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This is my first letter as the new President of the GA and I am delighted and honoured to be serving the Association as only the third female president in its history and particularly on the happy occasion of its 150th anniversary. Like the Past President, Professor Mike Benton, I am also a vertebrate palaeontologist but this time specialising in Quaternary and environmental change, and with particular interests in early human evolution and the Palaeolithic occupation of Britain. I am based at Royal Holloway, University of London, in the Department of Geography. I would like to take this opportunity to thank Mike, the ever-helpful Sarah in the office and my colleagues on Council for their support as I take on this important role. Looking back at the 'roll call' of former officers of the GA, one cannot help but be in awe of the history of our society and of the tremendous energy that has gone into making it the success it is today. I hope to build upon this good work and, along with the others on Council, would therefore welcome any ideas or suggestions you may have for improving the service we can offer you. With this aim in mind, you will see that we have enclosed a short questionnaire with this issue of the Magazine, asking for your views on various aspects of the GA, including finding out what you value most about the Association. Please do take a few moments to complete the survey (it can also be done online via the GA website - http://www.geologist-sassociation.org.uk/) - there is a £30 book token available for the first returned form drawn out of a hat!

As you have heard in previous issues of the Magazine, this is a very exciting year for the GA and numerous celebratory projects and new initiatives are already completed or well underway. One of my particular interests is improving the public understanding of science and we have much to be proud of in terms of what we are offering the wider community, from the activities of Rockwatch to Your Planet Earth, a series of tailor-made lectures created especially for schools. I would also like to welcome our new Editors - Professor Susan Marriott for the GA Guides and Professor Jim Rose for the Proceedings of the Geologists' Association so look out for new titles and more cutting-edge journal articles in the future. Dates for your diary are, of course, the Gala Dinner and the Festival of Geology on 31st October and 1st and 2nd November respectively. These events will be a wonderful opportunity to celebrate our Association and I look forward to meeting as many of you as possible then.

Danielle Schreve

President: Danielle Schreve

Executive Secretary: Sarah Stafford
Curry Fund Report

Given that this is the 150th anniversary of the GA and some 20 odd years since the inception of the Curry Fund, it seems a good time to reflect for a moment, on the wonderful opportunity that the Association has had to support an enormous range of geological initiatives through its Curry Fund. Thanks to the generous bequest of Dennis Curry and the wisdom of the Council at the time in the setting up of this Fund, the millionion pound of funding body does. The Curry Fund has supported many initiatives that might otherwise not have been funded, simply because it has much greater freedom than more academic funding bodies. Not only have we supported projects in England, Scotland, Northern Ireland and Wales, but also in France and Eastern Europe. We have championed many geocentres, projects and initiatives to support researchers, both Council meetings (and many pre-participants to the GA's local groups and affiliated societies to update their displays and bring members to our events in various ways and contribute to membership.

The GA has a fantastic archive of photographs, which have been kept under so well by Marjorie Carreck in her home (see some of them in Susan Brown's article on this page). Council agreed that Dr. Jonathan Landworth to look into ways of preserving the archive and future digitisation and cataloguing of the photographs. He commissioned an archivist to who the photographs and suggest what should be done. An initial report was presented to Council and it was agreed that Dr. Landworth would investigate funding and implementation of the report's recommendations.

The organisation of the Festival of Geology in November is going well. Many Local and Affiliated Groups have been involved in the organisation of the Festival. The 150th Anniversary Dinner before the Festival should be memorable. See notice on page 4. It was an excellent opportunity to celebrate the Festival and bring members to our annual meetings.

And, at its June meeting, 17 applications were received of which 6 were from Local or Affiliated Groups to enable them to support our GA 150 Festival of Geology in November at University College London. The application from the Geological Society for the funding of geological activities in the Thamesmead Camp Quarry was deferred pending supplementary information. The £1500 was awarded to Rockwatch towards its forthcoming conference for 2008 (Years 8 and 9). The aim of the conference, hosted jointly with the Geological Society, is to encourage more young people to study science at school and university.

John Crocker General Secretary

GA ENTERPRISES LIMITED

HELP!

An appeal for members to bring us "Bring and Buy" items to sell at our Sales Table at The Festival of Geology in November. Help us in our efforts to raise money for the Baker-Arber fund for field work, one of the BGS, the other from Birmingham University were referred to the Baker-Arber fund for support as they were unable to consider funding this. The Baker-Arber fund for support as they were unable to consider funding this. The Baker-Arber fund for support as they were unable to consider funding this. The Baker-Arber fund for support as they were unable to consider funding this.

Mrs Sue Jacobs
Reconstruction of SE Asia at 20 Ma shows the complexity of forces acting on the region as the collision developed.

From the depths: How Stalagmites Reveal Quaternary Climatic History
Ian Fairchild, University of Birmingham
October 3 2008
Festival of Geology - see back cover
Friday October 31st - Local groups and Affiliated Societies meeting Burlington House 1:30 for 2:00
Grand Festival 150th Anniversary Dinner
Saturday November 1st, University College, Gower Street London, Local Groups, Affiliated Societies exhibitions, Rockwatch, Rock & Mineral dealers, Books, Lectures and much, much more

FESTIVAL OF GEOLOGY LECTURES
Saturday 1st November 2008
11.00 - 11.45 a.m - Bill McGuire
SEVEN YEARS TO SAVE THE PLANET
While the IPCC (Intergovernmental Panel on Climate Change) 4th Assessment Report paints a pretty bleak picture of the future, the scariest thing about it is that it may not be scary enough. New research points not only to higher temperatures, bigger storms and more floods, but to a world in which melting polar ice drowns coastal towns and cities across the planet, and the crust itself joins in with more earthquakes, submarine landslides, tsunamis and volcanic eruptions. Is this a world we wish to bequeath to our children and their children? If not, we may have less than 10 years to do something about it.
12.00 - 12.45 p.m - Duncan Wingham -
CLIMATE CHANGE
2.00 - 2.45 p.m - Adrian Jones -
PLANETARY GEOLOGY
3.00 - 3.45 p.m - Mike Benton
NEW WAYS OF LOOKING AT DINOSAUR EVOLUTION
Dinosaurs existed on the Earth for 160 million years, so how successful were they? The group diversified into an amazing range of forms through the Triassic, Jurassic, and Cretaceous periods. So far, most studies of the patterns of dinosaurian evolution have been based on a qualitative or narrative approach. New studies at the University of Bristol, using quantitative techniques from molecular biology and other fields, confirm two key points: (1) dinosaurs did not do enormously well in their first 25 million years, in the Late Triassic, and (2) dinosaurs did not form a part of the Cretaceous Terrestrial Revolution, some 120-100 million years ago, when other groups were adapting to take advantage of ‘modern’ groups such as flowering plants and social insects.

FESTIVAL OF GEOLOGY FIELD TRIPS
Sunday 2nd November 2008
Advance booking required
To book on the following Festival field trips, please send your name and contact telephone number, the Field trip you wish to book and a cheque payable to the Geologists’ Association, £5 for each person, per trip to the GA office by Friday 24th October 2008.
Field trip 1
Geology of London Leader Eric Robinson
MEET: Eric 10-10.30 in the front quad University College. Based around University College London and the Euston Road perhaps getting as far as the British Library. Age no limit, pace slow. This walk will be a couple of hours and will end with a coffee at the British Library at around 12 - 12.30.
Field trip 2 Leaders Janet Phillips & Graham Williams
"TIME and TIDE..." - THE BARGATES of GUILDFORD and GODALMING - SURREY'S COAST INVADED!! - THE BARGATE WASH ??!! THE SAND WAVES - WE’LL WAVE BACK !! HOW MANY "BARGATES" ARE THERE ?
MEET: 10.00 am at St Martha’s Half penny Lane car park on the WEST side of St Martha’s Hill. TQ 022 474
TRANSPORT: This trip is car based; we go to 4 locations, and drive about 15 miles; parking is free.
Field Trip 3 Leader Diana Clement
Chafford Hundred (formerly Chalk Pits)
MEET: 10.30 at the Chafford Gorge’s Visitor Centre, Drake Road, Chafford Hundred, Grays Thurrock RM16 The trip will finish between 3-4 pm.
Other Travel options: There is a train to Chafford Hundred Station.
WEAR: Clothing suitable for the weather. Bring waterproof footwear with a good tread suitable for normal country walking.
ALSO: Please bring 1: 25,000 map no 145, or 1:50,000 map no 186. Bring hand lens.
Field trip 4
Mullard Space Science Laboratory
Holmbury St. Mary, Dorking, Surrey, RHS 6NT
Time: 2.30 pm
Maximum number 100 - all ages welcome.
UCL’s department for Space and Climate Physics, the Mullard Space Science Laboratory, has been doing space research for over 40 years. Come along to find out about our work in Solar System exploration, what the life of a space scientist involves and take part in an observing session from our site in the Surrey Hills.

