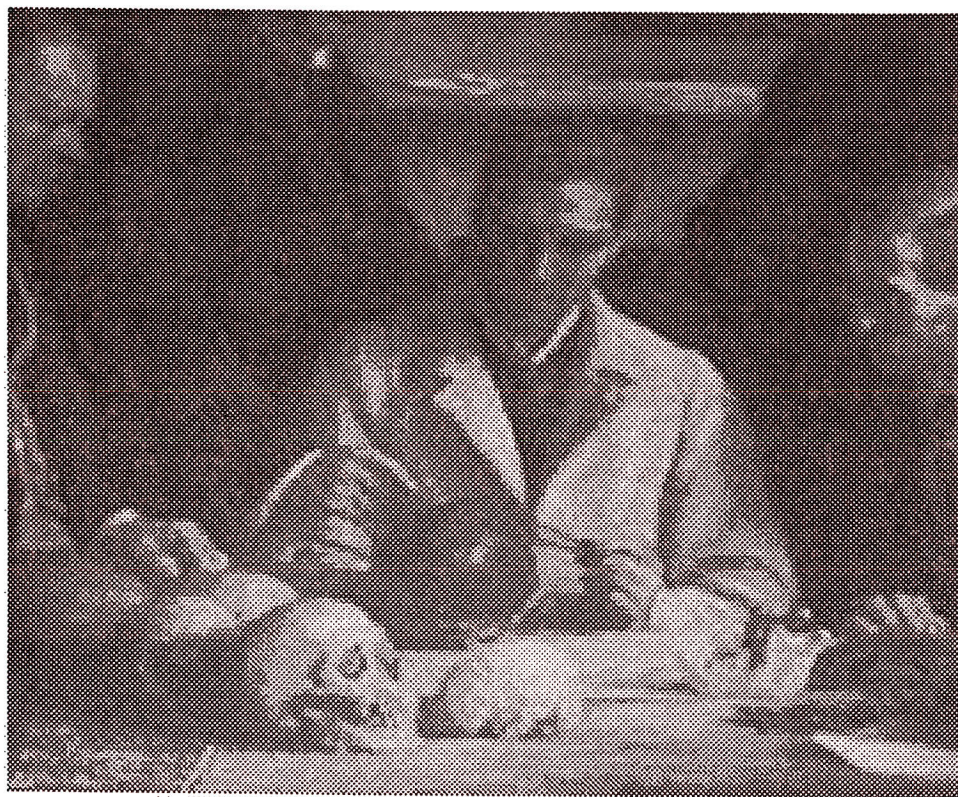


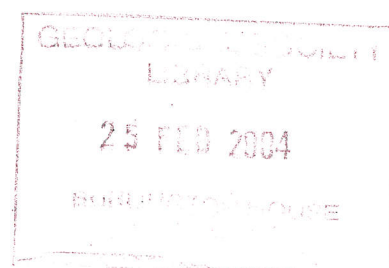
HOGG

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



Number 20

February 2004



Cover Illustration:

The picture shows a portion of the painting "A Discussion of the Piltdown Skull" by Cooke, following the meeting at the Geological Society in 1953, when the fossil hominid skull known as "Piltdown Man" was exposed as one of the greatest frauds of all time. In the centre, measuring the reconstructed skull with a pair of dividers, is Sir Arthur Keith, an anatomist and palaeontologist, keeper of the Hunterian collection of the Royal College of Surgeons, and president of the Anthropological Institute.

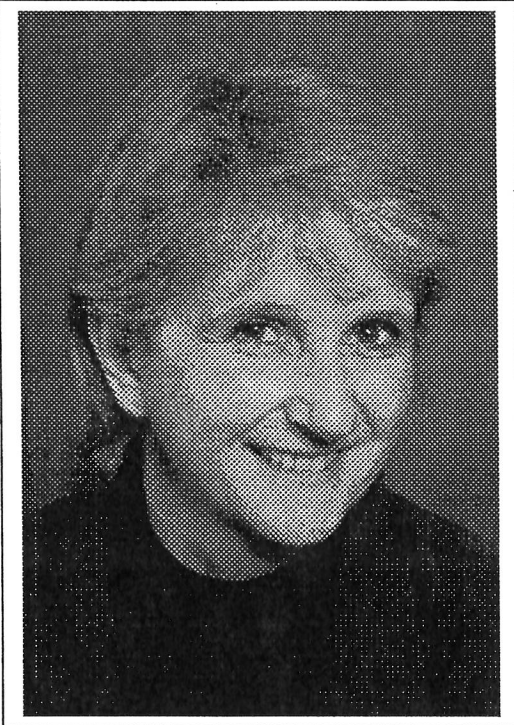
Hailed as one of the most important scientific discoveries of its time, the fossil human remains of *Eoanthropus dawsoni* (the Dawn Man of Dawson), found from 1912 to 1915 at Piltdown, Sussex, were thought to hold the key to our evolutionary past. The doubts of some scientists were finally confirmed in 1953 when the fossils were proved to be false. The exposure was widely covered by the media and questions were raised in the Houses of Parliament. Since then, there has been much speculation as to who was responsible for 'Piltdown Man' from writer Sir Arthur Conan Doyle to some of the Natural History Museum's own scientists. Fifty years on, we still don't know who was behind it, and what drove them to carry out one of the most reported scientific hoaxes of all time.

Piltdown Man will be one of the frauds looked at in the next HOGG meeting on **Geofakes, Fraudes, and Hoaxes** (see page 12)

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The HOGG Committee, 2003-2004

Cherry Lewis (Chairman)

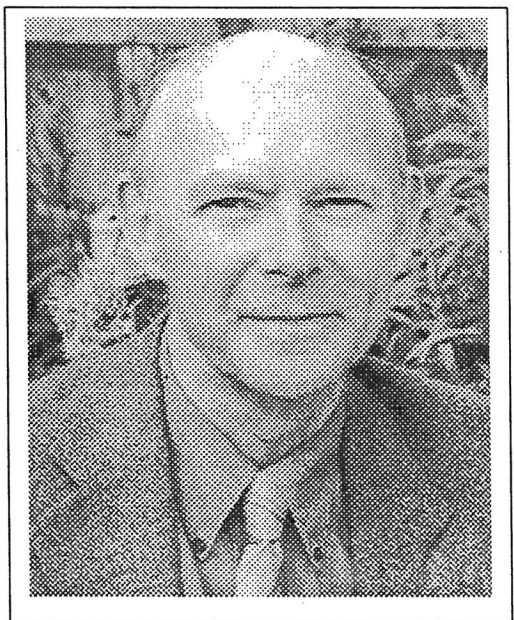


Cherry Lewis was formerly the Secretary of HOGG, a post she has held for three years. Having been seconded to the committee in 1999 in order to convene the Geological Society's flagship meeting on the Age of the Earth, she has subsequently championed the history of geology within the Geological Society and other and other institutions. She is a UK representative on the International Commission on the History of Geological Sciences, and represents the West of England Geological Association as a trustee of the Bath Royal Literary and Scientific Institution.

Cherry is the author of *The Dating Game* which documents the history of geochronology and the life of Arthur Holmes, one of the earliest pioneers in this field. She has participated in many radio programmes, including Melvyn Bragg's 'In Our Time', and was a contributor to the recent BBC TV series on Leonardo da Vinci.

At present she works for Bristol University as Research Publicity Officer, having previously worked in the oil industry for 10 years. She holds a PhD in geochemistry.

Richard Howarth (Vice Chairman)



Richard Howarth is a geologist who specialised in statistical interpretation of geological and geochemical data with Shell International (1966-68), the Applied Geochemistry Research Group, Imperial College, London (1968-85) and British Petroleum (1985-92). He is currently Honorary Professor in Mathematical Geology, University College London. He has been awarded the Murchison Fund of the Geological Society, the Krumbein Medal of the International Association of Mathematical Geology and the Richardson Award of the Geologists' Association. He has served as a Committee member of HOGG (1993-96; 2001-2003) and is a member of INHIGEO (1998-present).

