HOGG

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

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FRONT COVER

The Geological Society Bicentennial Plaque

On 13th November 2007, the Geological Society was exactly 200 years old. To mark this event, an enamelled metal plaque was erected on the wall of the New Connaught Rooms in London, on the exact site of the old Freemasons' Tavern where the first committee meeting was held. The plaque was unveiled by the President, Dr Richard Fortey. The Society is the world's oldest geological society.

For a full account of the three day event, see inside this issue.

(Photograph: Anthony Brook)

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HOGG AGM

The HOGG Annual General Meeting for 2007 was held on 13th November 2007, during the 'Founding Fathers' meeting; approximately 30 people were present. The various reports and minutes were accepted, and the new committee duly elected (see below).The committee said goodbye to Chair Cherry Lewis, Vice Chair John Mather, & Committee members Tony Brook and Patrick Boylan. Member Cynthia Burek proposed a vote of thanks to Cherry Lewis for her hard work over the preceding 4 years.

HOGG COMMITTEE

The new HOGG Committee was elected at the AGM.

Chair: Alan Bowden

Vice Chair: Dick Moody

Secretary: Anne O'Connor

Treasurer: Beris Cox

Newsletter Editor: Peter Tandy

Other members (not pictured this time): Nic Bilham, David Earle, Nina Morgan, Hugh Torrens & Leucha Veneer

Diary of Future HOGG Events

The HOGG Committee has set an ambitious agenda of future meetings.

2008

6th – 7th May. ***Dinosaurs (and other extinct `saurians'). A historical perspective.*** Burlington House, London (details in this Newsletter).

18th - 19th October. ***William Smith and John Phillips***. Scarborough; Joint meeting with the Yorkshire Geological Society (details in next Newsletter).

November (date to be confirmed). ***'Stones of Desire'. A history of gemstones and gemmology*** (call for papers in this Newsletter).

2009 (provisional)

Spring. ***Field trip to Liverpool (combining history and local geology)***

Autumn. ***Literature & Geology***.

November. ***History of Military Hydrogeology*.** Burlington House, London.

Other topics for future meetings may include:
History of the Philosophy of Geology, History of Mineralogy, Collections Lost and Found, History of Igneous Petrology, Geology and Local Societies.

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

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200 years of the Geological Society of London

The bicentenary of the founding of the Geological Society of London was celebrated in a three-part event over the period of 12-14th November 2007, under the theme of the 'Founding Fathers'. A field trip on the Isle of Wight was followed by two days of talks interspersed with a dinner on the exact day and on the site of the tavern in which the Society was formed. Reports of these follow.

‘Walk with the Founding Fathers’

Beris Cox

The HOGG celebration of the Geological Society of London’s bicentenary kicked off with a field trip on the Isle of Wight. On Friday evening 9th November, leaders Martin Rudwick and Hugh Torrens, assisted by John Mather and Dick Moody of the HOGG Committee, met with the other 33 participants at the Wellington Hotel in Ventnor. The group included both geologists and historians from Australia, France, Germany, Italy, Norway, Russia and the United States, as well as Britain. After convivial aperitifs and evening meal, the leaders introduced their `time-travel` intentions – “to try as far as possible to study the topography of the island, and its rocks and fossils, through the eyes of the early nineteenth century geologists who first learnt how to make sense of its structure and geohistory” from a background of essentially no previous knowledge. In particular, the trip focussed on the work of Thomas Webster, the Geological Society’s first employee, and his wealthy patron Sir Henry Englefield.

On Saturday 10th November, two minibuses delivered us to the western end of the island. There, we walked up on to Tennyson Down in fine dry weather but with a strong and cold north-easterly headwind which slowed progress and spread out the party. From there, we viewed the Needles and considered the island’s structure in the light of letters from Webster to his patron which were transcribed in the field guide. The original plan to walk down to Alum Bay before lunch was deferred until the next day. After a welcome lunch had been taken at the surprisingly well appointed Needles Park restaurant, the minibuses transported the group to Compton Chine where strata adjacent to the Chalk, including beach exposures with huge fossil (dinosaur) footprints, were viewed, and the nineteenth century question of whether the strata lay above or below the Chalk was revisited. Before the return to Ventnor, the afternoon ended with a visit to Dinosaur Isle - the museum, opened in 2001, at Shanklin with displays explaining the island’s geology and its fossils, particularly those dinosaurs.

(Photo: C. Lewis)

On Sunday 11th, minibuses again delivered the party to the western end of the island where we descended to the shore of Alum Bay to view the vertically bedded, coloured sands abutting the Chalk. We viewed the karstified surface on the Chalk and determined, like Webster, that the sands lay above rather than below it. Like Webster, we also recognised, on the basis of contained fossils, marine and non-marine intervals; similar sequences were known to Webster in the Paris Basin through the works of Cuvier and Brongniart. Indeed, the similarity of the succession here in the Hampshire Basin to that described on the Continent was an extremely powerful influence on Webster. A particularly memorable interlude was when, like other people throughout Britain at 11am on Remembrance Sunday, the group stood on the

beach in silence for two minutes to remember the fallen, of all nationalities, of the two World Wars and subsequent conflicts. A final desperate scramble up the steep cliffs was not for the faint-hearted but was rewarded, on the way, by access to intervals with in situ marine and then non-marine molluscan, particularly gastropod, fossils. After recovering our breath at the top of the cliff, a footpath led us back to the Needles Park restaurant where lunch was again taken. After appropriate votes of thanks to the leaders, the party dispersed, most being taken to the ferry at Ryde for the journey back to the mainland and on to London.

As well as three of Webster's letters to Englefield, the field guide included reproductions of the 1810 Ordnance Survey map, the `Order of Strata` deduced by Webster during fieldwork on the Isle of Wight in 1811, 1812 and 1813, and two of Webster's stylish field drawings (which also featured in the booklet of abstracts for the *Talk with the Founding Fathers* conference starting in London the next day).

'Talk with the Founding Fathers'

Peter Tandy

The second part of the Founding Fathers event took place at Burlington House. Delegates gathered from many parts of the world to hear an array of talks from a distinguished group of speakers. The first day was divided into two parts, and following an opening address by the outgoing Chair of HOGG, Cherry Lewis, talks were devoted to the status of geology in 1807.

Prof. Gian Battista Vai of the University of Bologna started the day with a talk on the status of Italian geology in 1807. While the GSL might be the oldest such society, the actual term 'geology' was first written by an Italian, Ulisse Aldrovandi, as far back as 1603. But the term was not widely accepted for another 200 years, and the science was generally referred to as 'geognosy'. Indeed it was the founding of the GSL that propelled the use of the word geology. But the Italian community was still very active; between 1777 and 1837, over 200 Italian geologists were active particularly in the volcano and earthquake fields, and in the 100 years between 1759 and 1859, more than 40 classic papers were produced. But the Napoleonic Wars of 1789 to 1814 disrupted the Italian states and scientific progress. In addition, the language of science changed from Latin to French and then English, presenting another barrier to be overcome. By the early 1880s, the majority of foreign members of both the GSL and the Société Géologique de France were Italian. One of the most important of Italian geologists was Giambattista Brocchi (1772-1826) whose *Conchiologia Fossile* had a large effect, especially on the works of Charles Lyell.

Dr Irena G. Malakhova of the Russian Academy of Sciences followed with a talk on scientific institutions and geosciences in Russia at the beginning of the 19th century. At this time, there were three centres of importance, the Academy of Sciences in St Petersburg (founded 1724), Moscow University (1755), and the mining school of the Berg-Collegium in St Petersburg (1773). They were hampered by regulations on teaching but, in 1803-4, this changed. A new charter for the Academy allowed them to elect members for the first time, budgets were increased, and external censorship abolished. However, over the next 25 years only nine correspondents and one academician were elected, and it remained essentially a closed society. It did though disseminate scientific ideas via papers and translations. Vasily M. Severgin was

elected an Academician in 1793, and produced a pamphlet on micas (1798), a dictionary of mineralogy (1807), a description of Russian minerals (1808-9), a new system of mineral classification (1816), and a new study of Pliny's natural history (1819). A new mining school started at St Petersburg in 1773, and new Universities sprang up in Derpt (Talin) (1802), Vilno (Vilnius) (1803), Kazan (1804), Kiev (1805) and St Petersburg itself (1819). Lecturers came from Germany by invitation, and the St Petersburg Mineralogical Society was established in 1817. Konig, Owen, Murchison, Huxley, Miller, Darwin, Lyell and Davidson were all members and Murchison was an Academician, while Lorenz van Panser, Gotthelf Fischer and Christian Pinder of the Russian Society were members of the GSL between 1820 and 1847. Unfortunately this burgeoning was curtailed in 1824 when the Minister of Education (A. Shishkov) stated that "Sciences are useful only when, like salt, they are used and taught sparingly".