Spread the word..... Give the poster with this magazine on the Festival to a friend or to your local library

Crystals amongst the flowers: Mother Nature’s Secrets at the Monte Palace Tropical Garden, Funchal, Madeira

The Portuguese island of Madeira (located at 32° 44’ N 16° 58’ W) is the largest of seven islands which form a small archipelago in the north-eastern Atlantic Ocean. First known to the Romans (the “Purple Islands” of Pliny the elder’s Natural History), then rediscovered by the Portuguese mariner João Gonçalves Zarco (1390-1467) in c. 1420, it lies at approximately the same latitude as Rabat in Morocco and roughly on a line between the Canary Islands to the south-east and the Azores to the north-west. It has an area of about 740 km², rising to 1862m at Pico Ruivo, its highest point (Fig 1), and is edged by spectacular sea-cliffs, which reach a height of 580m at Cabo Girão (Fig 2). It has a year-round pleasantly warm climate (16-25°C); beautiful, rugged, scenery; an abundance of banana plantations; and cultivated flowers (especially orchids) at all seasons; botanical gardens of all shapes and sizes; and the possibility of levada walking, bird-watching, sea-fishing and even golfing. Its inhabitants are very friendly, generally English-speaking where tourists are encountered, and the food and wines are excellent.

All these factors combine to make the island a popular holiday destination for many British tourists. Indeed, Charles Lyell (1797-1875) stayed for two months on Madeira in the winter of 1853 and spring of 1854 to examine its geology. As opposed to the hypothesis of the German geologist, Leopold von Buch (1774-1853), formed when he visited the island in 1815, that it resulted from a single explosive upheaval, Lyell correctly concluded that it originated in a long series of volcanic eruptions. It is now known that it consists of a single volcanic edifice originating from the Madeira mantle plume, the various stages of eruption ranging from 5.57 Ma to 6020 years B.P. Today, the deeply dissected topography of the island reveals superimposed layers of lava flows and air-fall deposits, the whole often cut by dykes. Lava tubes and a marine limestone (now at 380m elevation) can be seen at São Vincente on the northern coast.

In the midst of all this, a cable-car can take you from the centre of the capital, Funchal up to the beautiful 7ha Monte Palace Tropical Gardens, located in the natural amphitheatre formed by the hillsides above the town. (Those who do not like being suspended at height can also get there via a local bus or by very reasonably priced taxis). Originally created as the grounds of the summer residence of the British Consul, Charles Murray c. 1773, it later became an hotel in 1897 then, from 1943, the offices of a financial institution. In 1987 it was bought by Comendador (Commander) José Manuel Rodrigues Berado, a wealthy Madeiran businessman, stock investor and patron-of-the-arts, and was donated by him to his Berado Foundation, established to undertake philanthropic work. Not only were the gardens restored, after being essentially derelict for 40 years, but two of his interests are reflected in the Monte Palace Museum (Fig. 3), opened in 2004, located close to the main entrance to the garden. On its upper two floors, the museum houses Paixão Africana (African Passion) a magnificent collection of soapstone sculptures (Fig. 4), made since the early 1960s by artists from the Tenganenge community, Zimbabwe.

On its lowest floor, are revealed Segredos da Mãe Natureza (Mother Nature’s Secrets). This is a stunning exhibition of about 700 geodes and mineral specimens, mainly from Rio Grande do Sul and Minas Gerais in Brazil (although others come from South Africa, Peru, Portugal, Argentina, Zambia and North America) taken from a collection of about 1000 specimens built up by António and Elídio Leite at Cullinan-Pedras Brasileiras in São Paulo, Brazil, over a fifteen-year period. Unlike many such exhibitions, where the specimens are mounted behind glass, these are all shown in such a way that they are more immediately accessible to the viewer (Fig. 5). Furthermore, the exhibit is unusual in that, both in their collection and display, the specimens are considered primarily as aesthetic objects in their own right, rather than simply scientific catate minerals solely of educative value. Catalogues of both exhibitions (with text in Portuguese and English printed on opposite pages) may be purchased at the small shop in the gardens, or by mail-order (see below) for those who cannot get to Madeira. The catalogue for Segredos da Mãe Natureza, with which we are concerned here, is a coffee-table sized, soft-bound, book (27cm w x 30cm h) of 167 pages. The first 55 contain a clearly-written introduction aimed at the general public, by a former scholarship-holder of the Berado Foundation, the geologist, Dr. João Baptista Pereira Silva of the Centro de Investigação “Minerais Industriais e Argilas,” Fundação para a Ciência e a
José Berado (Fig. 9), a native of Portugal, was born in 1944. He left school at 13 and worked in a local winery, but wider horizons beckoned and when he was 18, he followed a time-honoured route for Madeiran expatriates, travelling by ship to Mozambique (then a Portuguese colony) where he stayed in Lourenço Marques for six months. In 1963, he moved to Johannesburg, South Africa, and on to the Orange Free State where he set up in the horticulture business, selling vegetables to the mines, and started learning English and the African dialects, on the path to becoming an entrepreneur. Having returned to Johannesburg, in 1978, when the mining industry was in recession and gold mines and refineries were going bankrupt as a result of the falling price of gold, he established Egoli Consolidated Mines Ltd., which specialised in extracting gold from mine-waste which had hitherto been ignored, on the assumption that the price of gold would eventually rise again. His intuition was of course correct, and his company later expanded into diamond mining as well. It was during this period that he visited Zimbabwe and his interest in mineral-collecting began.

Having had a long-standing interest in contemporary art, in the early 80s he established an international art collection in South Africa. Since returning to Portugal in 1986, his business portfolio has expanded to include investments in the hotel industry, media, manufacturing, financial institutions, telecommunications and vineyards (harking back to his youth, wine-making is another of his passions). He established the Berado Foundation, which grants scholarships to Madeiran students wishing to study elsewhere (Silva was a beneficiary of this programme). His art collection was moved to Portugal and formed the nucleus of the Sintra Museum of Modern Art, opened in 1997 in the town of Sintra, northwest of Lisbon, and the Berado Collection Museum at the Centro Cultural de Belém in Lisbon in 2006.

So those who visit Mother Nature’s Secrets and the beautiful gardens in which the exhibition is housed, have to thank the vision of one of Portugal’s most outstanding personalities. His love of the aesthetic is well expressed in his introduction to the catalogue: ‘I feel that each piece presented to you here is a way of sharing nature’s secrets. Every time I enjoy looking at these minerals in fascination, I am surprised by the perfection and detail of such treasures. This immense variety of colours, forms and sizes is a perfect example of Mother Nature’s splendour and magnificence… Each of these unique exhibits deserves special attention, not only because of its format and chemical composition, but also because of its rarity and natural beauty.’

Even if you cannot get to Madeira to see the gardens and the exhibition itself (a visit which you would certainly enjoy), the catalogue is also a pleasure. The details are as follows: Museu Monte Palace, Segredos da Mãe Natureza Mother Nature’s Secrets, ISBN 972-99256-1-5, price 25 Euros on-site or 35 Euros by mail-order to Europe, including postage and packing. It can be ordered from: Museu Monte Palace, Caminho das Babosas nº. 4-A, 9050-228 Funchal, Madeira, Portugal. Tel/fax +351 291 784 756; e-mail: museu@montepalace.com. Anyone interested in finding out more about the collections should look at the websites: www.montepalace.com and: www.beradocollection.com.

