard Owen. He is best known for coining the word 'dinosaur', but was the founder and visionary behind the establishment of the Natural history Museum and scientific advisor on everything from public health reform to sea serpents. He received over 100 distinctions during his life time and was a brilliant comparative anatomist and yet, because of arrogance and jealousy, allowed himself to be cornered as an anti-Darwinian and almost written out of scientific history. Accused of not crediting colleagues and ousting scientific rivals, to say he was a colourful and controversial character is perhaps an understatement. However, the quality and sheer volume of his work was remarkable and unparalleled.

The symposium will give people the opportunity to find out more about Owen's contribution to science, the huge impact new scientific discoveries had on Victorian lives and how the work of today's scientists studying dinosaur bones compares with those of the Victorian period.

Programme:

9.30am Registration

10.00-11.00 Between the apes and the angels: where should Richard Owen be placed?
Professor John Brooke, Oxford University

11.00-11.30 **Coffee / tea**

11.30 - 12.30 The Training of a surgeon in late Georgian England: Richard Owen and
the medical world
Dr Allan Chapman, Oxford University

12.30-1.30 **Lunch**

1.30-2.30 Richard Owen: Lancaster's inventor of dinosaurs and much else
Professor Hugh Torrens, Keele University

2.30-3.00 **Tea / coffee**

3.00-4.00 Dinosaur Hunting in the 21st century
Dr Phil Manning, The Manchester Museum, University of Manchester

Fee: £16.00 (£15.00 for Friends of the Centre; fee includes coffee/tea & biscuits)

**Please book and pay for event places in advance;
enrolment on the day is NOT generally possible.**

In the event of a cancellation, please give 2 working days notice and money will be refunded

Richard Owen: Dinosaur Man - Saturday 20 November 2004

Name

Address.....

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Please reserve place(s) at £16.00 (or £15.00 for Friends of the Centre). I enclose a cheque/PO for Cheques payable to Lancaster University. Please return to Christine Wilkinson, CNWRS, Fylde College, Lancaster University, Bailrigg, Lancaster LA1 4YF.

We also accept credit card payments (excluding American Express & Diners Club)

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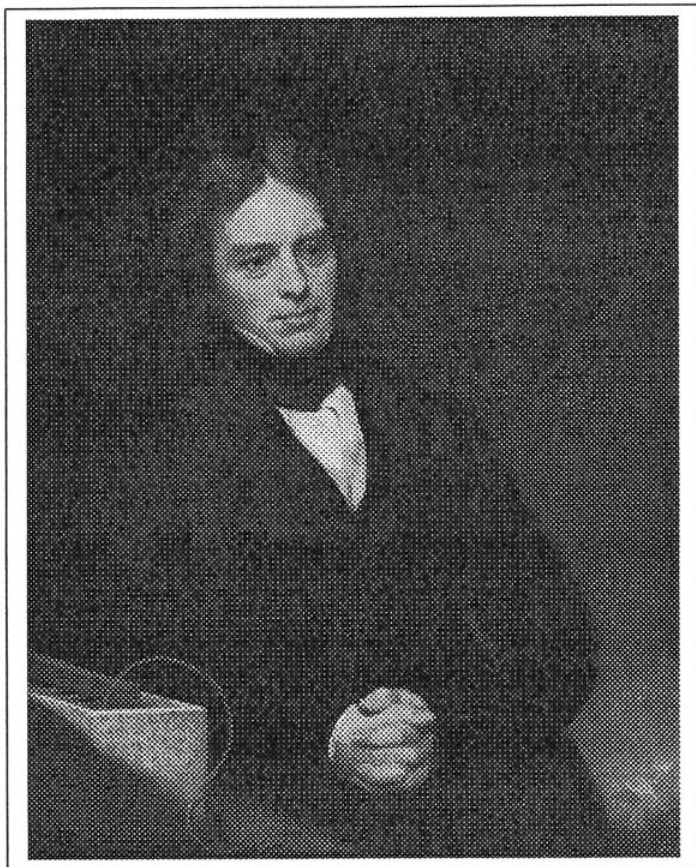
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On the Geological Propensities of Michael Faraday

Tony Brook

Contrary to received opinion there is far more to Michael Faraday as geologist than the unfortunate dispute with William Wollaston over priority to electro-magnetic effects in the autumn of 1821 (1).