Prof. Philippe Taquet of the Muséum National d'Histoire Naturelle, Paris, gave an account of the beginnings of geology in France in the early 19th century. This period was marked in France by an intellectual awakening that allowed Earth sciences to flourish. The work of Georges Cuvier from 1795 in applying lessons of anatomy to bones of then unknown quadrupeds, is well known. By this work, he became the first of a new 'species' – a geohistorian. In 1800, Paul-Marie Poiret studied lignites from the Paris Basin which were important in the production of sulphuric acid and, in 1808, Cuvier and the great Alexandre Brongniart produced a seminal work on mineralogy of the environs of Paris. Cuvier pointed out that it was now necessary to combine the observations and writing of a travelling naturalist, who sees successively a great number of objects, with those of a sedentary naturalist who can compare objects with each other. Most of the early work was mineralogical, but fossils were integrated following the establishment of institutions like the Natural History Museum, and the School of Mines, along with ambitious scientific programmes and determined political power. The limestone and gypsum industries of Paris supplied a constant stream of fossils, and young talented naturalists backed by competent technical and administrative staff led to spectacular results.

Prof. Martin Rudwick was next up, to speak about the early Geological Society in an international context. In 1805, Bonaparte crowned himself Emperor of Europe, and waged war against England. It was a bloody conflict – similar to WW1 in all but name. The war constrained those studying natural sciences, but did not stop them. In 1807, 11 people met and started the Geological Society. One of them was Jacques Louis, Comte de Bournon, a French aristocrat who was living in exile in London, having escaped the French Revolution. This was not the first 'natural' Geological Society, but the first example of a learned society dedicated to Earth sciences. At the time, it was salaried professionals, not amateurs, who dominated the science, although 'amateurs' (they often were not) formed a backing along with miners and quarrymen.

Dr Julie Newell, of Southern Polytechnic State University, USA looked at the state of geology in the USA in 1807. At that time, not much was happening geologically in the US. Society simply wasn't ready for it. There had been some earlier work – from 1785, observations by authors had started appearing and, in 1793, Benjamin Franklin published his '*Conjectures Concerning the Theory of the Earth*'. Between 1785 and 1807, 62 'geological' articles had appeared. One of the first to attempt field work was Samuel Latham Mitchell (1764-1831) who, though a doctor of medicine, had spent

some time in Scotland, where he may have met James Hutton, and been excited by geology. But the US was newly emerging from internal conflict, and it took time for things to settle to the extent that studying science in this way was acceptable. There were few people with sufficient resources to provide patronage, and there were few institutions available for teaching. But things were changing. William McClure moved to the US in 1796 and concentrated on natural history, especially geology. He provided patronage for others, and travelled widely, visiting France and Spain in 1807-8. In 1809, he wrote an important paper on geological mapping. Meanwhile, Benjamin Silliman, generally referred to as the 'Father of American Geology' was studying chemistry and mineralogy at Yale, but at that time, no geology. Nonetheless, Silliman would emerge as one of the greats of the period. Another was David Dale Owen, born in Scotland in 1771. His father wanted him to enter the cloth industry, but he studied chemistry in London and the US. In 1828, he moved to New Harmony, Indiana, and stayed there for the rest of his life. By 1837, New Harmony had emerged as an important geological centre, and Owen became state geologist. Within a year, he was supervising 140 people and surveying 11,000 square miles. New Harmony eventually became the site of the USGS which remained there until 1856.

Prof. David Branagan of the University of Sydney, Australia, had flown in to talk about an Antipodean connection to the GSL. In 1807, the Australian continent was largely unknown, at least so far as its geology was concerned. A few of the early members had made visits, others had studied rocks brought back and the Society's publications were an important source of information. One of the members was the Rev. W. B. Clarke, who is sometimes known (possibly unjustly) as the 'father of Australian geology'. He arrived in Australia in 1839 and stayed there until his death in 1878. In that time, he made significant contributions to both Australian and world geology, contributing 15 papers and keeping contact with both Roderick Murchison and Adam Sedgwick, although he was later to annoy Murchison with his claims to have discovered gold in Australia. Another clergyman, Archdeacon T. Hobbs Scott spent two years in New South Wales and western Australia, and made an important collection of rocks. In 1831, Thomas Mitchell, a surveyor-explorer described caves in New South Wales and the vertebrates they contained, and the collections of rocks from coastal surveys made by Philip Parker King, were later donated to the Society. Recognition for Australian contributions came in 1876 when the Murchison Medal was awarded to A. R. Selwyn, a former Director of the Geological Survey of Victoria, and again in 1877, to W. B. Clarke, and 1879 to the palaeontologist Frederick M'Coy. In 1899, T..W. Edgworth David was awarded the Bigsby Medal and in 1915, the Wollaston Medal for work on Late Palaeozoic glaciation. New Zealanders Julius von Haast and James Hector also made contributions (to Pleistocene glaciation), and Patrick Marshall recognised the 'andesite line' and the nature of ignimbrites. The contributions of Antipodean geologists has indeed been significant.

The second session of the first day was devoted to the founders of the Society. **Dr Martina Kölbl-Ebert** of the Jura-Museum, Eichstätt, Germany, took a look at George Bellas Greenough (1778-1855) who was the first President of the Geological Society and one of its co-founders. Initially, he studied law at Göttingen, where he was introduced to the work of J.F.Blumenbach and Jean-André de Luc. Both strongly influenced his learning and his geological ideas. As the Society's President, it was his duty to give an annual assessment of scientific results and to dissect other people's arguments. He was not primarily a researcher in his own right, but made it his role to

gather information in a very diligent manner and act as an impartial reviewer – at least in his understanding – of the fellows' research. Greenough became embroiled with trying to devise a way of developing a proper scientific method for geology, based on firm principles and definitions. In 1819, he published a book "*A critical examination of the first principles of geology in a series of essays*". But alas, the nature of the science didn't fit with his mathematical desires.

Prof. David Knight of Durham University looked at the state of chemistry in 1807. At that time, it was an exciting science – many stinks and bangs! There was a revolution afoot and theory was being avoided. Chemistry was accessible to more people than say astronomy, where maths was also essential. Chemistry had at last left behind the 'earth, air, fire, water' system, largely as a result of people like Joseph Priestley and Antoine Lavoisier. Chemistry became very popular – people flocked to lectures, bought books and joined societies. It is no surprise then that among the founding fathers of the GSL there were chemists – in particular Arthur Aikin, Richard Knight, William Hasledine Pepys and Humphrey Davy. Pepys, a member of the Cutlers Company, was one of the founders of the Royal Institution which, unlike the Royal Society, had a lecture room and laboratory. For the London Institution, he designed the laboratory which was equipped by Knight. Pepys was interested in the platinum process and made a fruit knife of the rare metal for Joseph Banks. Aikin, from a dissenting medical family, was intended to join the Unitarian ministry, but lost his faith and found solace in mineralogy and chemistry. He was one of the founder members of the Chemical Society in 1837. Knight started in the family ironmongers business, but changed it to one supplying medical instruments. He too was interested in the platinum process – but saw no money in it! Probably the most famous name is that of Humphrey Davy, inventor (later) of the eponymous safety lamp. A poor Cornishman, he became a brilliant lecturer who by 1807 had transformed the Royal Institution into an international research laboratory. In 1800, he investigated nitrous oxide ('laughing gas') and received Priestley's congratulations. In 1803, he was elected a Fellow of the Royal Society; by 1807, he was its Secretary and between 1820 and 1827, its President. In the meantime, he was knighted in 1812, and made a baronet in 1818. He was involved with the isolation and naming of iodine, and investigated potassium, which he had also isolated, as he thought it might be influential in volcanic eruptions.

Dr Cherry Lewis of the University of Bristol looked at another professional group amongst the founding fathers, the medical men: William Babington, James Laird, James Franck and James Parkinson. Babington was born in Co. Antrim and after an apprenticeship to a local practitioner, moved to Guy's Hospital London as a dresser (of wounds) to James Franck, the resident surgeon. By 1795, he had been elected as the physician to Guy's and in 1805, was elected an FRS. Two years later he was said to be "in possession of a large and lucrative city business". After a spell at a naval hospital in Gosport, he returned to Guy's as its apothecary – where he stayed for 13 years. He then had a spell in Aberdeen where he took a medical degree. When Franck moved on to an army position, Babington was able to take over. He had an interest in mineralogy and geology, and it was at a meeting at his house that the idea of forming a geological society took hold. Babington was self-taught in minerals but would have learned some as part of his medical studies. He purchased the collection of the Earl of Bute and published a new system of mineralogy in 1799. James Laird was a Jamaican by birth, and arrived c.1801 to take up a post as a pupil physician at Guy's. With a

new degree in medicine, he gave medical care to outpatients before getting a full hospital job and replacing Babington. With the formation of the new geological society in 1807, Laird became its first secretary, and gave it its motto. James Parkinson became a surgeon in 1784, and was first apprenticed to his father. After 4-5 years of learning how to do bleeding, dress wounds and blisters, and give enemas, he had a spell at the London Hospital, Whitechapel. He is best remembered today for giving his name to a 'shaking palsy'. He became interested in fossils but could find no books about them except on the continent, and decided there was a need in London.