Alan Bowden

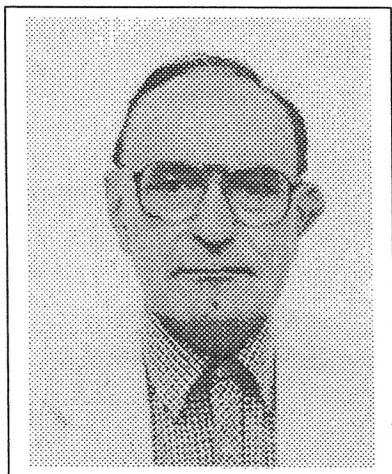


Alan Bowden is currently Curator of Earth Sciences at the National Museums Liverpool. After gaining an M.Sc in Marine Earth Science at University College London he spent two years working as both a petrographer and biostratigrapher whilst working in a Quarrying Consultancy. A spell of ten years then ensued in the service sector of the Petroleum Industry before leaving to work in museums.

Professional interests revolve around palaeontology, meteoritics, planetary science and the History of Science (geology and astronomy). For the last ten years I have been an external dissertation supervisor for the University of Liverpool's M.Sc course on the History of Science and Technology. My interests in the History of Science are largely concerned with 17th/18th century Cosmogonies, planetary observations and the early

history of petrology leading to the work of John MacCulloch and his geological mapping of Scotland. A current project is as one of the co-editors on a forthcoming Geological Society Special Publication on the History of Palaeobotany.

Anthony Brook



Anthony Brook was born a week before the fall of France in the War and managed to survive the rigours of an old-style grammar-school education in the 1950s to gain a place at Manchester University. He read for an Honours degree in Geography with subsidiary Geology, graduating in 1963 with a II.i. He then took Horace Greely's famous advice to 'Go West, young man' and went to America for graduate study. He returned with an M.A. and worked for 30 years in a variety of jobs, but on retirement decided to return to his intellectual first-love, and henceforth to research/write about aspects of geology, only now with a lifetime's perceptions and experiences. He currently has a dual relationship with Sussex University: as an Extra-Mural Tutor and as a part-time D. Phil student researching The Retail Revolution – Myth or Reality?

Cynthia Burek

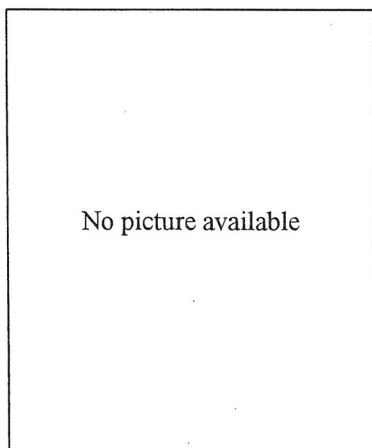


Cynthia Burek is a senior lecturer at Chester College, teaching earth science and some of the history of science course. A Quaternary geologist by training, she has participated in a 3 year European project on getting history of science into the secondary curriculum at European level. This was completed in 2002 with the publication of a book – The role of the history of science in secondary Education. She is

actively undertaking research in women in the history of geology and recently read a paper on an aspect of this in INHIGEO in Dublin 2003. She has written several articles on women geologists in Earth Heritage, Geology Today, Cork Geology Journal and several encyclopedia entries. Work is in progress on further articles. This is an area that she feels is important as providing role models for getting female students to think about geology as an area of study through history.

She has served on the HOGG committee for one term and has been a Fellow of the Geological Society since 1971.

William George (Treasurer)

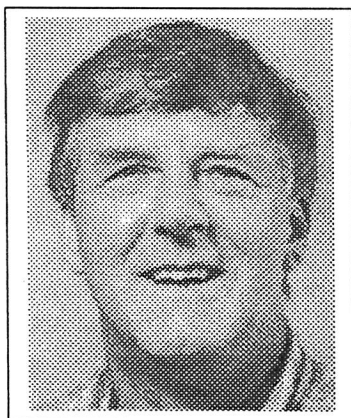


Bill George is currently the Treasurer of HOGG, a post he has held for two years. Bill has been avidly collecting second hand and antiquarian geological books for more than 30 years. He may often be seen tramping in and out of bookshops in the Cecil Court and the Charing Cross Road frittering away the stipend he earns as a chartered librarian managing a cluster of public libraries in the London Borough of Barking & Dagenham.

Bill is keen on local history and genealogy. He is currently Vice-chairman of the Barking and District Historical Society and serves on the Council of the Essex Field Club and is Treasurer of Essex RIGGS.

His main interest is the geology of Essex, historical geological biography and the Lower London Tertiaries, especially the London Clay.

John Mather



John Mather joined the Geological Survey in 1966 following a Ph D in metamorphic petrology at Liverpool University. Posted to the then WaterDepartment, he worked in the UK and overseas before moving to AERE Harwell in 1973 to manage a programme on the geological disposal of hazardous and radioactive wastes. Seconded to NERC headquarters in 1983 he returned to BGS as Chief Hydrogeologist in 1986 and became Assistant Director and Head of the Geochemistry and Hydrogeology Directorate the following year.

In 1990 he was appointed Lyell Professor of Geology at Royal Holloway, University of London from where he retired in 2001. He currently lives on the edge of Dartmoor where his interests include restoring part of a converted hotel, ceramics and the history of hydrogeology. He convened a meeting on "200 years of British Hydrogeology" in December 2002 and a Geological Society Special Publication based on this meeting will be published early in 2004.

A. John Martin

No picture available

John Martin. John's entire career has been spent in the oil exploration industry, although his early interest in the history of geology was fostered, while a student, by attending the lecture course given by Victor Eyles at University College London. It was at this time that he started collecting early books on geology, an interest still maintained.

In 1992, based in London, John was disappointed to find how poorly the subject was served either by the universities or by the Geological Society. In company with Hugh Torrens and John Fuller he helped get the History of Geology Group (HOGG) accepted by the Society and became the first Secretary. He held this position for the first eight years of HOGG's existence

when he resigned to become Chairman, a post he has held for the last two years. During this time John has helped establish HOGG as an active Group of the Society and for its size he feels that it has fully played its part in the growth and activities of the Society. Apart from establishing and contributing to the HOGG Newsletter, joint meetings and associations have been held in London with other societies and at other centres across the country. In addition to Geological Society publications HOGG has jointly published work with the Geologists' Association and the AAPG.

After 10 years John feels that it is now time for a change but is happy to continue as a committee member in order to contribute some continuity to the Group.

Anne O'Connor (Secretary)

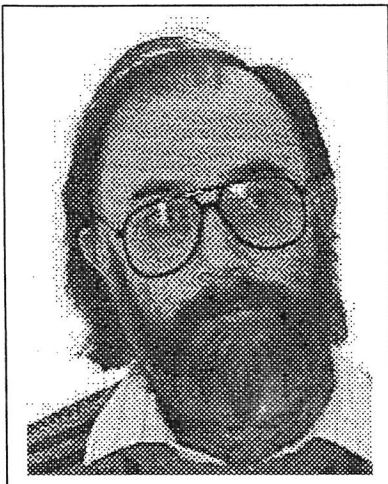


Anne O'Connor is currently finishing a Ph.D. in the Department of Archaeology at Durham on the history of research that was carried out between c.1860 and 1960 into the British Early Palaeolithic. This subject relied heavily upon the contributions of geologists who came from a broad range of different backgrounds. Their varied interests in different aspects of Quaternary geology (glacial geology, the geology of Quaternary rivers, palaeontology, Palaeolithic archaeology) led to some fascinating arguments over the patterning of the Quaternary record, and these had important implications for interpretations of the archaeology.

In addition to this rather specific research focus, Anne also has a general interest in the wider history of geology and has contributed entries on Henry Bristow (1817-1889) and Joseph Beete Jukes (1811-1869) to the Thoemmes Dictionary of Nineteenth-Century British Scientists (in press). From January 2004, Anne will be working on a three-year project in the Archaeology Department, examining the work of Canon William Greenwell (1820-

1918), an antiquarian and archaeologist who was also based in Durham. Although Greenwell had few geological interests, he did invent a fishing fly, Greenwell's Glory".