Michael Faraday by Thomas Phillips, painted 1841-42,
by courtesy of the National Portrait Gallery, London.

Michael Faraday was proposed as a Fellow of The Royal Society in May 1823 but, due to opposition from certain quarters, was not elected until 8 January 1824. Already recognised as the leading physicist of his day, with a peripheral interest in the Earth Sciences, Faraday was elected a Member of The Geological Society on 4 June 1824, sponsored by 8 Members, including Buckland and Greenough, and served on the Council of the Society for a single 2-year term, 1828-30, under the Presidency of William Henry Fitton. Michael Faraday lived from 22 September 1791 until 25 August 1867, and was therefore the exact contemporary of all the major participants in the so-called Heroic Age of Geology — Lyell, Sedgwick,

Murchison, Mantell, Buckland, etc, etc. He knew them all, some more than others, until his retirement from The Royal Institution in 1862, aged 70 (2), and his resignation from The Geological Society in January 1866.

To escape the pressures of work and London Michael and Sarah Faraday decided to take their summer holidays in 1824 and 1826 on the Isle of Wight, staying both times with relatives in the village of Niton. In July 1824 Faraday went for long walks over the island, from Shanklin Chine to Alum Bay, and made copious notes, covering 6 manuscript pages, on the geology and landscape, which he later wrote up in his Commonplace Book, Vol. 2, pp. 393-98. These 'geological notes' were recently published, with a commentary, in a periodical which geologists would not normally frequent (3); it therefore seems worthwhile reiterating some of the main points of that elusive paper. Like so many scientists of his era, Faraday was taking a cursory interest in

the new and rapidly-developing science of Geology, but for Faraday this was not a new interest. Whilst attending Humphry Davy as assistant on his European tour of 1813-14, young Faraday would have been a most attentive listener as his mentor explored and explained geological phenomena en route: one of the original Founder – Members of The Geological Society in November 1807, Davy was in the forefront of geological progress during a decade of controversy (4). Before he left on holiday, Faraday would doubtless have read the latest account of the geology of the island, by Adam Sedgwick in the *Annals of Philosophy* for 1822, a scientific journal he read avidly from cover to cover (5).

Faraday's 'geological notes' reveal a keen knowledge of rocks and minerals; he collected samples and tested to determine a siliceous or calcareous matrix. He was not so familiar with fossils or fossiliferous strata, which were in the vanguard of contemporary geological research. "His appreciation of the landscape also extended to the observation of many other [geomorphological] features, and sometimes to interpretation of their formative processes"— for example, landslips, chins and cliffs. These brief notes, made for his own benefit, reveal quite a lot about Faraday; in particular, they indicate what he beheld in terra incognita. The authors of this paper continue that 'throughout, his comments are accurate, interested and generally well-informed The overall impression is of a man with considerable skills in observing his surroundings and interpreting its significance'. They conclude that 'Geology is very much an observational science', which suited Faraday right down to the ground.

Indeed, Faraday was always a lynx-eyed and scrutinising observer of natural phenomena, as shown by his observations on the seashore at Hastings whilst in holiday in July 1831. He recorded in his diary for 18 July: 'remarked a peculiar series of ridges produced by the action of steady strong wind on water on sandy shore. Whenever the sand was covered by a layer of water too thin to form waves before the wind yet flowing over the surface, slight ridges were formed parallel to the direction of the wind. These would be 2-4" long and were continually reciprocating they were not high, but high enough to arrange the sand beneath, which was left lined in this way to the wind's course over very extensive flats. May serve to indicate previous wind direction, for they are perfectly parallel to its course'. That was a very astute piece of geomorphological observation, leading to a logical deduction and postdictive axiom, useful to geologists studying rippled sandstones.