Richard J. Howarth
Past, Present and Future - an idiosyncratic look at the history of the GA

This article is a summary of my Presidential address of 3rd May 2002. The subject I chose binds us all in a common interest - the Geologists’ Association. In 2008 the GA is celebrating its 150th anniversary, so this seems a good time to look back and see how the Association has developed and changed, or not, since 1858.

The spur for the formation of the Association was a letter that appeared in the Geologist in August 1858 from a W. J. Haywood, headed “Proposition for an Association of Amateur Geologists” though curiously, no trace of its author has ever been found. However, three members of the Islington Literary & Scientific Society rallied to the call and along with interested others formed a committee and, on 2nd December 1858, framed resolutions and the name “The Geologists’ Association” was proposed.

At the first Ordinary Meeting, in January 1859, there were 200 people present. President Toultin Smith concluded his address “...let me call upon each to do what he is able towards collecting well-investigated facts and bring these before us, so that we may compare them, and, after a fair sifting, add them to the common stock of human knowledge. We shall thus accomplish a work, the value of which will soon become felt, and which will satisfy ourselves and those who are watching us, that the Geologists’ Association has not been formed in vain.” It was agreed that a prospectus should be printed and circulated, but it was never published in either the Minutes or the Proceedings. The only record seems to be in the presidential address of 1880, by Professor T. Rupert Jones. I found this fascinating, adding:

...Let me call upon each to do what he or she is able towards collecting well-investigated facts and bring these before us, so that we may compare them, and, after a fair sifting, add them to the common stock of human knowledge. We shall thus accomplish a work, the value of which will soon become felt, and which will satisfy ourselves and those who are watching us, that the Geologists’ Association has not been formed in vain. It was agreed that a prospectus should be printed and circulated, but it was never published in either the Minutes or the Proceedings. The only record seems to be in the presidential address of 1880, by Professor T. Rupert Jones.

Unlike the Geological Society, which did not admit women to membership until 1919, the GA was egalitarian and admitted women from its inception. However, it was 114 years after the Association had its first woman President – Muriel Arber – and 28 years later its second and now a woman President in the 150th year! There have been changes, but by and large, the GA is faithful to the early aims and objectives of its founders.

The Ordinary Meetings, originally for the promotion and progress of the natural sciences, were held in London - nothing changes. Now, 150 years on, I think we would all agree that the GA was not formed in vain. There have been changes, but by and large, the GA is faithful to the early aims and objectives of its founders.

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This was subsequently the subject of a BBC Horizon television programme which has since been repeated in the 29th August 2001 the Independent carried the headline “Mega-Waves could hit coast of Britain. Scientists will travel to Alaska to collect evidence for the largest tsunami in history”, a BBC Horizon television programme which has since been repeated.

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1901, came the first excursion to the Boulonnais in 1878. Then, in 1889, the GA began a week-long summer excursion to the Continent (with First Class Carriages). In his 1909 Presidential address Professor Watts commented that, "it is the field excursions which mark off the Association from other bodies, attract to it its large membership, form the link between town and country and knit together its members in closer friendship than is the case in any other institution." I would endorse that today. A skeleton programme ran during the two World Wars. Now, in the 21st century, there are many more Field Meetings in the GA Calendar throughout the UK and Europe. With at least one per month and often two or more there is something for everyone and, combined with those of our Local Groups, barely a week goes by without the opportunity to attend a Field Meeting somewhere within our shores. But, perhaps the major change has come with the advent of cheap, long distance air travel so that now, it is an excursion to Texas or the Sahara, Alaska or Tibet, New Zealand, South America or India or Thailand, that whets Members’ appetites.

Transport can still be a problem (see picture below). The Annual Reunion (now incorporating the Festival of Geology): One of the early objects of the Association was to bring members together to compare notes and help identify each other’s specimens. It began as a social event, an annual Conversazione, held each November, first in 1863. It lapsed until 1877 but since then, apart from the war years, has occurred without a break. For a time it was held at Chelsea College and more recently at UCL. The first move of the Reunion away from UCL in recent times was to Brighton as part of our Reunion away from London from time to time and it was successfully held in Liverpool in 2001 and 2007 and in 2004 in Cardiff with the South Wales Group as hosts. Because of the national spread of our Local Groups and Affiliated Societies, it is difficult for all of them to be at any one event, so, by judicious choice of venue, we can ensure a different mix of Groups each time we move away from London and continue the success we have already experienced. Many groups who had not met before have subsequently held joint activities and I am hopeful that this will occur more frequently.

The Library of the Association lacked a permanent home during its early years, and the library was peripatetic until 1907, when a permanent agreement was signed with University College London (UCL) to house it there. Apart from a move to Hertfordshire during World War 2, it has remained at UCL. The library has benefited from many bequests of books and maps and today boasts a fine map collection that Members may borrow for use in the field. The early growth of the library was enhanced by a system of exchanges for the PGA with publications of similar societies throughout the country and later throughout the world. This has been of immense benefit to Members and the GA, giving worldwide exposure to the Association and its publications. There have been some 108 exchanges in the past, though this is likely to be reduced to keep rising costs at bay.

I think that the Library is one of the best perks of GA Membership. It gives Members access and borrowing rights to all the CCL libraries, including the University of London Science Library. Through interlibrary agreements and prior arrangement, Members have access, (for on site reading only), at university libraries throughout the country. We are also fortunate to have our own GA Librarian, who can offer advice and information.

Field Meetings began in 1860 with three one-day excursions. The Maidstone excursion in June was to inspect the quarry in the Hythe Beds where the type specimen of Iguanodon mantelli had been found in 1834 - the GA keeping abreast of new discoveries. The success of these excursions gave encouragement for them to increase in number and in length. The first two-week summer excursion to the Continent was to the Boulonnais in 1878. Then, in 1901, came the first excursion to the Auvergne and in 1911 there were two long excursions - to the Scottish Highlands and to Norway.

The enthusiasm for those early Field Meetings meant that there were often sixty or more on them and special trains ran for the event (with First Class Carriages). In his 1909 Presidential address Professor Watts commented that, "it is the field excursions which mark off the Association from other bodies, attract to it its large membership, form the link between town and country and knit together its members in closer friendship than is the case in any other institution." I would endorse that today. A skeleton programme ran during the two World Wars. Now, in the 21st century, there are many more Field Meetings in the GA Calendar throughout the UK and Europe. With at least one per month and often two or more there is something for everyone and, combined with those of our Local Groups, barely a week goes by without the opportunity to attend a Field Meeting somewhere within our shores. But, perhaps the major change has come with the advent of cheap, long distance air travel so that now, it is an excursion to Texas or the Sahara, Alaska or Tibet, New Zealand, South America or India or Thailand, that whets Members’ appetites. Transport can still be a problem (see picture below).

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Changing times: The early aims and objects have stood the test of time, modified as necessary. Later ventures, like the Field Guides, the Curry and Rockwatch, have been added to the GA’s activities, some by choice, others first upon it. The Curry Fund supports a huge range of geological initiatives that might otherwise find funding difficult. It has brought the world of geology into the public domain in a way that no other grant giving body has done. Rockwatch provides geological events and a magazine for young people. The Association keeps in touch with contemporary issues and has embraced change when necessary as, for example, with this magazine - evolved from the Circular.

Throughout its history the GA has had an amazing propensity for survival. What has contributed to this success? It does not have a large membership but seems to have served its members well. There is tremendous Member loyalty, so, we must be doing something right. But the age profile of the Membership is skewed and we must try to redress that. With Rockwatch now part of the Association and with initiatives for students, we have made a start. I hope, in this idiosyncratic review, I have encouraged you to think about the Association, to help build on its successes and to encourage you, the Members, to think about how to increase the Membership, and how you would like to see it develop in the next 50 years.