Peter Tandy (Newsletter Editor)



Peter Tandy In 1994 Peter attended his first Geological Society meeting at Burlington House, and found himself 'volunteered' to act as editor of the newsletter of the newly-formed History of Geology Group. Now, issue number 20 is reached, with Peter having held the position unbroken for the past 9 years. His background is one of mineralogy, having entered the Mineral Department of the Natural History Museum in 1971 straight from school, and still there 32 years later. In that time he gained an Honours degree in Geology from Birkbeck College. For all but a tiny percentage of his time in the museum, his role has been to acquire, identify and catalogue new acquisitions to the collection of minerals,

and generally to nursemaid the National Collection of minerals. Although in youth he tended to eschew history, over the past years his interests (not only geological) have turned towards it, and he finds great reward in reading of the achievements of immensely clever people (often amateurs) in unraveling complex stories from scant evidence, or in furthering science and technology. He has had a number of small roles in editing newsletters ranging from a now defunct NHM staff newspaper in which he was largely responsible for a commemorative century "1881" edition in 1981, to a small newsletter catering for collectors of antique typewriters! Outside of work, he has interests in almost anything except most poetry, ballet & modern art, but particularly indulges in books (history of technology & social history mainly), 'real' art (especially trompe l'oeil), football & cricket, real ale ("Sarah Hughes is my all-time favourite!")...... and sundials!"

Have you paid?....

If you have not yet paid any membership fees (currently £10/year) to HOGG for 2004, they are now overdue. For those who have not yet paid, this will be the last reminder and the last newsletter.

....or are you paying too much?

A small number of members who pay by Standing Order have changed their payment but NOT cancelled the previous agreement with the bank. So far HOGG has made a repayment, but from the start of 2004 it will not do so, and will accept such payments as a donation. If you are one of these people, this is your last chance to amend your payment as far as HOGG is concerned.

The Previous HOGG meeting.....

"Fireballs and Stones from the Sky"

Approximately 35 people assembled for this meeting held at the Natural History Museum, London.

The first s& keynote peaker was Ursula Marvin from the Harvard-Smithsonian Centre for Astrophysics, who gave an illuminating **overview of meteoritics in history**.

Witnessed falls of stones were accepted as divinely inspired events at Nogata, Japan, in 861, and Ensisheim, Alsace, in 1492. In writing of that event, Sebastian Brant spoke as a Renaissance humanist when he declared he would not believe such things if they had not been described in antiquity. In the 18th-century, savants of the Enlightenment held that any bodies falling from the sky must have originated on the Earth. Thus, when a stone fell in 1766 at Albareto, Italy, distinguished scholars disputed whether it had been hurled aloft by a volcano or by a bolt of lightning. In 1794, the physicist, E. F.F. Chladni, published the first treatise arguing that meteorites are authentic phenomena, which originate in space and form fireballs as they plunge through Earth's atmosphere. Chladni's book received decidedly mixed reviews, but then, between 1794 and 1798, four widely publicized falls of stones occurred. These events led to the first comprehensive chemical analyses of fallen stones and irons by Edward C. Howard at the request of Sir Joseph Banks, the president of the Royal Society. Howard worked with the mineralogist, Jacques-Louis de Bournon, who separated the samples into their component parts. Their work, reported in 1802, was a major factor in establishing meteoritics as a new branch of science. However, Chladni's idea of an origin in space languished until about 1860 when most scientists finally relinquished their convictions that meteorites originate within Earth's atmosphere or in volcanoes on the Moon. Meteorites then began to be seen as collision fragments of asteroids, and, since 1982, as impact fragments from the Moon and Mars.

Following Ursula's keynote talk, Vladimir Jankovic from the Centre for History of Science, Technology & Medicine, University of Manchester, kept the audience enthralled with his **Mineral Meteorology versus Laboratory Atmospheres: the end of classical meteors in 19th century Europe**.

Until the Late Enlightenment, meteorology was a theoretical science of meteors. It was Aristotelian in approach, discussing suspended and imperfect bodies made up of subterranean exhalations released into the sublunary sphere. Rain, hail, thunder, earthquake, Fool's Fire, shooting stars, aurora borealis, and even Milky way were termed 'meteors' and treated as similar in ontological and epistemological qualities. Meteorology was thus only accidentally concerned with 'atmosphere', 'air' or even 'weather'. By the late eighteenth century, European chemists and naturalists challenged this broad understanding. Their research in the chemistry of gases and atmospheric processes narrowed the definition of the science and opened up a new set of 'meteorological' problems. The resulting paradox was a meteorology minus meteors. The paper looks at the reasons of the old meteorology's demise.

The next section, on Museum collections, was headed by Sara Russell from the NHM, London, who spoke on **The History of the Natural History Museum Collection**

The meteorite collection at the Natural History Museum is as old as the subject of meteorites itself; the first three meteorites were acquired by the British Museum in 1802, just as the general acceptance that meteorites were extraterrestrial objects was gaining ground. The collection grew steadily in the first half of the nineteenth century, growing to a total of about 70 specimens under the first Keeper of the Department of Natural history, but then its growth leveled off when the second Keeper took office. In 1857 the Department of Mineralogy was separated from Palaeontology, and Nevil Story Maskelyne, a chemist with an interest in meteoritics, was appointed Keeper. Under his enthusiastic guidance, the number of meteorites in the collection trebled, and by the time the Natural History Section of the British Museum moved to its current site in South Kensington in 1883, the collection had grown to around 250 specimens. Throughout the twentieth century the collection continued to grow, by purchase donation and exchange. Among the most recent additions have been material recovered from European expeditions to Antarctica, and expeditions by museum scientists to Australia. The Natural History Museum now houses a collection of over 2,000 individual meteorites.

Sadly, it was not possible to get a speaker for an account of the historically important collection in the **Natural History Museum in Paris**, but meeting organiser Joe McCall, using a statement by Jaques Fabries (in "Meteorites": B.Zanda & M.Rotaru 2001), provided a suitable abstract:

The collection was inaugurated in 1864 at the suggestion of A.Daubree, Professor of Geology, by combining the fourteen specimens curated by the Mineralogy Laboratory, with the 64 in the Geology collection. It grew rapidly to 268 specimens by 1878, and soon became one of the great meteorite collections of the world. A.Lacroix, Professor of Mineralogy arranged in 1926 that the collection, then numbering 570 specimens, be transferred from the Geology to the Mineralogy Laboratory. Though up to the end of WW1 the collection remained of world class, and held 670 specimens by 1950, it has not progressed since, like the majority of great collections, due to insufficient funding and lack of general rules governing the recuperation of meteorites falling on or found on national territory (cf. the case in Western Australia where in the 1960s I was involved in legislation establishing state ownership - J.McC.). The Museum often finds it impossible to acquire specimens offered to the museum because of the considerable price that they have acquired in recent years. Despite this problem, the collection numbered 974 specimens by 1996 and 1145 by 2000. France is important as several renowned names refer to falls or finds there : Ensisheim, Aubres, Chassigny, Juvinas, L'Aigle, Orgueil, Ornans coming to mind.

Finally in this section, the meeting was privileged to have Guy Consolmagno from the Vatican Observatory to speak on the **history of the Vatican Collection**

The heart of the Vatican's collection of meteorites is the 19th century collection of Adrien-Charles, Marquis de Mauroy (1848-1927), a gentleman/scientist and a life member of the Societe Francaise de Mineralogie, who served three terms as its Vice President. He mostly collected meteorites in his native France or purchased samples from standard meteorite dealers, eventually amassing a collection (approximately 1000 pieces

representing 400 falls) said to be one of the largest private collections in the world for its time. After his death, his widow donated the collection to the Vatican; it has been curated at the Vatican Observatory in Castel Gandolfo since 1935, mostly in a state of "benign neglect" until recently. As such it remains an excellent example of what was available to collectors of that period, and how these pieces were documented and stored.