Prof. Hugh Torrens of Keele University looked at another group among the founding fathers, the Quakers: William Allen, and the Cornish brothers Richard and William Phillips. The Quakers, as a movement, were shunned by society, being barred from English universities (by law) and rejecting army and clerical service (by conscience). By 1807, there were fewer than 20,000 in Britain, and they formed close-knit societies, and helped each other in trades, especially banking. William Allen was born in 1770 and was a manufacturing chemist by trade, establishing a pharmacy in London, and attending lectures in chemistry. In the 1790s, he became a close friend of William Babington and in 1796, along with William Phillips and others, founded the Askesian Society to promote British science. It was the forerunner of the British Mineralogical Society. The plan was to make a mineral survey of Britain, so that resources would be better understood and used. William Phillips started as a printer in 1797, and became the Society's printer in 1810, publishing its first 5 volumes of Transactions, even though he personally lost £4,500 on it. Richard Phillips was a chemist who later derived the cancellation method for penny postage stamps to prevent fraudulent re-use.

The guest speaker in this session was **Prof. Gordon Herries Davies** of Trinity College, Dublin, who gave a superb monologue about writing the Society's History. It is difficult, he said, to understand events of 1807, or any former age, without being part of that age. At the 2nd meeting of the new society, at the Freemason's Tavern, 42 'honorary' members were elected, and it is easy to assume that it was an attempt to 'honour' distinguished geologists. But not at all. It simply indicated that they were county members who paid no subscriptions. There was conflict between Sir Joseph Banks, Humphrey Davy and fellows of the Royal Society over the establishment of the Geological Society. We may see it as some kind of inter-science dispute, but the real question was over the Royal Society's oath, the principles of which had to be honoured at all times. By joining the Geological Society, they were breaking the oath – something which we would think little of today. Davy and Banks, as old stagers, were concerned, and the oath did matter. Gordon explained that he came to write the Society's history after being asked in 1992 to write a history of the Geological Survey of Ireland. This august body was facing Government abolition, and Gordon's work was intended as a political gesture to show the Government that it was worthy of saving. It was only intended to be read within Government circles, but it sold widely and was much liked. The history of the GSL had already been started by the late Wally Pitcher, but by 1996-7 he was feeling it was beyond him, and the GSL started to look for a new author. Thus in 1997, Gordon was approached by the President of the GSL and asked to write a new history. It should be as the GSI book had been, easy to read and popular, and should be done in fewer than 100,000 words. Sadly, the project was knocked back almost immediately when the Society's Archivist, John Thackray succumbed to the evils of cancer and died in 1999. But Gordon persisted,

starting by writing Chapter 6, then chapters 5 & 7, before chapters 1, 2 & 3, although there was no real reason for this. Gordon was lucky in firstly being able to speak to the oldest member of the Society, who had joined in 1940 and remained a member until 1962, and secondly, with Wendy Cawthorne of the GSL plus a copy of Decimus Burton's plans of Somerset House, to identify (and even to stand in) the original GSL apartments there, prior to the move the Burlington House. The book was eventually published and launched in the Mountbatten Room at the QEII Hall where Gordon signed copies. It remains to this day an excellent work and wonderful value, and should be on the shelf of every person interested in the world's oldest geological society.

Conference speakers (Photo: C. Lewis)

The second day was opened by **Leucha Veneer** of University of Leeds. Seven of the 13 founders of the Geological Society had been members of the British Mineralogical Society, whose aim had been to provide information to support British mining, and also to provide a lexicon of mining terms, which differed between the various districts. For the committee of eight which considered paper submission, five were ex-BMS members, and four other committees all had some BMS members. Records of the early days of the GSL all show the strong influence of mining with maps, specimens and even mining equipment being brought in for meetings. The direction was very much towards the practical side. This continued into the early 1800s but by 1821, the first 10 years of the *Transactions* saw a decline in mineralogical papers from 45% to 10%, while stratigraphical papers rose from 5% to 10%. There was nothing dedicated to palaeontology in 1811, and it had only reached about 20% by volumes 4 & 5. The practical nature however, continued in provincial societies and was renewed with the formation of the Geological Survey in the 1830s.

Dr Ted Rose of Royal Holloway College, London, spoke about the early fellows and the dawn of military geology in Europe. In 1807, England was involved in a 20-year war, which since it stretched from Portugal to Russia (and affected even the Far East and the US) was effectively a world war. It was a war of unprecedented ferocity with

France alone raising an army of >1m men. For the first time, geologists were employed in a military capacity, when Napoleon Bonaparte took them to Alexandria and Malta (1798). Among them was Déodat de Dolomieu (1750-1801), who had a military background but was an aristocrat, Louis Cordier (1777-1861), a student at the School of Mines, and François-Michel de Rozière (1775-1842), also a student at the School of Mines and later a professor of Mineralogy/Geology at St Etienne. Across the Channel, the threat of an invasion made G.B.Greenough, T.F.Colby, J.W.Pringle and R.I.Murchison join the ranks; all would later become fellows of the GSL, Greenough serving for 16 years and only resigning from the Light Horse Volunteers after the Peterloo massacre of 1819. Many others had a military rather than university training, and geology was frequently taught to aspiring officers. While geologists in England, France and Germany served in the ranks, there was no perception of the possible strategic uses of geology in a battle or conflict until 1820. In that year, Johann Samuel Gruner (or von Grouner), a mining geologist and war veteran, wrote a memorandum stating its uses. This arguably qualifies him as the first 'military geologist'.

Prof. Patrick Boylan of the City University, London, spoke about the 1825 Royal Charter and the provision of official accommodation by the Government from 1828. The establishment of the Geological Society in 1807, and its continued growth thereafter, led to a state of conflict with bodies such as the Royal Society, including the resignation of Sir Joseph Banks in 1809. By 1824, when William Buckland was President, the GS still had no legal status and was simply an unincorporated private members' club. Buckland wanted to see geology get the same official recognition as it did on the continent (particularly France), and a proper charter was called for. In general, the arts and science in Britain were badly supported. Handel could get rich in Rome under patronage and with touring commissions, but in Britain there was no support for music (and no state support until 1945!!!). Museums had started in London in 1753 with the death of Sir Hans Sloane, but the collection was bought for the nation by public lottery. The GS Council met along with 30-40 members, and they agreed to seek a Royal Charter. A leading lawyer gave his services for free, and to offset any potential confrontation with the Royal Society, spoke to Robert Peel, the Home Secretary, as well as Humphrey Davy, then president of the Royal Society. A charter was quickly granted by King George IV in April 1825, and it broke new ground. The Society then needed adequate accommodation as its museum and library was growing rapidly. After an expensive stay in Bedford Square, it moved in 1828 to rent-free rooms supplied by the Treasury at Somerset House. Forty years later the Government bought Burlington House, and the GSL moved again. It still remains there, despite more recent attempts to have it evicted.

Prof. Simon Knell of the University of Leicester, spoke about the Society in a nation of societies. In the 1820s, having a membership was about getting people to be subservient and to do things for you. Societies were engaged in creating an image, and people joined so that they too had an image. Some looked at immortality; Sir Humphrey Davy said he "was doing something heroic". But while the GS operated and became the senior society, it was not alone as a geological society, though it was the only one to use the term 'geological'. The others called themselves 'philosophical societies' though they were geological in nature. The Yorkshire Philosophical Society was started in 1822 at the suggestion of William Buckland, and built on the Kirkdale Cave excavations. In Bristol, William Conybeare began a similar institution, while in

York there was debate about whether it should be a county museum or a local one – they went for a county one. This was also in 1822, and was followed by others in Wakefield, Halifax, Scarborough, Doncaster and Bradford. In Scarborough, the museum was built in 1829 along the style advocated by William Smith with the strata laid out. It became the most important geological building in the country, even in the world! Other philosophical societies were adopting a 'Smythian' way of displaying material and Smith became more dominant as time went on and influenced many others. The GSL had to adapt or die. Perceptions of individual members changed dramatically from 1807-1817 and from 1817-1827. The Geologists' Association was formed in 1858, as Philosophical Societies became elitist. By the 1830s, there were 'Natural History Societies' and better transport in the 1840s and 50s allowed people to get out to more places and conduct fieldwork.

Dr Ralph O'Connor of the University of Aberdeen spoke about the need for an audience between 1807 and 1837. The GSL tried to define geology as something about collecting facts, but collecting facts in 19th century England was risky as there was still the threat of invasion from the continent. Those who started the GSL wanted to extract geology from grand theories, theological controversies and flights of fancy; geology had no place for speculation they said. But that fails to explain why so many middle-class citizens, flocked to learn about it, as it was precisely romantic, speculative and poetic theories which people wanted. Joining the GSL cost nine guineas in the first year. This compares with the general earnings of a tradesman of £25 p.a, or a lawyer's clerk of about £30, and a curate of £50 (top clergy were earning about £1000 p.a.). To subscribe to Parkinson's '*Organic Remains*' cost eight guineas – about 16 week's wages, and even Buckland's *Bridgwater Treatise* was £1-3-0. There were some circulating libraries, but even at minimum cost of 1/- (one shilling), it was 2 weeks' wages (and a loaf of bread cost 10d per quartern (=2kg)). Geology was certainly exclusive, at least as far as the working person was concerned. Davy's lectures inspired the wealthy to go on the Grand Tour, and Parkinson's work was written for these same wealthy people. But slowly it changed. Buckland's lectures bought science to life – he would impersonate extinct creatures. By the 1820s, new creatures – the saurians – opened up a new vista where Parkinson had left off. Lyell's writings in the *Quarterly Review* presented palaeontology as a realisation of the fabulous monsters of romance.