Faraday initiated the Friday Evening Discourses at The Royal Institution in February 1826, where the latest scientific advances were presented and discussed in an atmosphere that was a potent mix of scientific meeting and high-society *soirée*. They started promptly at 9 pm., lasted exactly 1 hour, and were followed by tea and *conversazione*, either about the 'objects of interest' on the Library Table, or the topic of the evening's lecture, or some other aspect of the rapidly – changing world. The topics of the Evening Discourses were very wide-ranging over many decades, embracing the sciences, technology and the arts. What they all had in common was Faraday's fundamental: they should be Science by demonstration, and clearly illustrated by example or experiment. The Friday Evening

Discourses were well reported in the weekly news journals of the time, *The Literary Gazette* and *The Athenaeum*, and they became very successful and highly influential. Faraday therefore had little difficulty in persuading some of his geological friends to give presentations to the 'power elite' in the famous Lecture Theatre, at a time when Geology was the in-vogue science. For example, Roderick Murchison gave 4 of these Friday Evening Discourses – on Russia (6 June 1845), Glaciation (22 May 1846), Gold (1 March 1850) and The Alps (7 March 1851); and Charles Lyell gave at least 6 lectures on various aspects of his tours to America, between 1845 and 1855. All were comprehensively reported and maintained the exalted public profile of geological enquiry.

Faraday first made the acquaintance of Gideon Mantell in October 1834 when Mantell was still resident at 20, Old Steine, Brighton, and they remained firm friends and scientific colleagues for many years, more so after Mantell moved to London, to Clapham in 1838 and then to Pimlico in 1842. They met and conversed regularly, at scientific meetings of one sort or another, and on many social occasions. Gideon Mantell, who was an excellent public speaker, gave 4 presentations to this crowded high-status audience: on The Iguanodon, etc (12 May 1837), the Geology of Southeast England, etc (4 May 1849) and the Geology and Fossils of New Zealand (10 May 1850). The last one, On the Structure of the Iguanodon and the Fauna and Flora of the Wealden Formation, took place on 5 March 1852, when he was suffering acutely from his bad back. Leonard Wilson captures the mood of the evening, in a paragraph from the second part of his biography of Charles Lyell (6): '[Charles and Mary Lyell] attended a Friday evening lecture by Gideon Mantell at the Royal Institution. Although desperately ill and in great pain from a tuberculous abscess pressing against his spine, Mantell roused himself to give a spirited and entertaining lecture. To accompany his lecture on the *Iguanodon* and other fossil reptiles, he displayed "a splendid collection of bones on the table". Poor Mantell knew that it would be his last performance at the Royal Institution. Perhaps many of his audience also sensed the fact. After the lecture he stood at the table for more than half an hour, explaining the bones to the eager crowd. The next morning he received a note from Lyell congratulating him on his great success. To Benjamin Silliman in America, Mantell wrote that "the room was crowded to the ceiling. Herschel, Brewster, Babbage, Faraday, Murchison, even Lyell, & all our best men were there". With characteristic kindness, Michael Faraday told Mantell it was the most successful & eloquent discourse ever delivered there," a compliment that was balm to Mantell's ravaged spirit.' In his Journal Mantell wrote.

Friday March 5 1852

John took up the diagrams and specimens, went up at 4 [p.m.] and inspected the arrangements. To the lecture at quarter to 9. A crowded lecture room — my discourse was well received — ended at 5 minutes past 10. Professor Faraday as kind and cordial as ever. The company appeared to be much interested: after the lecture had to stand at the table at least ½ hour to explain to the crowd. The diagrams presented a grand sight; and the large table and 2 extra ones were covered with Wealden fossils. Mr Woodhouse had 2 microscopes in the Library and exhibited sections of Iguanodon and Pelorosaurus bones. Returned home with Mr Grantham soon after 11, having taken tea with Professor Faraday.