Following lunch (and the group's AGM), Robert Hutchison, formerly head of meteoritics at the NHM, opened the afternoon session with a talk about **The Wold Cottage, Yorkshire, meteorite fall of 1795, December 13 - a prime convincer in England**, one of the most important British falls.

The fall of a single stone was seen by three eye-witnesses; others heard sonic effects. The day was overcast but dry. Documentation of the circumstances of the fall, public display of the 25 kg stone and its subsequent study, formed parts of the argument that led to the acceptance that rocks and lumps of iron fall from the sky.

The importance of chance in changing the views of *savants* cannot be overemphasised. Timing was of the essence. In 1794 Chladni published a book on certain iron masses and stones which he suggested had fallen from the sky. The book reached England by 1795, certainly by 1796, when Wold Cottage was displayed. In 1794 the fall of a shower of stones near Siena, Italy, was widely witnessed but (erroneously) linked to an eruption of Vesuvius. A fall of stones near Benares, India, in 1798 also was widely witnessed. It was noted at the time that neither the Wold Cottage nor the Benares fall occurred within 1000 km of a volcano. By 1800 chemical analysis allowed the identification and determination of nickel. Howard and de Bournon (1802) were able to show that the three falls, plus Tabor, contain nickel-bearing metal, which also forms masses of iron unrelated to their surroundings. Two such masses (Hraschina) had been seen to fall in 1751. Thus the stones and iron masses were linked, and meteoritics was born. It was particularly lucky that no metal-free meteorite fall was recorded until 1806!

Recommended reading: Burke, J. G. (1986). *Cosmic debris: Meteorites in history*. Univ. California Press, pp 445. Marvin, U. B. (1996) Ernst Florens Friedrich Chladni (1756-1827) and the origins of modern meteorite research, pp 545-588; and Pillinger, C. T. and Pillinger, J. M (1996). The Wold Cottage meteorite: Not just any ordinary chondrite, pp 589-605. Both papers in *Meteoritics & Planetary Science* 31.

Following this, was Mattieu Gounelle from ICNSNM, France, who spoke in detail about **The meteorite fall at L'Aigle on April 26th 1803 and the Biot report**.

"Il est tombé des pierres aux environs de l'Aigle le 6 Floréal an 11". Stones fell around l'Aigle, July 26th 1803. Thus ends the results section of the Biot report [1] read in front of the Institut de France, the 29 messidor an 11 (July 17th 1803). In a France that still used the revolutionary calendar, Jean-Baptiste Biot, a young scientist aged 29, was sent by the Home Office Secretary Chaptal to report on the spectacular fall of stones, at l'Aigle, 140 km at the Northwest of Paris. At the time of the l'Aigle fall, the mere existence of meteorites was harshly debated [2,3]. Chladni's book on iron masses [4] had been published in 1794, but his ideas had not yet convinced the savants of the time. Biot himself defended the theory of a lunar volcanic origin for meteorites [5,6]. This might be the reason why Chaptal, a scientist himself, sent Biot to l' Aigle when rumours started to fill Paris with stupor and astonishment [7]. Despite, or because of his interest in the

matter Biot claimed himself as "a witness foreign to any system" [1] when he departed from Paris to l'Aigle, with a compass, a 1/86400th map of the area, and a sample of the Barbotan meteorite (fall, 1790). He did not start his enquiry at l'Aigle, but in the nearby town of Alençon to check on the local mineralogy and human artefacts. Traveling between Alençon and l'Aigle, he questioned travellers and coachmen about the meteor seen the same day the stones fell. Once in l'Aigle, he questioned clergymen as well as laymen on the apparition of stones, and on the meteor. Summarising his observations, Biot distinguished 2 kinds of evidence of an extraterrestrial origin of the stones. Physical evidence included the absence of any stone or human artifact in the area similar to the fallen stones, the sudden appearance of a large number of identical stones similar to previous meteorites such as Barbotan. Moral evidence included the number of witnesses who saw "a rain of stones thrown by the meteor" as well as their diversity in term of profession, interests and social status. Together, these lines of evidence pointed toward the fact that extraterrestrial stones fell around l'Aigle, July 26th 1803 [1]. With Biot report, the existence of meteorites was recognised. In addition to a celebration of the bicentenary of the l'Aigle fall and the Biot report, our paper will aim at retracing the social context that lead a scientist for the first time to a thorough enquiry of stones fallen from the sky.

References: [1] J.-B. Biot, in: Mémoires de la classe des sciences mathématiques et physiques de l'Institut National de France 7, Paris, 1803, pp. 224-265. [2] R. Westrum, Social studies of science 8 (1978) 461-493. [3] U.B. Marvin, MAPS. 31 (1996) 545-588. [4] E.F.F. Chladni, Riga, 1794, 63 pp. [5] J.-B. Biot, Bull. Sci. Soc. Philomatique 66 (1802) 159-160. [6] J.-B. Biot, *ibid* 68 (1802) 153-156. [7] C.P. Brard, in: Dictionnaire des Sciences Naturelles, Strasbourg, 1824.

Following a tea break, Richard Howarth, from the Department of Earth Sciences, University College London, spoke on **understanding the nature of meteorites: the experimental work of Gabriel-Auguste Daubrée (1814-1896)**

The geologist and mineralogist Gabriel-Auguste Daubrée (1814-1896) was born in Metz, France and studied at the Ecole Polytechnique and Ecole des Mines, becoming a qualified mining engineer in 1834. Following a spell in charge of the mines at Bas-Rein, Alsace (during which time he made a geological map of the district), he was appointed professor of mineralogy and geology at Strasbourg then engineer-in-chief of mines in 1859. He was appointed professor of geology at the Muséum d'histoire naturelle, Paris, in 1861, and was elected to the Académie des sciences the same year. Appointed professor of mineralogy at the Ecole supérieure des Mines in 1862, he became its director in 1872, a post which he held until his death. His research embraced the artificial production of minerals and rocks, the origin of minerals (especially bog iron ores), the nature of fluorescent minerals, the nature of thermal waters, the permeability of rocks to water and its relation to volcanic phenomena, metamorphism and deformation structures resulting from the effects of heat and pressure in the earth's crust, earthquakes, and the composition and classification of meteorites. His experimental investigations began in the late 1840-50s, with attempts to synthesise silicate minerals (e.g., feldspars, mica, topaz) under conditions of high pressure and temperatures up to c. 500° C.

Daubrée was instrumental in forming a very large meteorite collection at the Muséum d'histoire naturelle. By 1867 he had amassed material from some 283 falls,

selected to represent the diversity of meteorite characteristics. He was convinced that meteorites, which he believed to be of extra-terrestrial origin, provided a new and important source of information – comparison of their compositions with that of the earth would throw light on the origins of our planet, particularly the deep crustal regions which are inaccessible to direct investigation. The second half of his book *Études synthétiques de géologie expérimentale* (Dunod, Paris, 1879) summarised the results of his subsequent research.

His classification of the meteorite collection was based on a fundamental division into ‘metallic’ and ‘stony’ types. The former class was subdivided according to the relative proportion, and nature, of its metallic (Ni-Fe) ‘iron’ content: I Holosiderites (no stony matter present; sometimes showing Widmannstaetten structure); II Syssiderites (iron present in continuous masses, forming a ‘metallic sponge’ within a magnesian silicate resembling peridotite); III Sporasiderites (iron present as irregularly disseminated grains), subtypes included chondrites, howardites, eukrites and chassignites. Class IV Asiderites (no iron present) was principally composed of carbonaceous meteorites. Daubrée demonstrated experimentally that many aspects of the textures of iron meteorites could be reproduced. For example, the fusion of peridotites or similar terrestrial rocks in a reducing environment yielded a mixture analogous to that of meteorites containing grains of nickel-iron. This led Daubrée to postulate that peridote, an essential mineral of deep crustal rocks, had its origin in the fusion of metallic iron with magnesian minerals.