Susan Brown
The June Lecture by Dr Andrew Fleet, of the Natural History Museum
Natural concentration: Mineralogy at the Natural History Museum - more than an Earth’s Treasury

Those of us who some 50 years ago had been puzzled to consult a sensational reference collection of minerals in a museum otherwise full of stuffed animals, rather than in the quite separate Geological Museum next door, now had some clarification from Dr Andy Fleet’s lecture. He explained that as part of the Sir Hans Sloane collection, it had initially formed the core of British Museum in Bloomsbury. When the magnificent Natural History Museum was opened, in 1881, it found a logical new home, presumably before the Geological Museum was thought of. Of course, the two institutions have coalesced.

The July Lecture by Professor John Luddon of the British Geological Survey
What’s under our feet, and how do we best use and protect Britain’s substructure?

Professor Luddon explained that the BGS is the principal provider of the UK’s geological information about its rocks, soils & groundwater, importing this information to government and commercial stakeholders as well as to the general public (whose “what’s under my house?” enquiries yield answers ranging from forgotten landfill sites to the rather more serious Radon gas.)

The Geological Ordnance Survey was founded in 1835, and ten years later an Act of Parliament tasked it with a complete survey of Britain and Ireland - with completion now anticipated by 2012. Its nearly 800 employees are based mainly in Nottingham, but with a sizeable contingent in Edinburgh. 70 geologists still conduct field mapping, now using modern methods: the traditional folded map is replaced by voice notes recording on a Sat-Nav system, while the surface maps are now concentrated on the surface rocks, and are distributed in a more systematic way than the former “sheet numbers” delineation. Strategically the thrust has been shifted from resources to environmental factors.

The BGS is now a part of NERC (National Environmental Research Council) with an annual working budget of around £55 million, half of which comes from government and one quarter from commercial sources, and Luddon reflects that some of the hardest subjects to finance are often the most vital.

In the field of Research, he says that the BGS can manage large applied science projects better than the academics (a frisson in the audience was quelled by his assertion that he was once just such an academic). He added that the Universities are much better at the pure esoteric research, and surveying and monitoring projects bring the BGS into collaboration with Research Centres & Universities.

He listed a broad list of applied geoscience projects, which include Carbon Capture & Storage, Renewables, Clean Coal, Radioactive Waste, Pollution, Coasts, Aquifers, and Erosion & Landscapes.

He also mentioned some of their large integrated investigations, which include the collapse of the British Ice Sheets, Integrating water drainage information, the Central Valley of Scotland, the Olympic site and the Thames Basin integrated project. Shallow sub-surface models are used to clarify the working and the results of these.

The BGS is the drilling operator for the Arctic Coring project. This has been negotiated at around £12 million, though the cost has risen steeply, following the subsequent increases in the price of oil and of materials.

They also hold the Sleipner License, which includes a study of putting the CO₂ back into the ground, into saline solutions in sandstone layers above the horizon from which oil has been extract ed. As a guide, Professor Luddon explained that re-dissolving 60% of the CO₂ represents a worthwhile return.

Some informative work has been done in examining past records of CO₂ levels against global temperature, in the Paleocene/Eocene margin. An interesting project involves detailed sorting of the 20 years of records following the evacuation of the wealthiest part of the Island of Montserrat. Successive volcanic collapses have been related to the hydrogeology. A dome builds up and then collapses, with the lava flowing down and destroying the major towns.

A number of intriguing monitoring projects include the use of electrical resist ance tomography to track the mix interface of Salt & Freshwater. This has the potential of servicing worldwide applications, directly from the BGS HQ in Keyworth.

Knowledge Transfer is a major preoccupation, representing between 20 and 25% of the total budget. Our past remissions of discords in lithology at the margins of adjoining sheets is stirred up, leading to the challenge: “Is the Geology Harmonised?” An initiative titled “One Geology” aimed at making geophysical information of the top km of the earth’s crust interchangeable across the world is shortly to be launched in Oslo. The BGS has clearly come a long way from the days of plus-fours and notebook.

Tony Iles

important clues were in the title of Dr Fleet’s lecture, however. The collection clearly justifies the sobriquet of an Earth’s Treasury, with besides the unrivalled systematic collection, the gradual accretion of sensational specimens and items - such classics as the Lutrope gold nugget (from Australia 1835) and the highly significant Parnallee meteorite, that landed in India just two years later, as well as curios like a plaster cast of the uncut Koh-i-nor diamond (for which some say the cut stone is on extended loan to the crown of England).

The really unexpected information was of the ongoing work of their very high-powered team of scientists, and Professor Luddon no prisoners with his lightning review of some of their recent and current research projects, mostly heavily based on the mineral collections. He described many of these as analysing processes of “natural concentration” of the minerals - ranging from studies of the origins of the materials of the early solar system, through specific mineral processes at plate margins, and the highly complex formation of mineral ores, to the seriously applied subject of the role of minerals in pollutant transport.

Tony Iles
CIRCULAR No. 976 SEPTEMBER 2008

PLEASE NOTE THE FOLLOWING INFORMATION FOR FIELD MEETINGS ENQUIRIES & BOOKINGS

Geoff Swann organises day and weekend meetings in the UK. Michael Ridd is responsible for overseas and longer excursions. Sarah Stafford at the GA office is responsible for bookings, payments and general administration. You must book through the GA office to confirm attendance. Please do not contact the field meeting leader directly. Meeting times and locations will be confirmed on booking. These are not normally advertised in advance, as there have been problems with members turning up without booking or paying and maximum numbers being exceeded. Field meetings are open to non-members although attendance by non-members is subject to a £5 surcharge on top of the normal admission fee. Some meetings may have restrictions on age (especially for under 16s) or be physically demanding. If you are uncertain, please ask.

PAYMENTS for day and weekend meetings must be made before attending any field meeting. Cheques should be made out to Geologists’ Association. If making multiple bookings, please enclose a separate cheque for each meeting unless you have first confirmed that there are places available. A stamped addressed envelope is appreciated. Please give a contact telephone number and, if possible, an email address and provide the names of any other persons that you are including in your booking. PLEASE ALSO PROVIDE AN EMERGENCY CONTACT NAME AND TELEPHONE NUMBER AT THE TIME OF BOOKING.

There are separate arrangements for overseas meetings. TRANSPORT is normally via private car unless otherwise advertised. If you are a rail traveller, it may be possible for the GA office to arrange for another member to provide a lift or collect you from the nearest railway station. This service cannot be guaranteed, but please ask before booking.

PUBLIC LIABILITY INSURANCE for field meetings is provided but personal accident cover remains the responsibility of the participant. Further details are available on request from the GA office. SAFETY is taken very seriously. Should you be unsure about either the risks involved or your ability to participate, you must seek advice from the GA office before booking. Please make sure that you study the risk assessment prepared for all GA field meetings and that you have all the safety equipment specified. You must declare, at the time of booking, any disabilities or medical conditions that may affect your ability to safely attend a field meeting. You may be asked to provide further information on any prescription drugs etc that you may use whilst attending a field meeting. In order to ensure the safety of all participants, the GA reserves the right to limit or refuse attendance at field meetings.

EMERGENCY CONTACT: If you are lost or late for the start of a meeting, an emergency contact is available during UK field meetings by calling the GA mobile phone (07724 133290). PLEASE NOTE THIS NEW NUMBER. The mobile phone will only be switched on just before and during field meetings. For routine enquiries please call the GA office on the usual number.

TRAVEL REGULATIONS are observed. The GA acts as a retail agent for ATOL holders in respect of air flights included in field meetings. All flights are ATOL protected by the Civil Aviation Authority (see GA Circular No. 942, October 2000 for further details). Field meetings of more than 24 hours duration or including accommodation are subject to the Package Travel Regulations 1992. The information provided does not constitute a brochure under these Regulations.

FIELD MEETINGS IN 2008

THE GA AND THE INFERIOR OOLITE OF DORSET
Leader: Bob Chandler
Saturday 27 - Sunday 28 September 2008

Again precise details are not yet available. However, we will visit a number of localities that illustrate the variable nature of the Inferior Oolite and its faunas. As always there will be ample opportunities for fossil collecting.