Dr Noah Herringman of the University of Missouri-Columbia, USA, spoke on Sir Henry Englefield, and geological antiquity. Between 1799 and 1801, Sir Henry Englefield made a number of journeys to the Isle of Wight, making notes and sketches. When he wanted to turn them into a folio volume, he looked for a competent engraver and artist, and found Thomas Webster. He was the GSL's first salaried officer, though a draftsman by trade. Webster had already received commissions from Humphrey Davy and the GSL, and this led to Webster doing influential work on the geology of the island. Englefield was a long-time President of the Society of Antiquities and a Fellow of the Royal Society, and a man with wide interests. Webster also had wide interests and as an architect and topographical draftsman, was appreciated by Englefield, who was engaged in engravings of English cathedrals. Webster's first essay appeared in 1814 in the *Transactions of the Geological Society*, and was expanded for Englefield's book two years later. This relationship between geology and antiquity persisted whilst the science became more professional. Webster

re-invented himself as a professional geologist, and ended his career at University College, London.

Prof. Cynthia Burek of the University of Chester, looked at the first female Fellows and the status of women in the GSL. The rights of women, to even take up a role in the organisation, had been a long haul. Back in 1792, Mary Wolstonecraft had written a '*Vindication of the Rights of Women*' and between then and 1975, there would be a number of Acts – Reform Acts (1832, 1867), Divorce Act (1857), Married Women's Property Acts (1870, 1878, 1882), Votes for Women over 30 (1918), Universal Suffrage (1928) and the Sex Discrimination Act (1975), each of which had advanced their cause somewhat. Women were generally not admitted to the GSL before 1919, though some were allowed to submit papers (though not to read them), and others received rewards in the form of grants or medals. Among these were Mary Anning and Etheldred Bennett. Between Nov.1860 and Jan.1863, Fellows could bring wives, daughters or lady friends to ordinary meetings, and in 1889, there was an attempt to revise the bye-laws to allow women to take part. The minutes state that "ladies were excluded by only 3 or 4 votes", but in fact it was 4 out of 62!! The opposition to any change was clearly great. By 1904, ladies were allowed as visitors in their own right, and four years later, another amendment to give them associate status was defeated. Finally, on 26th March 1919, women were admitted as Fellows (the voting was still 55 to 12 in favour). This at least was one up on the Royal Society which by 1902 still barred married women, and which didn't change until 1943 with the admission of Kathleen Lonsdale. By contract, the GA had allowed women from its inception in 1858. In the universities, University College London opened its doors in 1875, but between 1904 and 1907, women who had obtained a degree had to travel to Dublin, via Holyhead to receive it! In all, by 1920, there were 14 female Fellows of the GSL, and from that time onwards a steady and growing trickle.

Drs Renee Clary (Mississippi State University) **& James Wandersee** (Louisiana State University) looked at Henry De la Beche (1796-1855) and the origins of geological literacy. De la Beche was a man of influence from the start. A member of the Geological Society in 1817, he was made an FRS in 1819 and knighted in 1848 for services to his country. He became President of the GSL between 1848 and 1849. He was the first full-time British geologist not associated with a university. He had an income from Jamaican plantations, but when this ended, he secured Government money for mapping projects. From this sprang the Geological Ordnance Survey (1835) with him as director. But his vision was to make geology available to all classes of society. His early texts were aimed at his contemporaries but from 1830, his works reflected his changing audiences. As Director of the Geological Survey, he was the first Government employed geologist in England. He assured consistency in mapping by issuing explicit instructions to local directors and acknowledged that "science should serve the people". He was largely responsible for establishing the Museum of Economic Geology in Charing Cross Road (1841) (later to move to Jermyn Street in 1851, and become the Museum of Practical Geology), the School of Mines, and Mining Records Office. Each involved educational components. De la Beche was truly an early champion of geological education.

Dr John Smallwood of Amerada Hess Ltd, London, took another look at the first geophysical map and the work of John Playfair. John Playfair, an Edinburgh professor of mathematics, was the man who popularised the works of James Hutton. He also

played a leading role in attempts to measure the density of the Earth and generalise Newton's Law of Gravitation, at Schiehallion in the Scottish Highlands. This experiment had been conducted by Nevil Maskelyne in 1774, by trying to measure the deflection of a plumbline. A figure of 4.5 was obtained, but Hutton later saw that the accuracy could be improved if the sub-surface geology was better understood. Playfair undertook a lithological survey in 1801, giving a much better geological map from which the mean density of the mountain could be estimated. The density was accordingly increased to between 4.56 and 4.87, and Playfair was recommended for a Royal Society Fellowship by Maskelyne. His resultant map of the Schiehallion area is the first geophysical map, and has been vindicated by John Smallwood with a recent re-survey using modern instrumentation.

Dr Chris Cleal of the National Museum of Wales looked at palaeobotanical contributions of Edmund Tyrell Artis (1789-1847). Artis was born in Suffolk, and became a confectioner in London. His confectionery came to the attention of Earl Fitzwilliam, and he invited Artis to work for him, as a geologist, firstly in Northamptonshire, then at Wentworth Hall, near Barnsley, Yorkshire where he was to look for coal seams. In the course of this work, he amassed a fine collection of fossil plants. In 1825, a year after his election to the GSL, he published a book, '*Antediluvian Phytologia*', the first account of Carboniferous plant fossils in Britain. His intention was to bring the importance of plant fossils to people and especially the GSL. He failed miserably as the book was almost completely ignored! The book was heavily criticised by Brongniart in particular on the basis of its lack of illustrations but in fact, the illustrations are of the highest quality. Artis had earlier criticised Brongniart for assigning Carboniferous fossils to living taxa. The book was a landmark publication in British palaeobotanical studies. Artis left geology to run the clubhouse at Doncaster race course, and sold his collection in 1829.

Dr Iain Stewart of Plymouth University, the guest speaker for the second session, brought the meeting to its finale and also up to date with a look at Earth as it is and in the future. Iain Stewart is known to many as the presenter of a number of TV programmes dedicated to geology, and here introduced a short video of clips from his latest 5-part series looking at wonders of the Earth, due to be broadcast over the new year period.

'Dine with the Founding Fathers'

Peter Tandy

Following the first day's talks, about 150 delegates gathered for a meal at the New Connaught Rooms in London, which now occupies the site of the original Freemasons' Tavern, where the Society was started. The event was on the exact day, 200 years after the founding fathers had gathered, and to mark the occasion, a specially commissioned plaque was erected on the outside of the building. Given that the 'year' was 1807, many delegates opted to dress for the period, and elegant dresses mingled with army and naval officers, hussars, and even a Sir Humphrey Davy look-alike, at a pre-meal soiree.

Richard Fortey (Photo: P. Tandy)

Cherry Lewis (Photo: P. Tandy)

Cynthia Burek, John Mather and Jenny Bennett (Photo: P. Tandy)

Nic Bilham (Photo: P.Tandy)

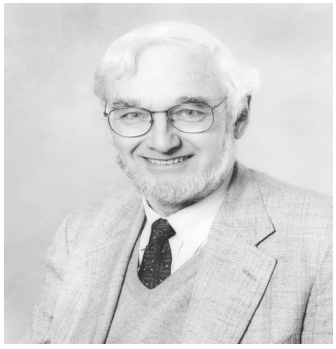
Alan Bowden (Photo: P.Tandy)

Martin Rudwick receives the Sarton Medal

History of Science Society 2007 Prize Winner

James Secord

The Sarton Medal is the highest award of the History of Science Society, given annually in recognition of a lifetime of scholarly achievement. It is a personal pleasure and a great honour to introduce Martin Rudwick as the Sarton medalist for 2007.



Martin Rudwick achieved pre-eminence in history of science after a distinguished early career in palaeontology. Educated at Trinity College Cambridge, he graduated with first class honours in the Natural Sciences Tripos and wrote his dissertation on brachiopods, a group now nearly extinct but of vital importance in the fossil record. An interest in reconstructing the functional evolution of these unusual organisms led to a fascination with the history and philosophy of science, and he eventually moved to that department in Cambridge, the first of a series of distinguished posts held in the United Kingdom, the Netherlands, Israel, France, and the United States. In 1998, he returned to England, having retired from the University of California at San Diego as professor emeritus of history, and he is affiliated once again with the Department of History and Philosophy of Science at Cambridge. There can be no question that Martin has been the most influential historian of the Earth sciences in the past fifty years. He has received the History of Geology award of the Geological Society of America (1987), the Friedman Medal of the Geological Society of London (1988), and the Founder's Medal of the Society for the History of Natural History (1988).