A second series of experiments in furnaces at high temperature and pressure, or with the aid of explosives and compressed gas demonstrated that the presence of the many cavities and depressions on the surface of meteorites (which Daubrée called ‘piezoglypts’) could best be accounted for by the erosive action of turbulent compression-heated air masses which passed the meteorite during its fall to earth.

His systematic experimental work thus provided the basis for a significant advance in the understanding of the nature of meteorites.

Moving then into the 20th century, Ted Nield, from the Geological Society of London, gave a splendid talk on **The Biggest and one of the Rarest**

The Hoba West Meteorite (Grootfontein, Namibia) was discovered in 1920 by Johannes Hermanus Brits, and declared a national Monument in 1955. Barely visible at the time of its discovery, excavation revealed it to be roughly rectangular (2.95m x 2.84m, and from .75m to 1.22m in thickness). It fell to Earth sometime during the last 80,000 years. With a weight of c. 54,000- 60,000kg, it is the worlds largest known meteorite.

Hoba is composed of 82,4% Fe, 16.4% Ni, and 0.76% Co with traces of carbon, sulphur, chromium, copper, zinc, gallium, germanium and iridium. The main minerals present are kamacite and taenite. Hoba also contains the rare meteorite minerals schreibersite, troilite, and daubreelite. But Hoba is not just any old iron. It is a nickel-rich ataxite - the rarest form. It may seem remarkable that the largest known meteorite should also come from one of the rarest groups.

The final speaker was the meeting organiser, Joe McCall who gave an account of **meteorite Cratering - Hooke, Gilbert, Barringer and beyond**

The history of meteorite cratering really starts with Robert Hooke, who, in 1663, filled some spare unfilled space on an illustration with drawings of the cratered surface of the Moon, showing that Hipparchus crater had a pear-shape. He carried out crude impact experiments and reproduced similar craters. Nevertheless, he rejected impact origin

because he could not conceive what sort of projectile would fall onto the lunar surface. So he plumped for a volcanic explanation: apparently not aware that Diogenes of Apollonia had solved the problem of meteorites in 465 BC, though Science had not listened.

Two hundred years were to elapse before further progress was made. GK Gilbert, by then a big name in transatlantic geology, investigated "Coon Butte" or "Canon Diablo Crater", Arizona, now familiar as "Meteor Crater". Gilbert seems to have been more interested in the philosophy of scientific investigation than the subject. Despite the fact that meteoritic iron fragments had been brought in by locals, from the immediate surrounds, Gilbert exercised "Occam's Razor" in favour of a steam explosion within the Earth. He cited such explosions in Vesuvius, Bandai-san, Krakatoa and the Rhine valley 'maars', in support of his conclusion. He remained manifestly unsatisfied with his own conclusion and continued to worry the problem, suggesting that "a falling star had in some way touched the volcanic button".

Barringer in 1906, in a much more prosaic way, revived the impact explanation; this was generally accepted by the 1920's, and it is sometimes even referred to as the "Barringer Crater". Barringer spent years "digging" for the buried iron mass, without success. Surprisingly, it is Gilbert's colourful writing rather than Barringer's prosaic publication which is nowadays widely quoted, even though he reached the incorrect answer.

By 1932 more than 35 scientific papers had been published on Meteor Crater. Ives (1919) after WW1 studied the effects of military bombs and rejected impact ricocheting off at an angle because of the radial symmetry of the crater; but Gifford (1924) showed, on the basis of TNT explosions, that at whatever angle the impactor approached, the resultant structure would be almost circular: he also showed that one would not expect an impactor to survive buried an impact of that size. Later Hager (1957) argued that the crater displayed a close relationship to pre-existing geology and put a last flicker of life into the endogenic interpretation, but Shoemaker (1963), in a seminal, study incorporated the anomalous features noted by Hager in an impact interpretation which drew heavily on the "Teapot Ess" and "Jangle U" (etc.) nuclear cratering experiments.

170 terrestrial structures have now been attributed to impact, but there remain some unexplained anomalies concerning the early wholesale, extraterrestrial cratering of the Moon and Mercury. The speaker recently wrote a 4000 word entry for the Elsevier Encyclopedia of Geology on Mercury, and noted some craters irreconcilable with impact origin.

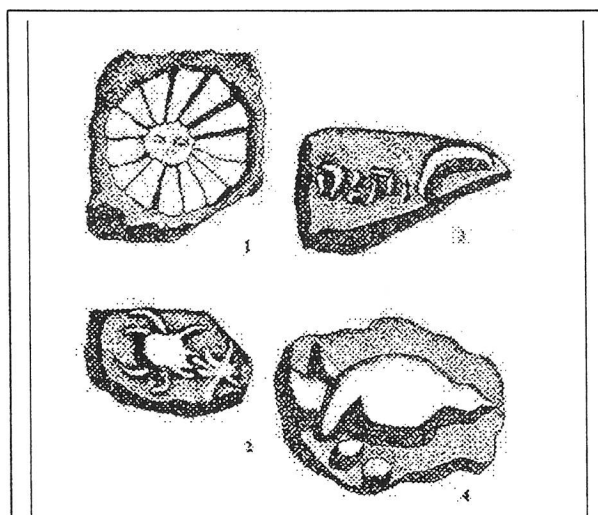
Summing up, HOGG Chairman elect Cherry Lewis, said that it had been a fascinating meeting detailing much history of which she, and many others were unaware, on a subject that is rarely thought about. She thanked meeting organiser Joe McCall for all his hard work, and Peter Tandy for arranging facilities at the museum.

After this, Sara Russell produced real examples of most of the meteorites spoken about earlier in the day, and there was much discussion around them.

.....and the next HOGG meeting

Geo-Fakes, Frauds and Hoaxes !

A meeting entitled **Geo-Fakes, Frauds and Hoaxes** will be held at the Geological Society, Burlington House, on **22nd October 2004**



Beringer's Lying Stones. (1) The rayed face of the sun. (2) A spider catching a fly. (3) Hebrew word (Adonai) and crescent. (4) A bird laying eggs, from: "Lithographiae Wirceburgensis Specimen Primum",

It is now 50 years since Piltdown Man was revealed to be a fraud. But while this is undoubtedly the most famous of all deceptions in the geological sciences, other fakes, frauds and hoaxes have also been perpetrated from time to time. Do you know of any? Would you like to reveal all?

If so, please contact the convenor, Dr Cherry Lewis, preferably by email to Cherry.lewis@bristol.ac.uk or by post to 35 Morgan Street, St Agnes, Bristol, BS2 9LG.

Papers already promised cover:

- Bishop Ussher (Martin Rudwick)
- The Moulin Quignon Fraud (A French Piltdown Man) (Patrick Boylan)
- The Water Cure - real or hoax? (John Mather)
- J.B.Hannay's synthesis of diamonds (Julian Jocelyn)
- Beringer's Fossils (Ann Lum & Paul Taylor)
- Amber fakes (Andy Ross)
- The Keeper of Geology & *Eanthropus dawsonii* (Tony Brook)
- Piltdown Man (Chris Stringer)
- The BGS fake borehole core (Adrian Rushton)

Others may include:

- The Colchester fault (Ian Higginbotham); Coquand's Joke (concerning soils & quality of Cognac!) (Jake Hancock/ Dick Selley); Whiston's new theory of the Earth (Alan Bowden)

"Sussex Pioneers" field trip

5th-6th June 2004

HOGG is proposing a field trip to Sussex for the weekend of 5-6th June 2004. The provisional programme will be:

Saturday morning

Meet at the forecourt of Brighton railway station at c.9.30am

10.00am Visit the Booth Museum for a talk & tour with curator John Cooper. This will pay particular reference to the little-known G. Holmes fossil collection

Saturday afternoon

Visit the "British Engineerium" for a guided tour at 2.30pm. There are many excellent Victorian steam engines on view (and maybe in steam!)