Car sharing may be necessary and there may be some hard walking and a few hills.

Equipment: Hard hats and hi-vis jackets are essential.

Cost & bookings: Numbers will be limited to 20. Further details will be available from Sarah Stafford at the GA office. Please note it may be possible for the GA to arrange accommodation. Register with Sarah sending an administration fee of £10 per person to confirm your place.

MANTELL’S QUARRY
Leaders: Tony Brook and Peter Tandy (NHM)
Sunday 12 October 2008 1:30 pm

On Friday 5 October 2007 Peter Tandy and Tony Brook talked to the GA about the problems associated with trying to locate ‘Mantell’s Quarry’. This follow-up meeting, a year later, will walk the ground and put the speculative site to the test. We will spend the afternoon in a pedestrian exploration of an important site in the History of Geology, a place where the earliest known dinosaurs were found.

Equipment: Suitable footwear and clothing.

Cost & booking: Numbers will be limited to 25. Further details will be available from Sarah Stafford at the GA office. Please note it may be possible for the GA to arrange accommodation. Register with Sarah sending an administration fee of £5 per person to confirm your place.

THE CHALK AT EASTBOURNE REVISITED
Leader: Geoff Toye
Saturday 25 October 2008

Following the success of our visit in 2006, Geoff has kindly agreed to lead another visit to the coastal sections at Eastbourne. We will mainly be examining the Chalk succession and again there will be ample opportunities for fossil collecting.

Equipment: Hard hats are essential.

Cost & booking: Numbers will be limited to 25. Further details will be available from Sarah Stafford at the GA office. Please note it may be possible for the GA to arrange accommodation. Register with Sarah sending an administration fee of £5 per person to confirm your place.

POT LUCK
Leader: Dr Mick Oates
September/October 2008

Once again, a trip not to be missed with interesting geology and lots of fossils to keep the collector happy. Date and location are still to be arranged.

Equipment: You must have suitable footwear, a high visibility jacket and hard hat.

Cost & booking: Further details will be available from Sarah Stafford at the GA office. Register with Sarah sending an administration fee of £5 per person to confirm your place.

FURTHER AFIELD IN 2008

TANZANIA
7 October - 22 October
Leader: Prof Barry Dawson
This trip is now full.

September 19 A Geological Transect across the Himalaya - Dr Euan Mackenzie

October 24-26 Field meeting: North Cornwall and North Devon - Prof. Mike Benton

December 9 Christmas Festivities and Finds competition.

Further Trips for 2009

Gulf Sheikdoms to be led by Dr Tony Kirkham and Prof. Grahame Evans.

Libya to be led by Prof. Dick Moody.

Mole Valley Geological Society
September 11 The Geology of the Jurassic Coast - Dr M. Ala.

November 13 The end Permian Mass Extinction - Prof. Mike Benton.

December 4 Sorée with members lectures and mince pies.

www.dendron.net/mvg.
Email: Richard Higgs director@microy.co.uk

North Staffordshire Group
October 9 “Landfill Engineering - protecting the Environment”. Christine Blackburne, farewell lecture
November 6th 2008 7.30 pm The Professor Wolverson Cope Annual Lecture
Speaker: Professor Aubrey Manning, Emeritus Professor of Natural History, University of Edinburgh and well known TV personality. “2008 UN International Year of Planet Earth” 2008 is the 150th Anniversary of the founding of the Geologists’ Association and the 60th Anniversary of the formation of our Group. This lecture will celebrate both events. December 4 2008 7.30 pm Christmas Social & buffet with a talk by Bob Roach
January 8 2009 7.30 pm Speaker: Dr Ian Simpson, Keele University
“Boxing Day Earthquake and Tsunami”
Contact for details Eileen Fraser 01260 271505
Contact Field trips: Gerard Ford 01630 673409.

Oxford Geology Group
www.oum.ox.ac.uk/ogg.htm. or call programme secretary 01865 272960.

Ravensbourne Geological Society
October 14 AGM followed by Ice Age Mammals of the British Isles - Danielle Schreve.

November 11 To Catch a Falling Star - Sara Russell.

December 9 Christmas Festivities and Finds competition.

January 13 Gold - Paul Hope.
Contact Maurice Green, Secretary: 020 87777741 or Vernon Marks: 020 8460 2354.

North Wales - Cymdeithas Daearwy Gogledydd Cymru
Contact Jonathan Wilkins 01492 583092.

South Wales Group
Cymdeithas Y Daearegwyr Grwp De Cymru-
September 27 Field meeting: The Woolhope Inlier - Bob Owens.
October 24-26 Field meeting: North Cornwall and North Devon - Ted Freshney and Richard Scrivener.
Saturday 15th November GA Regional Meeting day

West of England
September 13-20 Horstmann Field trip to The Northumberland Coast - Dr Andrew Bell.
October 14 Exceptional preservation of Skin and Feathers in birds and dinosaurs from Liaoning - Prof Mike Benton.

November 11 Carboniferous Coal Forests - a subject back on the programme by public demand - Dr Howard Falcon-Lang.

December 9 The Geology of Paintings - Dr Ruth Siddall.
Contact Graeme Churchard 0117 967 1066.

Annual Lecture
November 6th 2008 7.30 pm Speaker: Professor Aubrey Manning, Emeritus Professor of Natural History, University of Edinburgh and well known TV personality. “2008 UN International Year of Planet Earth” 2008 is the 150th Anniversary of the founding of the Geologists’ Association and the 60th Anniversary of the formation of our Group. This lecture will celebrate both events. December 4 2008 7.30 pm Christmas Social & buffet with a talk by Bob Roach
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Contact Field trips: Gerard Ford 01630 673409.
repeat his talk on "Messel - A World Heritage Site in Germany"
Contact Betty Steel 01903 209140
Email: kande16@talktalk.net
Field trips:
October 12 Hastings Foresham Walk - Ken Brooks.
October 18 Field meeting

AFFILIATED SOCIETIES

Amateur Geological Society
Enquiries: Julia Daniels 020 8346 1056.

Bath Geological Society
September 4 Club evening.
October 2 The last glaciers of the Brecon - Dr R. Shakesby.
November 6 Joy Copin lecture - Prof Charles Harris - Potential Impacts of climate change in cold permafrost regions.
December 4 Preservation of the birds and dinosaurs with feathers from Liaoning China - Prof. Mike Benton.
Contact Miss Vicki Griffiths:
Email: chairman@bathgeol Soc.org.uk
www.bathgeol Soc.org.uk

Belfast Geologists' Society
September 13 Earth Works - Annie Given, Thoa Allen and Phil Doughty.
Contact Peter Millar 9064 2886.

Black Country Geological Society
For information contact Sarah Worton 01384 235946.
www.bcs.cgo.uk

Brighton & Hove Geological Society
Contact John Cooper 01273 292780 email:
john.cooper@brighton-hove.gov.uk

Bristol Naturalists' Society
Contact 0117 947 4086
Email: simoncarpenter@yahoo.com

Carn Brea Mining Society
September 16 Railways and Mines of the Bodmin District - Peter Davies.
October 21 A Nostalgic Mining Journey from St Just to Calstock - Tony Clarke.
November 18 Cornish Quarries - the Past, present and future - Dr Denise Pascoe.
December 9 Members' Medley.
Contact Lincoln James 01326 311420

Cheltenham Mineral and Geological Society
September 12 Geological Mapping - Dr Nick Chidlaw.
September 20 40th Anniversary show at Wesley Room, St Matthews Church.
October 10 Filling the Gap - Geodiversity and Aggregate Companies - Eddie Bailey.
November 14 Purbeck Park - The Purbeck Limestone Group in Dorset - Dr Paul Ensom.
January Miscellaneous - Members evening.
February 13 Luminescence Dating - Philip Tom's.
For more information on lectures: contact Kath Vickers 01453 827007
Contact Alan McKay 01452 547255.