Like many readers, I first encountered Martin's work through *The Meaning of Fossils* (Macdonald and American Elsevier, 1972), which was based on his celebrated undergraduate lectures at Cambridge. This beautifully written book, which explores the period from the Renaissance to the end of the nineteenth century, set a fresh agenda for a whole generation of historians of science, showing how scientific knowledge could be understood in terms of wider philosophies of nature and changing canons of practice. As John Herschel said of Charles Lyell's *Principles of Geology,* it is 'one of those productions which work a complete revolution in their subject by altering entirely the point of view in which it must henceforward be contemplated'. It certainly transformed my own historical understanding.

In this and many subsequent works, Martin has led the way in demonstrating that classification, order, and display cannot be dismissed as trivial aspects of the making of knowledge, but are important ways of understanding the natural world. His articles (recently collected by Ashgate in two volumes) on Charles Lyell, Charles Darwin, Georges Cuvier and other key figures have been staples of student reading lists, combining analytical insight with readable style. He has been one of the pioneers in promoting study of the visual aspects of science, notably through his widely-read essay of 1976 in *History of Science*, and *Scenes from Deep Time* (University of Chicago Press, 1992), which introduced readers to a remarkable array of nineteenth-century depictions of ancient life. He has creatively employed visual modes of exposition throughout his work, using analytical diagrams to sum up complex controversies and forms of social relations.

This interest in visual modes of exposition is characteristic of a broader effort to find new tools for understanding past forms of life. Martin has encouraged historians to engage with the sociology and anthropology of science, and has applied this in innovative ways within his own writings. In 1999, the Society for Social Studies of Science awarded him the Bernal Prize. His best known book, *The Great Devonian Controversy* (University of Chicago Press, 1985), is a classic of our field, demonstrating that a nuanced account of the past can shed light on the general processes of science. As the late Stephen Jay Gould said, 'After a superficial first glance, most readers of good will and broad knowledge might dismiss [this book] as being too much about too little. They would be making one of the biggest mistakes in their intellectual lives.

In an era when scholarly research is too often constrained by national and linguistic boundaries, Martin has been ecumenical in his approach. He has taught in three countries and publishes regularly in French as well as English. Through his encouragement of scholars in different countries, he has been instrumental in developing a cosmopolitan perspective among geologists and historians.

Martin's latest 840 page book, *Bursting the Limits of Time* (University of Chicago Press, 2005) is a major European-wide study of the leading practitioners of natural history in the decades around 1800. Its equally imposing sequel, *Worlds before Adam*, is scheduled for publication in the spring of 2008. These magnificent volumes grew out the 1996 Tarner Lectures, and are notable for their sensitive exploration of figures who had been dismissed in histories of secular progress as religious obscurantists. Together, they make a compelling case that the development of a historical vision of the Earth is as significant a transformation in human thought as those associated with relativity physics or Darwinian evolution.

Martin Rudwick has shaped the way we see some of the most widely discussed episodes in history of science, and has consistently set standards for analytical rigour, innovation, and depth of research. His writings have been at the forefront of our field for nearly four decades, and are models of appropriate use of visual arguments and engaging prose. It is in recognition of his remarkable achievement that the History of Science Society has named him as the 2007 Sarton Medalist.

John Hawkins and a Publishing Enigma

Anthony Brook

In Science priority provides the precedence of discovery, thus the date of initial publication is fundamental to fame and fortune, but what happens when there is considerable confusion about the time of publication, confusion which history is unlikely to resolve? There is a nice example of this problem in the early history of geology in Sussex. It concerns John Hawkins (1761–1841), a well–travelled and geologically–minded Cornishman who purchased the 1100 – acre Bignor Park estate, near Petworth in West Sussex, in 1806, settled into the life of the landed gentry and began to write up his Hellenic travels and Cornish mining researches (1).

John Hawkins, of Bignor Park, wrote an essay entitled 'Observations of the Geological Phenomena of the Western Division of Sussex' which forms one of the 40 chapters which comprise the first Section, Preliminary Observation/History, of Volume 1 of the 2–volume work A History of the Western Division of the County of Sussex, including the Rapes of Chichester, Arundel and Bramber, with the City and Diocese of Chichester, by James Dallaway. This weighty tome was printed by T. Bensley, of Bolt Court, Fleet Street, London, and published in 1815, as it clearly and prominently declares at the foot of the title-page. That would seem absolute and definitive, but there are major problems in accepting that year of publication.

JOHN HAWKINS, 1761–1841
From the portrait by Richard Cosway at Trevithen

A

HISTORY

OF THE

WESTERN DIVISION

OF THE

COUNTY OF SUSSEX.

INCLUDING THE RAPES OF

CHICHESTER, ARUNDEL, AND BRAMBER,

WITH THE

CITY AND DIOCESE

OF

CHICHESTER.

BY

JAMES DALLAWAY, B.M. F.A.S.

PREBENDARY OF HOVA ECCLESIA, AND RECTOR OF SLYNFOLD.

IN TWO VOLUMES.
VOL. I.

LONDON:

PRINTED BY T. BENSLEY, BOLT-COURT, FLEET-STREET.

1815.

The first fundamental flaw is that John Hawkins and Gideon Mantell, who supplied the Appendix, were not acquainted until the summer of 1816. A letter dated 3 August

1816 from John Hawkins to Samuel Lysons, the antiquarian concerned with unearthing the Roman Villa accidentally discovered on Hawkins's land in 1811, contains the following paragraph (2): 'You will be glad to hear that I have met with a person in this County engaged in similar pursuits who has promised to assist me in ascertaining the names of these fossil bodies or in imposing new denominations. He is the author of a paper lately printed in the Geological [Society's] Transactions, a Mr Mantell [sic], a young surgeon settled at Lewes, who has entered upon the pursuit with great zeal and in a truly scientific way. He has formed a very noble collection of everything in his neighbourhood. He showed me a work on fossils by Sowerby now coming out in numbers [Mineral Conchology]. You will therefore perceive that I shall have no further occasion to trouble you on this subject'. This strongly implies that his Geological Memoir was still in the process of formulation, with Hawkins relying heavily and henceforth on Mantell's expertise in fossil identification and taxonomy.

In a letter to John Hawkins of 28 April 1817, Gideon Mantell wrote (3): 'We have the first vol. of [Dallaway's] Western Sussex: and I regretted its deficiency in the geological department–: it is therefore most gratifying to me to learn your intention of writing a memoir for the 2nd vol. – if it is in my power to throw any light on the nature of the organic remains, you will oblige me with your commands'. He continues: 'May I ask if you have any fossils from the ferruginous sand of Western Sussex; and if so, to what genera are they referable? If you have not, I shall be happy to send Mr Dallaway a catalogue of those in my possession (with sketches of the most remarkable ones) by way of appendix to your Memoir'. So, no geology in Vol. 1: Hawkins preparing a Memoir for Vol. 2.

A little over 2 years later, on 19 June 1819, John Hawkins wrote to Gideon Mantell from his London address, enclosing a copy of his Memoir (4): 'I herewith send you the account of the Geological Phenomena of our part of Sussex which I drew up for Mr Dallaway's Work, and in which my obligations to you are properly acknowledged . . . . . The whole account must be regarded as a sketch and not an elaborate survey, which would have been misplaced in such a work'. At the end of this short letter he adds a postscript: 'As Mr Dallaway's book is not yet out, it would be proper not to suffer any public use to be made of what I send you'. Three days later, on 22 June, Mantell penned a hastily-written note, acknowledging, with much appreciation, the safe arrival of 'your kind present', and responded that 'the sketch of the Geological Phenomena of your division of the county is particularly interesting and instructive to me, and I feel highly indebted for your flattering, but unmerited, mention of my name at the conclusion of your memoir. Mrs Mantell is quite delighted with your elegant present: as a small return she begs you will do her the honour to accept these impressions from engravings she has executed for our intended work' (5). As further confirmation, Mantell wrote in his Journal for Wednesday 23 June 1819 that (6): 'Today I acknowledged receipt of a parcel from Mr Hawkins, who sent me a copy of his Geological Memoir, which is published in the second volume of [Dallaway's] History of [Western] Sussex; he also presented Mrs Mantell with Dr Turton's Dictionary of Conchology'.

There is another matter persuading us in the direction of 1819 rather than 1815. At the end of his Memoir, Hawkins provided a tabulation of the Organic Remains commonly found in the various strata of Western Sussex, and was 'indebted to Mr Mantell of Lewes, for the determination of most of these generic and specific distinctions'. Quite

properly, Mantell provided accurate references to contemporary credentials, most of which were published after 1815! For instance, 'Terebratula octoplicata' and 'Ammonites, Varians', found in the chalk strata, were referenced to Min. Conch. T118 and T176 respectively, which is an abbreviation for Plates 118 and 176 in Parts 19–35 of The Mineral Conchology of Great Britain, by James Sowerby. Published as fascicles between October 1815 and June 1818, taken together these Parts constituted Vol. 2 of this majestic work of reference, that continued, as Parts comprising Volumes, until 1843.