Free time from c.3.30pm to look around the Engineerium

Return to Hove Station

Sunday

Visit various sites associated with Gideon Mantell. Starting at the old Stein in central Brighton, the trip will take in Lewis (to see Mantell's home from 1816-1833 + memorial plaque in church), Cuckfield and Whitemans Green where the original quarry from which *Iguanodon* came, was (plaques now tell the story). On the way back a stop may be made at Clayton railway tunnel with its superb Victorian brick archway. Finally, it may also be possible to visit the Piltdown site, if time permits.

Return Brighton c.5.00pm

Cost is expected to be £30.00 for coach/minibus travel and entrance fees

If you are interested in this field trip, please contact Tony Brook by phone 01903-233418 (evenings or after 6.00pm) or e-mail anthony.brook@amsolve.com. We need some idea of numbers by the **end of April**.

HOGG Diary of Future Meetings

The new 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 History of Speleology and Cave finds
- 2005 (Spring) Field meeting in the SW of England - perhaps related to speleology
- 2005 (Autumn) Women in Geology
- 2006 History of Geoconservation
- 2006 History of Micropalaeontology
- 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.

THE MYSTERIES OF THE MANTELL MEMORIAL

Anthony Brook

In my persistent and wide-ranging search for material concerning Gideon Mantell, I came across a rare and slender volume by George Holman entitled *Some Lewes Men of Note*, published by W. E. Baxter Ltd in 1905. It must have sold well because there were new editions in 1911, 1922 and finally in 1927: in all these editions there were several pages devoted to Gideon Mantell. Indeed, the final edition comments that an extensively-researched biography of this celebrated man of Lewes was nearing completion by Dr Sidney Spokes, who was currently resident in Mantell's old house at Castle Place in the High Street. Holman concluded his synopsis of the life and achievements of Mantell by directing our attention to the memorial wall-tablet to Mantell in St. Michael's Church, only a stride or two up the hill from Castle Place, and provides a full transcription of the inscription (Fig. 1).

The only memorial we have of him in Lewes is in St Michael's Church, on a brass tablet affixed to the north wall, whereon is inscribed:-

To the memory of Gideon Algernon Mantell, LL.D., F.R.S., F.G.S., etc., who was born in this town on the 3rd February, 1790, and died in London on the 10th November, 1853, in the 63rd year of his age, and was interred in Norwood Cemetery. He resided more than 20 years in this parish, and was distinguished for his skill as a medical practitioner and for his varied scientific attainments. By his exertions the geological phenomena of the South East of England were first made known and the fluvial origin of the Wealden formation discovered and established. Notwithstanding his unceasing professional toil, he formed the most extensive and interesting private geological collection in England. This collection was purchased by the Government and deposited in the British Museum. His scientific labours are recorded in the transactions of the various learned societies of England, America, and the Continent, and in his numerous works; and his name will ever be associated with the science of his country. His memory is held in affectionate remembrance by those who were acquainted with the rich treasures of his highly cultivated mind, and experienced his skill and unremitting attention as a physician, and the warmth and generosity of his character as a friend. This tribute of love and respect to his memory, and record of the eminence attainable by self-reliance, industry, and perseverance is erected by his son, Reginald Neville Mantell, 1857.

(From George Holman, *Some men of Lewes of Note*, 1927, p.72)

This becomes extremely significant when it is realised that this artefact of Mantell memorabilia seems to have been completely forgotten or overlooked. There is a brief reference to 'an elaborate brass tablet in Mantell's memory in St. Michael's Church,

Lewes', in Lower's *Worthies of Sussex*, published in 1865, which is probably why Lower thought Mantell had died a year later than he did. It features in neither of the biographies (Spokes 1927 and Dean 1998), nor in Dean's *Supplementary Essays* (1999), nor in any article or material on Mantell in the intervening period, as far as I am aware. It seems to have slipped the collective memory, but it is still there, as part of our Mantell heritage. Why we are so oblivious of this Mantell memorial forms the paramount mystery.

The inscription presents 2 further problems, one minor and the other major. Gideon Mantell expired mid-afternoon of Wednesday, 10 November 1852, not 1853, at 19 Chester Square, Pimlico, aged 62 years and 9 months i.e. 'in the 63rd year of his age'. It, therefore, seems a little strange, if this memorial was indeed erected by his younger son, Reginald, in 1857, that Reginald could not accurately recall the year of his father's decease, in the very recent past. A dramatic family event, such as the death of a parent, is always seared deep in the memory.

The major mystery of the inscription on the plaque is the final phrase 'erected by his son Reginald Mantell in 1857', because that is an absolute impossibility. Reginald Mantell (b. 1827) was a railway engineer who served an abbreviated apprenticeship under the great Isambard Kingdom Brunel on the Great Western Railway, and managed to maintain a reasonably-amicable relationship with his increasingly-misanthropic father during the 1840's, unlike his siblings. Reginald heard of his father's death on the 2nd December whilst working as a railroad surveyor in Kentucky in the U. S. A., in a letter from his sister Ellen. He immediately resigned his position and made plans to return to England forthwith, via New York and Liverpool, arriving back at the family home in Chester Square on 4 January 1853. After arranging and overseeing the Sale by Auction of the effects of his late father's establishment on consecutive days in early May 1853, and enlisting T. Rupert Jones to complete the new edition of his father's *Medals of Creation*, Reginald looked around for suitable employment on the burgeoning railway networks of Britain and its expanding Empire. He accepted a position as railway engineer with East Indian Railway Co. on 27 October, sailed for India from Southampton on 4 December 1853, and never returned to these shores. He died of cholera on 30 June 1857 at Allahabad, during the Indian Mutiny, not quite 30 years of age. As he was resident in India from January 1853 until June 1857 (and permanently thereafter), he could not, therefore, have erected the memorial plaque to his father in St. Michael's Church, Lewes, in 1857. It might still have been Reginald's undertaking by proxy, so to speak, by benefaction in his Will. Reginald Mantell made out a Will on 23 May 1857 in India, bestowing a few miscellaneous legacies and leaving the residue of his estate to his elder brother, Walter. Apart from the absence of funds for any paternal plaque, Reginald's Will was not proved in England until March 1858, so we can definitely rule out Reginald Neville Mantell, in the flesh or from the beyond the grave.

The question then arises: if Reginald Mantell did not have the Mantell memorial plaque erected high up on the North Wall of the nave of St. Michael's Church in Lewes in 1857, then who did? And why put Reginald's name to it? The only evidence we have is the plaque itself and its eulogistic inscription. There would seem to be several conditions for this mysterious benefactor. Whoever it was, was well acquainted with the general pattern

of Gideon Mantell's life; was immensely proud of his lifetime achievements despite the odds stacked against him, such as unfortunate parentage and lack of patronage; was well aware of his outstanding work, as a skilful physician and an exemplary scientist, particularly as a citizen of Lewes; and was willing to spend a considerable sum of money on a large (5ft x 3ft) simple memorial tablet, of multicoloured brass lettering on finely-polished stone with superior workmanship, in the premier Anglican Church in Lewes. Moreover, whoever approved the inscription also had inside knowledge of Mantell's immense contribution to the innovative science of Geology; understood geological terminology, as in 'the fluvial origin of the Wealden formation'; and realised the significance of Mantell's 'private geological collection' to the nation. It has to be someone who had known Dr Gideon Mantell well over many years, someone who appreciated his personality, publications and public persona, in both Lewes and London. How many people fit these criteria? Very few: indeed, only 2 come to mind.