Craven & Pendle Geological Society
September 13 Field meeting: Pendle Hill from Gerna Knoll to Little Mearley Clough - Paul Kabrina.
October 17 Environmental change in ancient and modern deserts
Nigel Mountney Ph.D., University of Leeds
Contact: Paul, kalmac@onetel.com or www.cpgs.org.uk

Cumberland Geological Society
September 26 Field trip: Landscape Diversity in the Glenridding area - Dick Clark.
Contact Susan Beale 01697 78353
cumbernd@fsmail.net.
www.cumberland-geo-soc.org.uk

The Devonshire Association (Geology Section)
June 26 One Day Conference South - West Geology: past, Present and Future.
Contact John Dangerfield 01297 33326.

The Dinosaur Society
www. Dinosau rsociety.com. Contact: Prof Richard Moody rt.moor dy@vir gin.net

Dorset Natural History & Archaeology Society
Contact Jenny Copps email:jenny@ dor-mus.demon.co.uk

Edinburgh Geological Society
September 20 Field meeting: Perth area - Rosalind Garton and Mike Browne.
September 27 British Geological Survey open day at Murchison House.
October 11 Field meeting: East Lothian Traprain Law and St Beldred's Cradle - Brian Upton and Chris Ellis.

Earth Science Teachers Association
For membership contact: Hamish Ross PO Box 23672
Edinburgh EH3 9XQ Tel: 0131 651 6410
Email: Hamish.ross@education.ed.ac.uk
ESTA website: www.estu.uk.org

East Midlands Geological Society
October 16-19 Weekend trip to the Gower - Contact Ian Sutton 0115 951 6515.
www.estu.uk.org email: info@ehgc.org.uk

East Herts Geology Club
September 25 Annual Charity Lecture - "Coping with Climate Change: what is the oil industry supposed to do?" - Dr. Bryan Lovell
November 25 Geological evidence in serious crime cases - Dr Andrew Moncrieff
December 9 Christmas Do
January 21 AGM
Check website for venue or contact Diana Perkins 01920 463755.
www.ehgc.org.uk email: info@ehgc.org.uk
Visitors most welcome - £2

East Midlands Geological Society
October 9 Brachiopods - recording environmental conditions while under biological control. Professor Maggie Cusack, University of Glasgow.

Geological Society of Glasgow
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November 13 The Moine Thrust - discovery, research and importance today - Professor Rob Butler, University of Aberdeen
December 11 Annual General Meeting

Geological Society of Norfolk
Contact: Dr Peter Friend 01223-333400.

Geological Society of Wales
October 8 Magnetic-Apetite and related copper deposits in Austen.
September 14 Field meeting: Chalk of the Lincolnshire Wolds

Hastings and District Geological Society
Contact Email: elvin.thurston@virgin.net.

Hastings Geological Field Club
Contact Diana Williams email: iggyken@aol.com

Hertfordshire Geological Society
www.hastingsgeol Soc.org.uk

Hertfordshire Geologists Society
Contact Peter Millar 9064 2886.

Horsham Geological Field Club
Contact: Paul, kalmac@onetel.com or www.cpgs.org.uk

The Indian Geological Society
India

The International Association of Geological Sciences
Email: Hamish.ross@education.ed.ac.uk

The Isle of Wight Geological Society
Contact Mrs Gill Woodhatch 01403 250265.

The London Geological Society
Contact Jenny Copps email:jenny@ dor-mus.demon.co.uk

The Midland Geological Society
Contact: Dr Peter Friend 01223-333400.

The Natural History Field Club of Hertford and District
Contact Mrs Gill Woodhatch 01403 250265.

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Leeds Geological Association
October 16 The Palaeontological Association Baldwin Lecture: The Evolution of Vertebrate Ecosystems through the End-Permain Mass Extinction - Prof. Mike Benton, University of Leicester.

October 10 – 13 Week end on the Isle of Man
Leader: John Barker

Window on the Evolution of Life - Professor David Siveter, Norma Rothwell and Jane Michael

October 1 - Silurian Soft-Bodied Sensations: A Unique Micropalaeontological specimens - Dr Giles Miller.
Contact Andrew Swift 0116 2523646; email: as48@e.ac.uk

Leeds Geological Association
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In the June issue of the GA magazine, John Potter discusses the demise of the geology courses provided by the University of London Extra-Mural Department. He relates some detail of the last 50 years of extra-mural geology. I too am very concerned about the declining numbers attending lifelong learning and continuing education courses in geology, and while my experience spans only four decades of teaching for the University of Cambridge Institute of Continuing Education, I would like to share my thoughts on the current situation.

When I started teaching geology and geomorphology courses for the Cambridge University Board of Extra-Mural Studies the teaching room (often a village hall) was packed with students of all ages, ranging from sixth-formers to pensioners. Almost all of these students had no previous knowledge of geology, except, perhaps, through attending other extra-mural classes. Geology was not included in the school curriculum, although some participants may have become interested through the teaching of physical geography at school. Most were unaware of its existence as a university subject. I recall a sixth-former asking me if geology was a subject that could be studied at university because it was not taught at school. Later I heard that the same student had applied to read geology at university. I hope she gained a place - at that time very few did.

During the sixties, a much smaller proportion of the population had the opportunity to obtain a university education than today, and the situation was particularly difficult for girls. Some departments of geology did not admit women undergraduates. ‘A level’ chemistry was a requirement for any aspiring geology student. Again this put girls at a disadvantage because many girls’ schools were unable to offer science subjects at ‘A level’ because of a lack of science teachers, and chemistry was one of the shortage subjects.

Forty years ago the main way in which many people interested in the diverse rocks and landscapes of this country and further afield could find out more about the subject was to attend evening classes, usually those provided by extra-mural departments. Over time the situation has altered in many ways. The expansion of university education, and much later, the revision of the school curriculum have meant that there are now many more opportunities for exposure to the earth sciences at an earlier age. Today, even if they do not choose to continue their studies, many of our primary schoolchildren have heard of the rock cycle and different types of rocks. They are welcomed into geology museums, where there are activities designed to encourage and enhance their learning. In secondary schools.

Today my classes consist almost entirely of students who are over 60 years of age. They are the people who were not exposed to geology in their youth. These students will often comment ‘Why were we not taught this in school, it is so interesting and relevant to the world around us?’ This cohort of students did not have the opportunities that are now available. Our younger people have been exposed to some (albeit you could argue insufficient) geological education. Today there are many geology graduates, and let us hope that they are spreading the word. Of course, some are doing just that with great success. The marvellous photography and the clear and enthusiastic presentations of Ben Stewart on the television are promoting great interest in geology, with far greater audiences than any continuing education classroom could hold. They can watch, listen and learn in the comfort of their own homes rather than venturing outside on a cold night to possibly even colder village halls for a continuing education class. And if they want to find out more there are books to accompany the series, and a wealth of information on the internet.

While the traditional extra-mural geological course may not be declining in terms of numbers attending further stimulation of demand for geological education, and in particular for geology in general tends to be from those who already have an interest in geology as well as the general public. These are carefully planned and often long-term projects. But perhaps we should also respond more rapidly to opportunities that grab the attention of the public. The website, for example, could be expanded to provide not just for the needs of members, but to disseminate quickly information for the general public to link in with high-profile television programmes or to provide in-depth explanations when geological hazards are major news headlines.

On reflection perhaps it is the extra-mural lecturer who is in greater danger of extinction. Let us hope that, following Hutton, there can be no prospect of an end to extramural teaching provided there is our enthusiasm for the subject with others.

Gillian M. Sheail

SOUTHERN THAILAND  November 2007

Led by Dr Michael Ridd

In November 2007, an opportunity to visit Thailand again, approximately 40 years following the first visit, and this time with the advantage of geological guidance, was not to be missed, but it was with some trepidation that I set out to join my travelling companions, on this my first field trip with the Geologists’ Association. Mike Ridd had expertly detailed the geological history of the region in the GA Magazine Vol 6 No 1 2007 and we were to track some of the varied geological evidence on the formation of the Southern Thailand peninsula in a two week journey across the peninsula, culminating in the cultural aspects of Bangkok.