Saturday March 6 1852

Letter from Sir C. Lyell congratulating me on the eminent success of my lecture. Altogether the lecture seems to have given satisfaction: I feel that it ought, for the trouble was very great, the drawings very good, the specimens (some 100's) unrivalled.

An inventory of those geologists and palaeontologists, and their topics, who gave Friday Evening Discourses under Faraday's benevolent management would be most revealing, and might help to explain why Geology was so popular and fashionable during those decades when Faraday was the dominant force at The Royal Institution.

Roderick Murchison had two further associations with Michael Faraday. After coming to London and deciding to become a Geologist, Murchison attended a series of science lectures at the Royal Institution in the autumn of 1823, and was present when Faraday gave his very first public lecture. James Hamilton, in his recent biography of Faraday, related events (7):

"It happened on one occasion in 1823 that [William] Brande became ill and Faraday had to step in at the last minute. The lecture he gave was 'so brilliant . . . the experiments following his words with much surprising facility and with such success, that the applause was universal; from that moment every student [in the audience] was convinced that Faraday was born to rise to great dignity and importance.' The quotation comes from the Recollection of Sir Roderick Murchison during his chairmanship of a Public Meeting held at The Royal Institution on 21 June 1869 to move that a subscription be raised for a public memorial to Michael Faraday.

Much later, in the autumn of 1860, Murchison and Faraday, both by now eminent scientists and 'men of power and influence', prepared and produced Reports for the Board of Works about alternative methods of preserving the stonework of the recently-rebuilt New Palace at Westminster (8).

By the 1840's Faraday, by now the epitome of British science in the new Victorian age, had become an 'expert witness'. There was a disastrous explosion at Haswell Colliery in County Durham on 28 September 1844 in which 95 men and boys were killed. The Prime Minister, Sir Robert Peel, appointed Michael Faraday and Charles Lyell to inspect the mine and prepare a Report, with recommendations to prevent the recurrence of any similar catastrophe. Faraday and Lyell attended the Inquest on 9 October, and inspected the underground workings the following day. The very presence of two such eminent scientists at the Inquest, on Government business, had symbolic significance and conferred high scientific status on the eventual verdict. Their Report to the Home Secretary was published in full, minus any illustrations, in *The Philosophical Magazine* (9); thereafter, because of the frankness of its recommendations, it was quietly shelved. However, Faraday subsequently delivered a Friday Evening Discourse to a packed house on ways and means of preventing fire-damp explosions and improving ventilation in coalmines: Science could greatly improve mine safety, and save lives.

Without a shadow of doubt Michael Faraday was the greatest experimental scientist of his generation, which happened to coincide with the years of Geology's supremacy. As a

young man Faraday was fortunate enough to receive personal tuition in the field from one of the foremost exponents of this new and controversial science, which, combined with his acute powers of observation and analytical turn of mind, could easily have turned him into a geologist rather than a physicist. His career spanned the most profound changes in paradigms about geological and biological processes, changes which would have caused him deep and painful anguish because of his strong predilection for scriptural geology. He seems to have repressed any misgivings and maintained a dignified silence in the presence of Lyell, Darwin, etc. He knew so many geologists of that critical era, and was well aware of their work at the frontiers of geological knowledge: he knew enough geology to realise what was happening during his lifetime. Perhaps his greatest service to the innovative science of Geology was the platform he provided, via the Friday Evening Discourses at The Royal Institution, for geologists to reach out to those of power and influence in the land and establish Geology as an exciting and useful form of intellectual enquiry. Like many of his polymathic contemporaries, Faraday's interests were unrestricted and extended far beyond his brilliant reputation in electricity and magnetism. He simply wanted to know how the world worked, and that included the world beneath his feet.