One candidate is Gideon's first-born, his elder son, Walter, who was expected to follow his father into the medical profession. Walter strenuously objected, and disliking his father intensely, sailed on one of the first emigrant ships to New Zealand in September 1839 to make his own life far away from all the Mantells. He never saw his father again. Gradually a correspondence developed between father and far-away son, who developed scientific interests and expertise of his own. After 1845 he began to send his father regular shipments of significant fossils of the huge extinct flightless birds of the Antipodes. By mid-century Walter had come to admire and respect his father for his palaeontological revelations and scientific acumen. Because of the vast distance between England and her furthest colony, Walter did not hear of his father's death until June 1853, more than 6 months after the event, and was furious when he learnt that Gideon Mantell's Will required him to return to England within 5 years to claim his inheritance. Walter took extended leave of absence from his job as a Government land agent in the autumn of 1855, arriving back in England after the usual half-year sea-voyage in March 1856, the first visit to the homeland for over 16 years, and that only under protest. He stayed in England for the next 3½ years, sailing back to New Zealand in October 1859. Walter Mantell was therefore resident in this country during 1857, and *could* have arranged and paid for the memorial plaque for his father. But why should he? And why put his brother's name to it, when he could so easily take all the credit? Moreover, the tone and tenor of the language seem inappropriate for a wayward son who only came to love his father after his death.

The other suspect is Gideon Mantell's closest confidant and colleague in the new and exciting science of Geology, Charles Lyell. Ever since a young Charles Lyell had knocked on the door of Castle Place on Thursday, 4 October 1821 and introduced himself, they had been geological companion-in-arms, with the greatest mutual respect, as expressed in a fulsome correspondence and Mantell's Journal. Charles Lyell was a stalwart ally of Gideon's in his bruising battles with Richard Owen in the 1840's, and empathised with all of Gideon's glories and sufferings over 30 years of close friendship. Generous of spirit, Lyell had full knowledge of his friend's scientific endeavours, and was most upset when he learnt of Gideon's unfortunate demise. But, why should a senior figure of the 'Geological Establishment', a knight of the realm, no less, become involved

in a subterfuge of attribution, when he would, surely, have been only too pleased to be publicly associated with any memorial to his late-lamented friend and colleague?

Apart from the issue of the identity of the generous donor, the primary mystery is why there is any memorial to Gideon Mantell in St. Michael's Church in the first place. Although it is Anglican, and therefore, Protestant, it is completely the wrong sort of Protestantism. Like many good and upright citizens of Lewes, the Mantell family had been Non-conformists for generations. Gideon himself was a staunch Methodist, worshipping regularly at the Wesleyan Chapel in Lewes, Brighton and London, and his family followed suit. Reginald certainly maintained the family tradition. The Mantells were Dissenters, in both politics and religion. On the other hand, St. Michael's was not only Anglican, and the Parish Church of the Establishment elite of the County Town, but, by mid-century, was being accused of becoming 'semi-papal' by its early and fervent adherence to the fashionable High-Church/Oxford Movement; a development which caused much indignation amongst its parishioners. Strangely enough, and for some unknown reason, Gideon and Reginald went to divine worship on Sunday, 19 January 1845 to St. Paul's Church, Wilton Place, Belgravia, a proximate Church frequented by the social elite. Gideon found the new-style, philo-Catholic Order of Service most distasteful, so much so that he wrote a tirade to The Times utterly deploring this wanton disregard of centuries of tradition. The memorial tablet passes no comment whatsoever on Gideon Mantell's religious beliefs, practices and observances, as if to avoid the issue, but, surely, it is the right plaque in the wrong place of worship.

The fundamental mysteries remain. Why is the Mantell memorial plaque where it is? and Who put it there? We should all be very grateful it is there at all, but it is shrouded in mysterious circumstances which require explanation.

Book Review

Hugh Miller: The Cruise of the Betsy & Rambles of a Geologist (with an introduction & notes by Dr Micheal A. Taylor) (Facsimile Reprint Pub: National Museums of Scotland, Edinburgh, 576pp, 4 maps)

Hugh Miller is probably known by name as a nineteenth century Scottish Geologist, but I suspect that his books have been read by relatively few today. If this is so it is a great pity because Miller could write, and write well. Those wishing to put my claim to the test can now do so easily by virtue of a facsimile edition of Miller's "double" volume of the Cruise of the Betsy and Rambles of a Geologist, recently published by the National Museums of Scotland.

Miller did not earn his living as a geologist. He had no formal training in the subject but certainly considered himself as such and the science certainly took pride of place in his many interests in the fields of natural history and prehistory. He enthusiastically indulged in these interests outside his work for the church as the editor of a Free Church paper,

'The Witness'. Born in Cromarty, his church interests and journalistic career took him to Edinburgh at the age of 37. Before this he had left school at an early age and worked in the local quarries as a stonemason. While at Edinburgh it was his habit to visit relatives and friends in the Inverness area and further afield in the Highlands and Western isles during the summer months. The volume now reprinted records his journeys in the north-west Highlands, Western isles, Cromarty and Orkney between 1844 & 1847.

Miller was a keen and accurate observer, a talent that he used to the full in his Highland travels. Besides his observations on geology, especially palaeontology, and natural history many of his comments and observations relate to the social conditions he found to exist in the Highlands together with comments on the condition of the church there. Of strong Calvinist views, the Church was a major factor in his life and he lived and travelled at the time of the "Disruption". This period saw the establishment of the breakaway Free Church from the Church of Scotland. His book is an entertaining mix of all his varied interests written for the public at large and not directed towards any particular group of specialists.

Geological matters, especially palaeontology and collecting, get their full share of attention. His early years as a quarry man gave him a love for the many fossil Devonian fishes that he found and whilst travelling through the Highlands he could not resist searching for them. His fish collection today makes an important contribution to the NMS collections. His interests were not confined to the ORS and while in the Western Isles he made important contributions to the understanding of the local Jurassic.

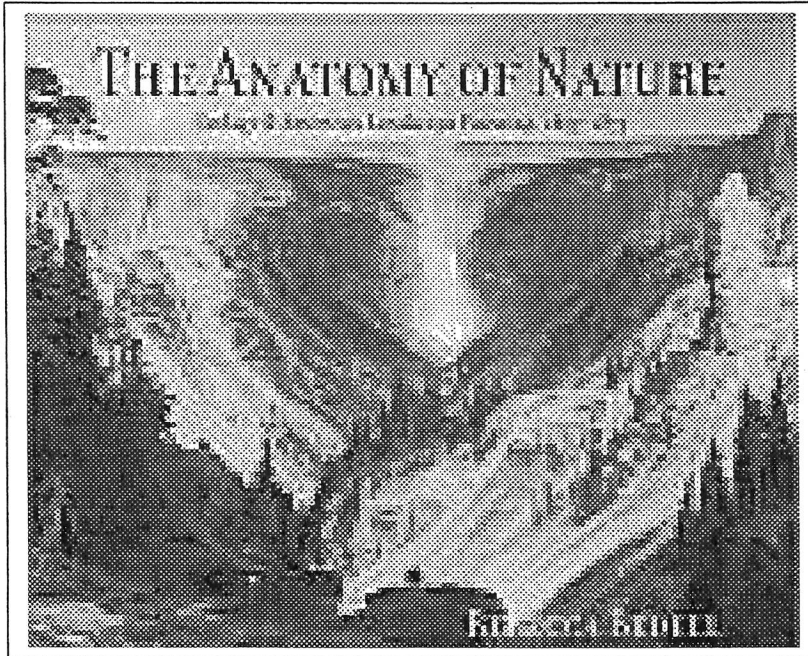
Miller was not in a position to make big advances towards the establishment of the then new science of modern geology. He was familiar with the works of the likes of Murchison but he was self-taught and was unable to meet and mix with many other geologists and palaeontologists of his time. The Geological Survey of Scotland was not yet established. His writing and collecting provided interesting new information to stimulate those of the general public who were caught up in the surge of interest in the natural sciences in the mid-nineteenth century. As Michael Taylor points Miller was not writing a precise scientific diary.

Much of the "added value" of the present reprint lies in the invaluable Introduction and Notes of Dr Michael Taylor. These give a full sympathetic background to the work, life and times of Miller and the setting of his life interests in the Highland background. Those geologists who know of Miller but have never read any of his work and who are sufficiently inquisitive to learn more should buy this edition and correct that omission. They will not regret it.