Following our transfer flight from Bangkok, we finally arrived at Phuket airport on the west coast of Thailand and were met by our drivers and vehicles and set off for our introduction to the rugged local jungle-covered landscape. The Thai peninsula is formed of several continental fragments which drifted to their present position and fused during the Triassic, essentially all assigned to the Shan Thai plate. The more resistant granites form the mountain chains, but the rugged karstic scenery is formed by the Permian Ratburi Limestone. At our first location on Patong beach we examined a section of granite, cut through by large pegmatite dykes. Locally, these are tin-bearing and tin mining has been a major industry on Phuket Island in the past, lagoons now having formed at the sites of excavations. There is also still evidence of structural damage in Patong from the disastrous recent tsunami. We had a good long distance view of three granite headlands from the hill above Patong beach, Fig 1.

Further along the coast at Tamarind Families of monkeys have shells were seen. Many families of monkeys have made the park their home, with fine pickings from the visitors, and some caves have been converted to Buddhist shrines.

Continuing our journey south, we crossed the Khlong-Marui Fault, Fig 4, which crosses the peninsula, and has differing stratigraphic successions on either side of the fault. Here a picturesque waterfall (very refreshing in the tropical heat) falls over a mylonite in the fault zone. En echelon lenses of quartz invited discussion on the dextral/sinistral sense of movement here. Interpretation is complex, but research has concluded that the fault has ancient origins with re-activation in the Tertiary.

On arrival at Ao Nang on the coast near Krabi, there was the opportunity to visit an exceptional fossil site, the Laem Pho “Shell Cemetery”, Fig 5, where strata have been interpreted as having been deposited in fresh water lakes about 35 Ma in the Cenozoic. At first glance, in both directions, the beach appeared to be covered in an extensive concrete pavement but closer inspection revealed this to be a very shelly limestone, the principal fossil being a fresh water gastropod of the Viviparus species. The limestone was intercalated with lignite beds from plant material, Fig 6, all having developed following changes in palaeoenvironment and fluctuating water levels at the time of deposition.

Travelling east towards Trang, we left behind the Ratburi Limestone and we now saw evidence of the Mesozoic sandstones, limestones and mudstones of the Jurassic Khlong Min Formation. This has been interpreted as intertidal/shallow marine. We saw good cross-bedding and tidal varves in outcrops, possible infilled tube structures, and differing stratigraphic successions on either side of the fault. Here a picturesque waterfall (very refreshing in the tropical heat) falls over a mylonite in the fault zone. En echelon lenses of quartz invited discussion on the dextral/sinistral sense of movement here. Interpretation is complex, but research has concluded that the fault has ancient origins with re-activation in the Tertiary.

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were much in evidence. The Thai/Malaysian peninsula is renowned, plantations for which much of the ported altered vegetation and rubber remnants in the low tidal zone. The small bones (possibly turtle), and tree remnants in the low tidal zone. The locally forming landscape now supported altered vegetation and rubber plantations for which much of the Thai/Malaysian peninsula is renowned, were much in evidence.

Continuing en route to Songkhla on the east coast, there were opportunities to inspect limestone outcrops of the Devonian and Lower Permian, and the chain of granite mountains crossing the peninsula had created the added attraction of waterfalls at outcrop, all worthy of further investigation.

At Songkhla, the geological aspects of the trip terminated with the outcrops of hornfels on the foreshore, related to the granite intrusion.

During the journey across the Thai peninsula, we had seen some of the great variety of rocks from the Cambrian to the Miocene which make up this part of Thailand, and, personally I had found this a fascinating learning experience. We had seen a few examples of macrofossils in the Permian limestones, but so keen was one of our members to see ‘Miocene’ fossils from seaside outcrops near Krabi that he was only persuaded it was not Miocene when Mike knocked it off its reef and ate it, pronouncing it quite delicious!

We had enjoyed the wonderful Thai food and hospitality along the way, and additions to the geology of the region with swimming and snorkelling and boat trips around the islands of the Andaman Sea. We had experienced the challenges of the winds at sea and (almost) the unfriendliness of the local wildlife. To complete this journey we travelled by overnight sleeper train to Bangkok and spent two days sampling some of the cultural and historical delights around the city.

A final most memorable evening was spent as the dinner guests of members of the Thai Geologists’ Association.

Jenny Parry

Westbury Field trip

I had only recently joined the GA and decided that a field trip would be an excellent way of kicking off. I had never been to Westbury cement works with its adjoining Kimmeridge clay pit, so I was looking forward to an interesting time. There were about a dozen of us assembled in the car park to listen to what the leader Simon Carpenter had to tell us about the pit. He also brought along a selection of fossil material previously found from the area. It was mostly vertebrate material, as most of the non-vertebrate material is poorly preserved due to crushing in the clay. We were given a hand-out, which described the articulated specimens found. They included Pliosauroidea, Plesiosauriforme, Ichthyosauria, Crocodylia and Testudines (Turtle).

We set off through part of the works to get to the pit. It was a fairly breezy day but dry. There was no activity in the pit as the works had already amassed a large stock pile of clay to work with.

On entering the pit, I was soon to find a fossil which I have rarely encountered before (previously I have found them in the body chambers of an Amaltheus sp. & Euaspidoceras sp. ammonites). Here they were relatively common: they are, of course, Aptychus. My other finds were a small piece of Ichthyosauria rib bone and a small Pluerotomaria sp. gastropod. Finds from the pit by other group members (of which I was made aware) were Ichthyosauria vertebra, and fish plates.

In the afternoon we headed off to the Beggars Knoll Quarry a short distance away. The material from this pit is Cretaceous; Lower, Middle and Upper Chalk. We again started off with a talk and a short tour around the works looking at chalk-grinding machines. The finished product is then pumped by an underground pipe to the Westbury site to combine with the clay in the making of cement.

This pit was massive, possibly being over 1/2 mile across. Once deep down in the pit it became very warm and generally windless. Unfortunately we only had about 1 1/2 hours to collect fossil specimens, which nevertheless proved profitable. Although the fossils were sporadic, there were some good finds. I myself found a slightly crushed Nautiloid (probably a Cymatoceras sp.) which, although loose, appears to be from the lower chalk. It has a very nice cross-hatching shell pattern on it, which is very similar to one I have found from the Jurassic lower lias Oxynotum zone from the Bishops Cleeve landfill site. Finds from the pit by other members of the group (of which I was made aware) were 2 large ammonites (between 1 and 2 feet across) and a beautifully preserved crushing tooth found by the leader, Simon Carpenter. Most people also found Marcasite nodules loose or in the chalk. I was surprised that, with so much chalk, there was no evidence of echinoids. All in all I had a very enjoyable day and had found new (100+ million years old!) fossils to add to my collection.

Ray Fox

Rockwatch News

The winter time events are when Rockwatch essentially puts on its public face, draws in families and introduces them to some of the delights of geology and the world around them. Of course, the events are for our members and their families, perhaps first and foremost, but it’s always good to show the outside world just what a fascinating and interesting place Planet Earth is, has been, and, maybe, will continue to be; as long as we learn to manage our overall stresses on the planet.

Many of the Family Days that we run in museums around the country have become annual fixtures, such as has been their initial popularity; and so it was again this year at the Sedgwick Museum in Cambridge in February. We ran a range of activities for all the family to enjoy and the university Time Team were also there, along with museum staff, to provide many other geo-activities. The Earthtalks this year focussed on Charles Darwin, the geologist, in anticipation of his Bicentenary celebrations in 2009. There were two excellent talks by Sally Gibson and Lyall Anderson on “Following Charles Darwin’s geological footsteps in the Galapagos” and “Silver and Gold: Darwin and the mines of Chile”. Rockwatchers were once again, brilliant at asking and answering questions.

Our annual visit to the Bristol City Museum & Art Gallery, during the February half-term, was also highly successful and attracted a huge number of families, often spanning the generations. We ran a range of activities for visitors and gave away lots of fossils to very excited youngsters - the start of many a collection, perhaps. Student helpers from the university were queueing up to run the racing trilobite activity. I rather think they enjoyed it as much as, if not more than, any of the visitors! There were a number of local GA Groups with displays as well as the wonderful Westbury Pliosaur II, found in 1994 by Simon Carpenter. In fact, the first time that this whole fossil reptile had been on view to the public at the Museum, was at the Rockwatch Family Day in February 2006.