The situation was sorely aggravated by the disastrous fire at Bensleys, the printers, in late June 1819, which consumed most of the newly-printed stock of Dallaway's Western Sussex, Vol. 2, Part 1, and also much of the remaining stock of Vol. 1. As Mantell noted in his Journal for 14 July 1819 (7): 'The second volume of [Dallaway's] History of [Western] Sussex is wholly destroyed by a fire which consumed the office where it was printing'. In fact, it was not quite that bad: 60 out of the print-run of 500 were out of the building at the time and survived the blaze. They were requisitioned by the Patron, the Duke of Norfolk, who presented 30 to members of his family, immediate and distant, and the other 30 to other eminent families of Sussex. On 6 December 1820 Gideon Mantell wrote to John Hawkins (8): 'I very much regret the non-appearance of the second Vol. of [Dallaway's] Western Sussex will deprive me of the pleasure of referring to your Memoir: until the publication of your work, you would, of course, object to any allusion being made to it'. Although now officially 'published', in a limited edition of only 60 copies, it immediately became a great rarity and extremely valuable. None were ever offered for sale to the public, but Mantell must have had access to one – perhaps Hawkins received a copy from the Duke of Norfolk, as a prominent landowner and magistrate of West Sussex – because there are two specific references to Hawkins' Memoir in Mantell's Fossil of the South Downs, published in May 1822. Hawkins was a Subscriber and ordered 3 copies. On page 80 Mantell believes that the Blue Chalk Marl is synonymous with the Malm Rock of Western Sussex and quotes Hawkins' Memoir, History of [Western] Sussex, Vol. 2, p. 114; and later, on page 268, he writes that: 'Below the beach at Bracklesham, in the parish of East Wittering, the [blue London] clay envelopes, the trunks, roots and branches of the trees', referenced to the following footnote: 'I am favoured with this account by my excellent friend, John Hawkins, of Bignor Park. Vide his 'Observations on the Geological Phenomena of the Western Division of Sussex' in Dallaway's History of that Division of the County, Vol. 2'.

Problem solved. Without any doubt Hawkins' Geological Memoir was 'published' (if that is the right word) in Vol. 2, Part 1, in July 1819 in the 60 copies that avoided the fire at the printers. Mantell was sent a pre-publication copy of the Memoir, in advance of its official publication. All very logical and sensible — but there is just one fundamental problem with all that. There is absolutely NO sign of Hawkins' Memoir in ANY copy of Vol. 2, Part 1! It is to be found, if at all, in the Preliminary History in Vol. 1, dated 1815, which, as we have seen, is a complete chronological impossibility!!

As if that was not enough, there are certain other difficulties associated with Vol. 1. It seems to have been published in the spring of 1815 (March/April), because John Hawkins wrote to Samuel Lysons on 27 May 1815 (9): 'I am sorry to hear our friend Dalloway's book so much abused for its incorrectness', and again, in another letter to

the same gentleman on 2 July 1815 (10): 'Our friend Dalloway is so much hurt by the criticisms which have been found in his book. Lord Egremont [of Petworth Place] takes a malicious pleasure in pointing them out'. This is contemporary documentary evidence of publication in the spring of 1815, with many inaccuracies, which local landowners and dignitaries were only too ready and delighted to point out.

Those libraries in Sussex with at least 1 copy of Vol. 1 form the following list, with the figure in parenthesis signifying the number of copies of Vol. 1 with Hawkins' Geological Memoir. Lewes 1 (1); Worthing 2 (1); Chichester 2 (1); Crawley 1 (0); Horsham 1 (1); plus the West Sussex Records Office at Chichester 1 (0) and the Sussex Archaeological Library in Lewes 1 (0). There are thus 9 copies of this rare historical volume in Sussex libraries, but only 4 contain the geological essay by John Hawkins. We thus have a temporal anachronism but in only 50% of the cases. That was sufficiently peculiar to warrant taking a closer look at the copies of Vol. 1 in the Reserve Collection at Worthing Public Library, as representative of the 2 versions.

Both copies are dated 1815, one came from Parham House, near Storrington, in West Sussex, and the other has a lithograph of Lowther Castle, South of Penrith in the Lake District, headquarters of the northern estates of the Duke of Norfolk, on its last page. These 2 copies are similar, but also different. Both have the same set of 4 maps and plans, only in a different order, viz. ABCD in 'Parham, DBAC in 'Lowther': two of these maps are dated 1812, one 1815, and the 4th, a Map of the Rape of Chichester— the Frontispiece in 'Lowther'— has the amazing date of 1819, in a volume supposedly published in 1815! Both have the extensive Preliminary History, only with one critical difference. The 'Parham' copy has a Chapter headed Geology and Minerals, with the following apology: 'The substrata universally bears an analogy to the surface. Hitherto no account of this district has been published by the Geological Society of London, in the course of their investigations relating to most parts of England, of which the Editor would have gladly availed himself'. The Preliminary History in the 'Lowther' copy is 2 pages longer so as to accommodate Hawkins' 'Observations on the Geological Phenomena of the Western Division of Sussex', which we know, from other contemporary documentary evidence, was not written until after mid–1817, probably in 1818. The pagination is continuous, so it was not a later insert or addition.

Vol. 1 of Dallaway's Western Sussex appears thus to be a whole series of conundrums which do not make any temporal sense at all. And there is still the quandary of why some have and others do not have Hawkins's Geological Memoir; those that do have it possess an important landmark in the history of geology in Sussex, which contemporaries firmly believed was published in Vol. 2 anyway.

In late June 1819, Gideon Mantell received a pre-publication copy of Hawkins' Geological Memoir direct from the author and eagerly await its publication in book format. Despite the very restricted upper-class distribution of this Volume after the fire, Mantell must have assumed, during 1821, that it was now in the public domain because he makes specific reference to it in his published works of 1822 and 1830 (11). However, he seems to have been the only geologist of his era, and even later, who was even aware of its existence. Neither Roderick Murchison, in 1826, nor Peter John Martin, in 1828, in their respective descriptions of the geology of Western Sussex, acknowledge Hawkins as a precursor; neither did Frederick Dixon in 1850

(12). It was not until 1875 that it surfaced as No. 76 in the comprehensive bibliography at the back of William Topley's Geology of the Weald, with the anachronistic publication date of 1815 (i.e. Vol. 1), which became the standard thereafter. Despite this listing, Hawkins' Memoir did not warrant even a cursory comment in Chapter 2, Geological Literature relating to the Weald, its significance completely overlooked.

This Geological Memoir by John Hawkins was certainly the first geological exposition of what is now the County of West Sussex, and therefore an important landmark in the history of geology in Sussex. It makes a fleeting appearance in only certain issues of Vol. 1 of Dallaway's History of the Western Division of Sussex, with the date of 1815 on the title-page, but there is compelling evidence that it must have been written several years later, probably in 1818, even early 1819. Contemporaries, though, were eagerly anticipating its publication in Vol. 2, but it is glaringly absent from the few survivors from the flames, even if it was even there in the first place. It was assumed to be in the public domain by 1822, but confusion reigned as to which Volume.

Whenever, exactly, it made its public debut, it was, nevertheless, pioneering and perceptive for its time, and the only contribution of John Hawkins, of Bignor Park, to the geological knowledge of Sussex. Precisely when his Geological Memoir was 'published' remains a vexed issue, one of those annoying loose-ends which so confound historians of geology. It gains and retains its importance simply because it was the first in its field, and should be so recognised and applauded. Although a publishing enigma, it has that precious scientific commodity of Priority.

References

1) See the entry on John Hawkins by Hugh Torrens in the Oxford Dictionary of National Biography, 2004, Vol. 25, 929-930, and the references therein. Note in particular 'In his last years Hawkins was active in disseminating and supporting geological work in Sussex and was an important correspondent of the geologist Gideon Mantell (1790-1852)'. There is a brief entry for John Hawkins in one of the Supplements to William Sarjeant's Geologists and the History of Geology: Supplement 2 (1985-93) and Additions, Vol. 1, 1996, 707-08. It reads: 'English soldier, mining geologist and mineral collector. Studies of mines and minerals of Cornwall'.

John Hawkins was elected a Fellow of The Royal Society in May 1791 (aged 30), 'particularly for his mineralogical and metallurgical knowledge'; in January 1808 an Honorary Member of The Geological Society of London, shortly after its Foundation in November 1807; and in February 1814 a Founder Member, and shortly thereafter a Vice-President, of The Royal Geological Society of Cornwall, despite having his country seat in West Sussex.
2) The Letters of John Hawkins and Samuel and Daniel Lysons, 1812-1830. Edited by Francis Steer. West Sussex C. C.; Chichester, 1966, No. 38 on p. 32.
3) I am, my dear Sir . . . . A Selection of Letters written mainly to and by John Hawkins, F.R.S., F.G.S., 1761-1841, of Bignor Park, Sussex and Trewithen, Cornwall. Edited, with an Introduction by Francis Steer. Privately printed in a limited edition, 1959, 12-13.
4) Ibid., 17. 5) Ibid.
6) In Vol. 1 of the 4-volume transcript of the Journals of Gideon Mantell, at the Sussex Archaeological Society Library in Lewes.
7) Ibid. See also The Journal of Gideon Mantell. Edited by E. Cecil Curwen, 1940, 9

8) Steer, 1959, op. cit., 24-25. 9) Steer, 1966, op. cit., No. 28 on p. 24 10) Ibid., No. 30 on p. 25.
11) Fossils of the South Downs (1822) as quoted; "A Sketch of the Geological Structure of the Rape of Bramber" in History of the Western Division of Sussex, by Edmund Cartwright, Vol. 2, Part 2, 1830.
12) Roderick Murchison "Geological Sketch of the North-Western Extremity of Sussex and adjoining parts of Hampshire and Surrey". Transactions of The Geological Society Series 2, Vol. 2, Part 1 (1826) 97-107; Peter John Martin A Geological Memoir of a Part of Western Sussex, 1828; Frederick Dixon The Geology and Fossils of the Tertiary and Cretaceous Formations of Sussex, 1850.