John Martin

For your bookshelf ?....

The Anatomy of Nature: Geology and American Landscape Painting, 1825-1875, by Rebecca Bedell, Pub: Princeton University press, 31 colour plates, 55 b/w illustrations, 2003



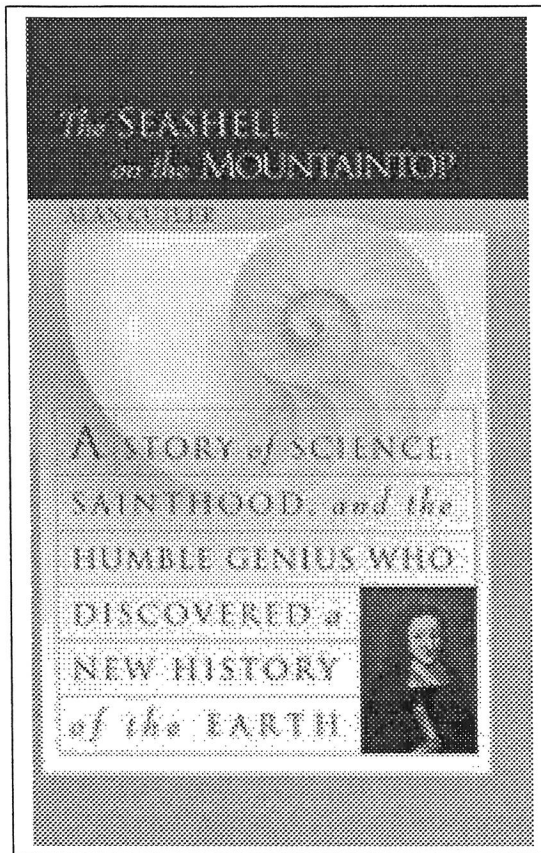
Geology was in vogue in nineteenth century America. People crowded lecture halls to hear geologists speak, and parlor mineral cabinets signalled social respectability and intellectual engagement. This was also the heyday of the Hudson River School, and many prominent landscape painters avidly studied geology. Thomas Cole, Asher Durand, Frederick Church, John Kensett,

William Stanley Haseltine, Thomas Moran and other artists read scientific texts, participated in geological surveys, and carried rock hammers into the field to collect fossils and mineral specimens. As they crafted their paintings, these artists drew on their geological knowledge to shape new vocabularies of landscape resonant with moral, spiritual, and intellectual ideas.

Rebecca Bedell contributes to current debates about the relationship between art, science and religion by exploring this phenomenon. She shows that at a time when many geologists sought to disentangle science from religion, American artists generally side-stepped the era's more materialist science, particularly Darwinism. They favoured a conservative, Christianised geology that promoted scientific study as away to understand God. Their art both was shaped and sought to preserve this threatened version of science. And, through their art, they advanced consequential social developments including westward expansion, scenic tourism, the emergence of a therapeutic culture, and the creation of a cohesive national identity.

This major study of the Hudson River School offers an unprecedented account of the role of geology in nineteenth century landscape painting. It yields fresh insights into some of the most influential works of American art and enriches our understanding of the relationship between art and nature, and between science and religion, in the nineteenth century. It will attract a broad audience of art historians, Americanists, historians of science, and readers interested in the American natural landscape.

"The Seashell on the Mountaintop: A story of science, sainthood and the humble genius who discovered a new history of the earth", by Alan Cutler, Pub: William Heinemann, London, ISBN 0 434 00857 5, Price £14.99.



The Seashell on the Mountaintop is the remarkable story of the 17th century Danish scientist Nicolaus Steno, the first man to claim that the earth's past was chronicled in its layers of rock, displacing the Bible as the sole authority on the subject, forever changing Western civilisation's ideas of history and nature, and yet who ended his life as a Catholic bishop.

Dubbed the 'founder of modern geology' by Stephen Jay Gould, Steno laid down the principles of a new science that introduced 'deep time' into human consciousness. The existence of marine fossils on land far from the sea and high in mountains, demanded a far longer history for the earth than the roughly six thousand years suggested by the Bible. The implications for Steno's work were not fully understood for over a century; a convert to Catholicism, he himself dropped his geological studies to become a priest. He later became a bishop and in 1988 was beatified by Pope John Paul II.

Alan Cutler tells the story of this passionate and fascinating man, exploring his contributions to geology and his remarkable ideas on science and religion. Steno's work was eventually to transform Western ideas of time, creating not only a long past for the earth, but also a possibility of a future that was not about to be cut short by Armageddon. The influence of this forgotten man was enormous; in *The Seashell on the Mountaintop*, Alan Cutler for the first time gives him his due, in this beautifully written and erudite work of narrative non-fiction.

(from the flyleaf)

Hugh Miller 2002 Conference Proceedings

Celebrating the life and times of Hugh Miller. Scotland in the early 19th century, ethnography and folklore, geology and natural history, church and society (L. Borley (ed.) , 2003; Cromarty Arts Trust, Cromarty, and Elphinstone Institute of the University of Aberdeen, Aberdeen; ISBN 0 906265 33 9), p.352, £13.50

This is now the most important single reference (other than his own writings) on Hugh Miller. Much of it is on geology.

Hugh Miller (at the Theatre!)

"Hugh Miller", the text of a one-man play by Stuart Conn . It was revived for the bi-centenary in 2002 after its original award-winning performance at the Edinburgh Festival Fringe in 1988. It is set on the last night of Miller's life and includes, amongst other things, his thoughts on nature.

Matching pamphlets on cream art paper £2.50 each post free. Available from : Diehard books, 91-93 Main Street, Callander, FK17 8BQ Publisher prefix: 0946230
Trade terms: Bookshops 35%. Libraries 10%. All orders sent post free.

How many geologists have a play written about them?.....

"....so will ich mich bei kuenstlichen Erfahrungen nicht aufhalten" Franz Coelestin Freiherr von Beroldingen 1740-1798, by Gudrun Wille, pub: Schriftenreihe des Stadtarchivs und der Stadtbibliothek Hildesheim, 2003. ISBN 3-931987-10-8 (in German)

The priest Franz von Beroldingen (1740-1798) in local literature, wrote hitherto especially as a friend of the Baron about stones, also the discovered of the Itzum sulphur spring , and listened to the small circle of the enlightened in the Hildesheim cathedral. He lived 22 years on his cathedral farm in Walshausen, that under his hand it became a model farm. There he completed his art and at that time famous large mineralogical collection, there he carried out chemical research, he was an author and artistically active. Franz von Beroldingen counted Albrecht von Haller as a friend and Alexander von Humboldt as an opponent. His observations on the origin of the coal deposits secured the autodidactic posthumous fame of natural historians. His satirical writings over the church, in its time causing a quarrel between Emperor Joseph II and the Vienna Cardinal Migazzi and over the nobility (1793 anonymously published) still gains notice today.

In this book, a overall full appreciation of the person and work of Franz von Beroldingen is given for the first time.

(Free translation from the cover)

...can you help ?

This is a request from Montse Vehí, a geologist from Spain and the secretary of a journal of Earth Sciences Teaching ("Enseñanza de las Ciencias de la Tierra").

In his own words:

"Our journal is preparing a monograph about Hutton. Candido Manuel Garcia Cruz, who is a member of INHGEO (International Commission on the History of Geological Sciences), is preparing this monograph.

Two summers ago I visited Scotland. I fell in love with some didactic materials that I found in Edinburgh concerning Hutton Rock and Hutton Series. I suppose there are more materials about that in other zones of the UK. Could it be possible for any of your members to write an article for us about (just a suggestion): "Hutton Geological landscape (or sites)". This article could describe Geologic outcrops that Hutton used to prove his theories. We think that a nice work could be to compare actual photos and ancient pictures and thus, try to sum up the more relevant aspects the geology of England."

Would anyone be willing to compose an article for this monograph?

If you can please contact Montserrat Vehi directly (by e-mail at: montserrat.vehi@udg.es) or by post to :

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