References

- 1) 'From the Archives' Geoscientist 14 (January 2004) ?
- 2) The Index to the latest biography of Michael Faraday viz. James Hamilton Faraday: The Life Harper Collins 2002, paperback ed. 2003, has, in addition to an entry for 'Geological Society', entries for the following geologists of Faraday's generation: William Buckland, William Coneybeare, Georges Cuvier, Henry de la Beche, Charles Lyell, Gideon Mantell, John Carrick Moore, Richard Owen, Adam Sedgwick, William Smith, William Wollaston and Henry Warburton.
- 3) Brian and Keith Bowers "Michael Faraday's Geological Notes on the Isle of Wight," Notes Received, The Royal Society 50 (1996) 65-74
- 4) Robert Siegfried and R. H. Dott, Jr. "Humphry Davy as Geologist, 1805-28," British Journal for the History of Science 9 (1976) 219-27;
 Alexander Ospovat "Four hitherto - unpublished geological lectures given by Sir Humphry Davy in 1805," Transactions of The Royal Geological Society of Cornwall 21 (1978) 1-96;
 Robert Siegfried and Robert Dott, Jr. Humphry Davy on Geology: The 1805 Lectures for the General Audience Madison; University of Wisconsin Press, 1980.
 In his introduction, Ospovat (1978) remarked that 'During his 10 years of lecturing at the Royal Institution, Davy gave at least 3 series of lectures on geology. One of the 3, that of 1811, was given at least twice. . . . These lectures, which combined the scientific with the romantic, accompanied by the most spectacular illustrations Davy held at his command, were immensely popular. . . The large audiences were varied — natural philosophers, literary personages, aspiring scientists, and, most of all, the wealthy and fashionable of London. . . This was a decade of controversy in Geology, between the Wernerians and the Huttonians.
- 5) Adam Sedgwick "On the Geology of the Isle of Wight," Annals of Philosophy Series

- 2, Vol. 3 (1822) 329-55
- 6) Leonard Wilson Lyell in America: Transatlantic Geology 1841 to 1853 Baltimore; The Johns Hopkins University Press, 1998, 358
 - 7) Hamilton, op. cit., 186 and 428
 - 8) Letter to The Times, Dec. 25, 1860 from Mr F. Ransome, of Ipswich.
 - 9) "Report from Messrs. Faraday and Lyell to the Rt. Hon. Sir James Graham, Secretary of State for the Home Department, on the subject of the Explosion at the Haswell Collieries, and on the means of preventing similar accidents," Philosophical Magazine Series 3, Vol. 26, (January 1845) 16-35
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Can you help?....

John Edward Price's 'Geological Chart'

Does anyone know anything of a 'geological chart' written and printed by John Edward Price, FSA, FRSL, sometime around 1880-1890? There is apparently reference to his work at the BGS office at Keyworth, Nottinghamshire as he worked with F.W.Rudler, Curator of the Museum of Practical Geology, from 1883-7. He was a noted antiquarian, particularly associating with Sir John Evans about numismatics, and is acknowledged by the Society of Antiquaries as a "distinguished antiquarian". He re-organised the Roman sections of the Guildhall Library and Colchester Museum. He became a Fellow of the Zoological Society and Joint Director of the Royal Anthropological Institute and his work formed the basis for the distinguished careers of Sir John and Sir Arthur Evans, and also of Sir Mortimor Wheeler, the person who first popularised archaeology on television. He wrote extensively on Roman London and Roman Britain. He died prematurely in 1892.

His great-grandson, Mr R.J.B. Price-Clarke would like to trace details of the geological chart. This is likely to have a strong pictorial context.

Please contact The Editor (address inside cover) who will pass on information.

Lest we forget...

This is just a reminder that subscriptions for HOGG will be renewable in January 2005. Subscriptions currently stand at £10/annum. A full reminder and Standing Order form will be sent out in the January /February 2005 newsletter.

and don't forget the HOGG website at:

www.geolsoc.org.uk/hogg