Proposed TMS Special Publication
The History of Foraminiferal Micropalaeontology

HOGG members were invited to the AGM of the The Micropalaeontological Society (TMS), held on 7th November 2007, which celebrated the bicentenary of the Geological Society of London by adopting an historical theme. Following on from this, we have decided to assemble a series of key articles for a special TMS publication. The scope of the publication will be such that it will provide a global view of the history of foraminiferal micropalaeontology as the editors feel that the discipline is standing at a watershed in its history. Formal adverts for the proposed publication will shortly be placed in *Geoscientist* and the Micropalaeontological Society newsletter etc. The aim of the editorial team is to produce an integrated text that will have significant international scope and a volume that will be a valuable and significant addition to the literature of lasting value.

The editors are aware of the many impassioned debates that have occurred throughout micropalaeontology, not least those concerning classification. The submitted articles should stress the chain of events historically, the development and modification of ideas and personalities involved. All articles will be subject to the normal peer review process. We are anticipating a book length of 400-500 pages. A detailed book plan will appear in the next HOGG newsletter but, in the meantime, we are proposing the following sections: 1. *The beginning of foraminiferal studies*; 2. *The rise of professionalism*; 3. *Changing times*; 4. *Collections and collectors*; 5. *Depiction of form*; 6. *Keeping alive the legacy*; 7. *Epilogue*. If you are interested in contributing, please contact myself or my co-editors:
Dr Andy Henderson (a.henderson@nhm.ac.uk) and Dr John Gregory (john.gregory@petrostrat.com).

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HISTORY
OF
GEOLOGY
GROUP

Dinosaurs

(and other extinct 'saurians')

A Historical Perspective

Conference and Fieldtrips

(Conference to be held 6th-7th May 2008 at Burlington House, Piccadilly, London, UK)

Second Circular

This International meeting will investigate the History of Saurian Research with particular emphasis on Dinosaurs, known and forgotten personalities, major discoveries and expeditions. The programme will also debate the introduction, and acceptance of the major theories or principles associated with the greater understanding of dinosaur taxonomy, palaeobiology and evolution. Authors will also probe a cultural theme; exploring the role of artists and animators and the influence they have on our perception of dinosaurs over the last 180 years or more.

The response to the initial **Call for Papers** has met with great success and the programme will include presentations from many countries including Britain, France, Germany, Denmark, Portugal, Hungary, Russia, Canada, and the U.S. (*see following page)*

Call for Papers /Abstracts:
Authors are requested to send an abstract of 500 words to rtj.moody@virgin.net. Accepted abstracts will be printed in the Conference Abstracts which will be made available to authors and delegates at the conference. Specific papers will also be considered for inclusion in a special publication.

Registration and Associated Events:
Registration will take place on 5th May. The conference will be preceded by a visit to the Waterhouse-Hawkins models at Crystal Palace and followed by a fieldtrip to historic localities on the Isle of Wight and/or the Dorset Coast. Further details and registration forms can be downloaded from the History of Geology Group web pages.

Convenors:
Richard Moody (*Kingston University*); Eric Buffetaut (*CNRS Laboratoire de Géologie de l'Ecole Normale Supérieure, Paris*); Dave Martill and Darren Naish, (*University of Portsmouth*).

List of contributions to date

Faujas De Saint-Fond's Late Cretaceous Marine Vertebrates from Maastricht Rediscovered and Revisited
Bardet, Nathalie., Jaght, John W.M., Schulp, Anne S. and Eric W.A. Mulder .

The discovery of dinosaurs in the Lameta Beds of central India
Barrett, Paul M., Carrano, Matthew T. and Wilson, & Jeffrey A.

The "Powerful Imperial Lizard" *Dynamosaurus imperiosus* ; TheWorld's First *Tyrannosaurus rex* Comes to London
Breithaupt, Brent H., Southwell, Elizabeth H and Matthews, Neffra A.

Brontosaurus giganteus*: The "Most Colossal Animal Ever on Earth Just Found Out West" and the Discovery of *Diplodocus carnegii
Breithaupt, Brent H., Southwell, Elizabeth H and Matthews, Neffra A.

Scientific Priority and Primaeval Monsters
Brook, Anthony.

Spinosaurs before Stromer. Early discoveries of spinosaurid theropods and their interpretations
Buffetaut, Eric.

Visualizing Pterosaurs
Conway, J. A. and Kosemen, C.

Life and ideas of Giovanni Capellini: the palaeontological revolution in Italy
Fanti, Federico.

A forgotten dinosaur painting in German-occupied France: *Les Diplodocus* by Mathurin Méheut (1943)
Le Loeuff, Jean

Before *Pteranodon*: the early history of gigantic pterosaurs
Martill, David M.

Allan Jack Charig (1927-1997) an anecdotal tribute!
Moody, Richard T J and Naish, Darren.

Conan-Doyle, Piltdown, and the dinosaur in the well: obscure Wealden dinosaurs and the stories behind them
Naish, Darren.

Landmarks in the history of dinosaur paleontology in Portugal
Octávio, Mateus and Antunes, Miguel Telles.

The history of Late Jurassic pterosaurs housed in Hungarian palaeontological collections
Ősi, Attila., Prondvai, Edina and Rabi, Márton.

Reassessing the Evolution and Origin of Early Birds
Pittman, Michael.

Schulz and the earliest discoveries of dinosaurs and marine reptiles in Spain
Pereda Suberbiola, X., Ruiz-Omeñaca, J.-I., Bardet, N., Piñuela L. & García-Ramos, J.-C.

Lost En Route to England: The 1916 Sinking of the SS *Mount Temple* and her Canadian Dinosaur Cargo
Tanke, Darren H.

Pursuing Proavis: art, science and religion in the life and work of Gerhard Heilmann (1859-1946)
Ries, Christopher Jacob.

Dinosaur Ichnology of Portugal
Santos, Vanda F. & Rodrigues, Luís A.

The evolution of sauropod dinosaurs from 1841 to 2008
Taylor, Michael P.
William Perceval Hunter (1812-1878): forgotten naturalist and author, on both Wealden rocks and dinosaurs-to-be.
Torrens, Hugh.
Pterosaurs - are we making progress?
Unwin, David M.
History of research on *Archaeopteryx* and the ideas on the dinosaurian ancestry of birds
Wellnhofer, Peter.

****SEE END OF NEWSLETTER FOR REGISTRATION FORM****

Local heroes

Frederick Dixon: geological pioneer in West Sussex

Worthing Library 4-5th April 2008

Dr Frederick Dixon (1799-1849) was the youngest of three sons of Rector of Sullington, a downland parish. He qualified as doctor at St Bartholomew's Hospital, married, honeymooned round the Mediterranean and then came to live in Worthing in 1827. He had a lifelong fervent interest in fossils of the Chalk and Early Tertiaries of West Sussex. He was a friend of Gideon Mantell, Peter John Martin,etc, and, in particular, of Richard Owen. He was elected FGS (1840) supported by Mantell, Lyell and Murchison and died suddenly in September 1849, leaving his magnificent opus on Geology of Sussex unfinished. This was brought to publication by Richard Owen in Dec 1850 and contains 44 superb plates of fossils: it is still a standard work of reference. He spent 20 years amassing a significant fossil collection (4500 specimens), which his widow sold to the BM. The collection was dispersed but its catalogue survives. His work is second only to that of Mantell in its geological sigificance in Sussex. Dr Dixon was well-known in geological circles in the 1830s/40s, decades of great significance in history of geology, and was influential in many of the important debates in those times..

The West Sussex Geological Society will celebrate Dixon in three events:

1. A two-week Exhibition in the foyer of Worthing Library about the Life, Times and Work of Dr Dixon.

2. A Public Evening Lecture in Worthing Library Lecture Theatre on Friday 4 April on Frederick Dixon and the Geology of Sussex, by Anthony Brook

3. A Field Trip on Saturday 5 April to The Trundle and Bracklesham Bay, led by David Bone (who has been researching this area for 35 years) on a day with a mid-afternoon low tide, to view Dixon's field area, collect similar fossils and evaluate his pioneering contributions, alongside work by 20th Century researchers such as Martin Venables and the Tertiary Research Group.

For further details contact Anthony Brook (anthony.brook27@btinternet.com)

Can you help?....

A Rare Survival of an Early Teaching Mineral Display/Collection

John Cooke and David Weston

Whilst cataloguing the extensive collection of minerals within the Buxton Museum and Art Gallery, the authors noticed within the mock-up of a Victorian petrifaction shop was a box constructed out of pine with eight divisions horizontally and seven divisions vertically. The overall size is 16.5 x 12.5 inches (42 x 32 cms). The box contains 56 rock and mineral specimens with an assortment of polished marbles. This in itself was not so remarkable but associated with the collection was a hand-written booklet indicating that the collection was assembled by John Mawe, who was an early dealer in minerals, etc, in Matlock Bath, Derbyshire. The paste-down advertisement on the first page indicates that the collection was made at The Original Royal Museum, Matlock Bath. The title within the book states that this is: a collection of specimens illustrative of the mineralogy and geology of Derbyshire.

John and Sarah Mawe opened their original shop 'a small shop on the Green, by Walker's Hotel' in Matlock Bath in 1810 but two years later bought part of the Great Hotel on what was to become the Museum Parade and turned it into Brown and Mawe's Museum or Derbyshire Ornamental Repository (Cooper 2006). It was frequented by Royalty and soon became known as the Royal Museum and as competition built up within the town became known as the 'Original Royal Museum'. So, the earliest date for the collection would have been 1814. After John Mawe's death the museum was sold in 1836. We have a window for the origins of the collection of between 1814 and 1836. Adverts of this time suggest that the mineral collections were sold from this establishment for between 2 and 20 guineas (£2.10 and £21.00). The premises of John Mawe's "Original Royal Museum" survive to this day at Matlock Bath and are easily recognised from the paste-down advertisement engraving.

The collection is a snapshot of the interest in geology and mineralogy, especially so of Derbyshire. Specimens 17 to 24 indicate the varieties of lead ores that were being extracted locally and specimen 39 is worthy of special mention being described as 'Ecton Spar'-rhombic spar with copper pyrites, which shows that specimens from the Ecton Copper Mines were sufficiently plentiful

and recognisable to have their own local name. Although the locations of the specimens are not given in detail, all the ornamental stones, such as Black Marble, Dukes Red Marble, Oakstone Baryte and Bird's Eye Marble are still traceable to Ashford, Nettler Dale, Arbor Low and Monyash. Most of the mineral specimens can only be generally located as Derbyshire, with just a few exceptions, such as the pyromorphite which is probably from Brassington and specimens 52 and 53 which are elaterite from Windy Knoll, Castleton. This rare and interesting survival of a complete John Mawe collection is on permanent display in the "Wonders of the Peak" section at Buxton Museum and Art Gallery and viewing of the exhibit is highly recommended.

Subsequently, a further two possible Mawe collections have been found in storage. After cleaning and curating it is apparent that the collections consist of one hundred specimens each. One collection represents rock types and the other is principally composed of ores and rock forming minerals. No catalogue exists (or has been found) within the museum.

We would be grateful if any curators, who might have a Mawe collection within their museum, could contact us to compare these rare survivors of geological teaching aids.

Grateful thanks are extended to Ros Westwood and the staff of The Buxton Museum and Art Gallery for access to their collections.

1. Cooper, M.P., 2006. Robbing the Sparry Garniture-A 200 Year History of British Mineral Dealers.

INHIGEO MEETING in OSLO

INHIGEO will arrange three scientific symposia and one excursion in connection with the 33rd International Geological Congress in Oslo. The deadline for submitting abstracts to the symposia has been prolonged to **29th February**. If you wish to propose an abstract before the deadline, please do it on www.33igc.org.

The cruise will begin with **arrival at our hotel on the evening of Friday the 1st of August** and will **end on the evening or afternoon of Monday the 5th of August**, which is the day before the IGC33 starts in Oslo.

We shall endeavour to keep to a price of not more than **1.000 Euros per person for the excursion and hotel accommodation.**

For more information contact:

Jens Morten Hansen, statsgeolog, adj. professor, lic. scient., GEUS, Øster Voldgade 10,
DK-1350 København K

Kontor: 3814 2793, Mobil: 2165 2153, E-mail: jmh@geus.dk

History
Of
Geology
Group

'STONES of DESIRE'

A history of gemstones and gemmology

Call for papers

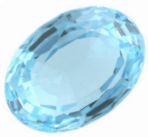
The History of Geology Group (HOGG), an affiliated group of the Geological Society of London, is planning to hold a meeting in conjunction with the Society of Jewellery Historians (SJH), entitled "*Stones of Desire*" - *a History of Gemstones and Gemmology*, in November 2008 (exact date to be confirmed).

We are looking for speakers to give c.30 minute talks on subjects which fit this topic, perhaps under the following broad categories:

- **a) gemstones in jewellery**
- **b) historical gemstone collections**
- **c) aspects of historical gemstone collecting**
- **d) individual famous gemstones**

although any other aspects would also be welcomed.

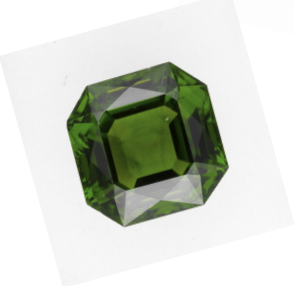
Essentially we are looking for historical aspects rather than modern-day research.



The venue will be in London.

If you feel you would like to contribute, or want to be put on a mailing list for more information, please contact:

Peter Tandy,
Department of Mineralogy,
The Natural History Museum,
Cromwell Road,
London SW7 5BD,
or e-mail p.tandy@nhm.ac.uk.



(Images courtesy of NHM Picture Library)

DINOSAURS -A HISTORICAL PERSPECTIVE
Geological Society Piccadilly
May 5-9 2008
Conference and Field Trip Registration Form

NAME _

ADDRESS _

Postcode _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ **Telephone**_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

E-mail _

The conference and related fieldtrips for *Dinosaurs-A Historical Perspective* will take place from 5th -9th May 2008. The Conference will be held at the Geological Society, Burlington House, Piccadilly, London W1J 0BG (nearest Underground Stations are Piccadilly and Green Park). The Crystal Palace Fieldtrip will be undertaken by public transport. The Excursion to the Isle of Wight/Dorset Coast will include an overnight stay on 8th/9th May. Travel to and from the island will rely on a mix of public and private transport.

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

May 5, 2008: Field Trip: Crystal Palace, Sydenham	£10.00	☐	_ _ _ _ _ _
May 5, 2008: Registration/'Ice Breaker'	N/C	☐	_ _ _ _ _ _
Conference: May 6-7, 2008	£45.00	☐	_ _ _ _ _ _
May 6 only	£25.00	☐	_ _ _ _ _ _
May 7 only	£25.00	☐	_ _ _ _ _ _
Student	£20.00	☐	_ _ _ _ _ _
Reception - May 6, 2008 (free to Speakers and Conference Delegates)			
Conference Dinner: 7 May, 2008	£30.00	☐	_ _ _ _ _ _
Field Trip: *(deposit)* Dinosaurs of the Isle of Wight			
8-9 May, 2008 (Dorset extension optional extra)	£25.00	☐	_ _ _ _ _ _

Contact: rtj.moody@virgin.net

Total Payment: _ _ _ _ _ _ _

Please complete and return this form together with a cheque (made out to the History of Geology Group) 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: 7th April 2007. **Overseas delegates can pay during registration.**

Field trips will be led by Dr Dave Martill of Portsmouth University and Professor Dick Moody - For further details, e-mail as above.

DINOSAURS -A HISTORICAL PERSPECTIVE
Geological Society Piccadilly May 6-7 2008

Abstract: (Maximum 500 words)

NAME: _

E-mail: _

Title of talk or Poster:

_ _

_ _

_ _

_ _

Attach additional page if required

Membership fees

HISTORY OF GEOLOGY GROUP

As agreed at the AGM in 2006, from January 2008 the annual fee for membership of HOGG is £15. We urge all members to pay by standing order. If you don't already do so, or if you have not yet amended your existing standing order (from £10 to £15), please complete the form below and **send it to the Treasurer:**
Dr Beris M Cox, 151 Browns Lane, Stanton-on-the-Wolds, Keyworth, Nottingham, NG12 5BN.

Please do NOT send it to your bank

Those whose standing orders were not amended in time for this year's payment should send to the Treasurer a cheque for £5 (payable to HOGG) to cover the shortfall. Many thanks.

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STANDING ORDER FORM

To the Manager of Bank or Building Society_ _

Branch Address _

Sort Code (number in top right hand corner of cheque): _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Account Name: _

Account Number:_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Please pay the amount of £15 (fifteen pounds) to the History of Geology Group of the Geological Society (Alliance & Leicester Commercial Bank plc. Account No. 14 665 9406, Sort Code 72-00-00) on 1st January, 2009 (or closest date thereto) and annually thereafter until terminated by me in writing. **This standing order replaces any other made out in favour of the History of Geology Group of the Geological Society.**

Signed:……Date .....:……

Print your name and address ……..……

……..……...

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