The first Rockwatch field trip of the year, much earlier than usual, was at the end of the February half-term and was run and organised by the DGAG under the capable leadership of Alan Holiday. We are delighted that Alan and the Dorset group had an excellent day with Rockwatch exploring the Fleet at Herbury and Moonfleet, where, in spite of being slightly hampered by tides, they found lots of fossils including brachiopods, bivalves, bryozoans and oysters. Later in the day, at Tidmoor Point, in the Oxford Clay, lots of belemnites, small ammonites and the gorgeous pentacrinoid ossicles were collected. Does anyone know the purpose of the exquisite ornamentation on their internal surfaces? The final site was to look at the Osmington Oolite at Camp Road where evidence of trace fossils, cross bedding and ripple marks were seen. In spite of the lack of sun and evident chill in the “breeze”, everyone went home with some wonderful fossils.

We had an extremely busy week for Science Week in March with BGS at Keyworth. Almost 1000 children from local schools had a chance to talk to real geologists and find out what they do. On the Saturday, we had our annual Family Day, this year with extended hours, such as has been its popularity in previous years. The crowds were waiting for the doors to open and we really were kept very busy all day. It was good to meet up with many Rockwatch members and to find quite a lot of youngster keen to join us!

Our “behind the scenes” visits to the Palaeontology Department at the NHM was a great success, marred only by the difficulties of the Easter holidays this year, so that a number of children were still in school and unable to come. That notwithstanding, the trips were fully booked and we had waiting lists, so we hope to run them again later in the year. It is such a treat for the children to meet scientists working in the museum and I can attest to how big an influence they have. We visited the laboratory and saw how fossils are prepared for display which was fascinating. Later, seeing some of the huge saurichs and fierce theropod fossils thrilled the children and their identification skills were impressive. Fossil plants proved to be an interesting section, especially when one or two of the children were able to identify coprolites and begin to work out dinosaur diets from these! We saw some superb ammonites, some far bigger than any the children had seen before. We also learnt how the specimens, particularly the pyritised ones, are slowly being conserved to prevent future deterioration. There’s still much work to be done, which did not escape the children’s notice!

So, a very good start to the year for Rockwatch. We have a lot more exciting trips organised for the next few months and I am delighted that we have former Rockwatch members, who are either students or graduates, expressing an interest in helping on some of our future field trips. We look forward to welcoming them back.

Susan Brown
Chairman
25 Years on for the G.A.

The character of Street Geology has moved on apace in 25 years. For the 125th year of the Association, we had the publication London; Illustrated Geological Walks, Books One and Two, thanks to the initiative of Trevor Greensmith and Douglas Grant of what was then Scottish Academic Press, the regular printer of the G.A. Book One is long out of print and Book Two nearly so. This is almost to my relief as author, simply for the changes which have hit the streets of London. Buildings which were deemed interesting and important have disappeared to be replaced by new ones which command attention but for which there is no account. At best, the books are an historic record.

Other things too have changed. In the late 1970’s, I was trying to find a means of getting G A geologists to look at buildings as a legitimate if eccentric option for a geologist. To me, the everyday streets are available to the amateur geologist in ways which I’m sure would have appealed to the first membership in the 1860’s. Theirs were the streets in the process of being laid and seen as ‘temporary sections’. For our time, street walks had been a focus for Geological Survey professionals such as Frank Dimes and Richard Butler; both led excursions for the Association. If there was a problem with this, it had to be the seriousness associated with rock identification, a precision which could bring an abrupt end to discussion.

I would as bold as to say that this changed in the late 1970’s when a new regime took over when I persuaded Clive Bishop to bring his petrological expertise to my aid when we tackled the immediate area around St Paul’s Cathedral as a field excursion. The rest is G A history, and one good reason to return to St Paul’s in our 150th year on Saturday 5th July 2008. For sure, St Paul’s is still there at the heart of its precinct, but the whole area is still in some state of change. For example, the diverse stones of the West Front, restructured in 1873 but always being modified as the cathedral is renovated and cleaned. One thing that emerges from the cleaning must be the wear and tear which the West Front fabric has endured, exposed as it is to the weather sweeping up Ludgate Hill for over three hundred years. All is revealed in the patches to the Portland Stone, some of which has the colour and texture of old bones.

The really old blocks stand out just as the tougher oyster shells do from the softer matrix, by their irregular shapes and sometimes, their deeply fluted surfaces. Several were put in place with the bedding vertical – so much for the mason’s best practice which we always quote! Those walls, however, are a source for study as a start.

Likewise, those impressive Shap Granite bollards which frame the paved area. These were a boon for Clive and me those years back. First, there is the unmistakeable porphyritic texture given by those well-shaped orthoclase feldspars and the statement that there is nothing quite like Shap anywhere in the World. It is good to be so positive when other times the answer has to be “I think that this is Chinese, but I don’t know”. Above all, however, the bollards also illustrate the vital facts in the debate; Granite, hot melt or mineral-rich sea? There are ‘heathen’ inclusions as I prefer to call what others correctly term xenoliths. In those heated debates, we can see the growth in place of the distinctive orthoclase feldspars proving, we hope, assimilation of country rock and conversion (ultimately) into Shap Granite. Debate is always to be encouraged, but we know the answer and nothing has changed in 25 years.

What definitely has, however, is the frame to the cathedral. In the 1960’s, as part of the Abercrombie Plan for the rebuilding of London after the Blitz, the architect Holford was allowed to build office blocks which hemmed in the Cathedral. All was rectangular, and in particular, Juxon House for Barclays Bank prevented the direct view of the West Front from the ascent of Ludgate Hill; it jutted out quite intrusively. Now, all that has gone. The new buildings curve sympathetically to the cathedral and create a truly embracing precinct. All is in new Portland Stone of course, offering the chance to compare and contrast with the old and patched stone of the West Front.

All of this prepares us for the bigger changes of the last 5 years, notably the restinging of the original street gate of Temple Bar in what was space between Juxon House and the red brick Chapter House. One of the surviving gates to the City, it created a barrier to traffic moving into Fleet Street to such an extent that it was dismantled but saved by the brewer Meux to be taken to his Hertfordshire estate. In 2001, it was offered to the City, accepted with acclaim, and repositioned in the Precinct as a gateway to a new Paternoster Square which, as built between 2001 and 2005, provided us with a wide range of topics of geological interest for the best part of the July excursion.

Under the Holford rebuilding, the area to the north of St Paul’s was a group of rectangular blocks similar to Juxon House surrounding a draughty paved square which was used for football, hockey, and sometimes, kart racing. It was rather bleak. It generated several schemes which would have
The colonnaded front to King Edward Court, the home of the Stock Exchange, transformed the ground, notably one which sought to reinstate something akin to the wandering lanes and alleys of the medieval city, with crafts and dwellings crowding in upon the pre-Wren cathedral, mixing commerce with dwellings. It did not win favour, but by 1999 the Holford pattern was universally out of favour, including Prince Charles in one of his ‘carbuncle’ outbursts. From that public expression of taste, the City approved the wholesale demolition of the late 50’s scheme, partly on the acceptance that buildings of that date did not fulfil the internal space needs of offices and that the density of commercial offices was too high. The Paternoster Square project was born and a team of architects were invited to plan buildings grouped about a central focus point which was an ambitious recreation of a column modelled upon one which Inigo Jones had sited to the portico of the old St Paul’s pre-fire.

By 2001, the 23m Paternoster Column had been carefully erected as that necessary focal point for the whole scheme. It had taken very skillfully cut fluted drums of Portland Whitbed limestone set upon an octagonal base of the same stone, with a built-in water feature involving panels of De Lank Granite. There are five drum units each of 6 tonnes dead-weight as finished. On size, it is the elaborately carved Corinthian capital which takes attention. It was 50 tonnes as a single block from the quarry. Nine months work saw it whirled down to 25 tonnes, then 11 tonnes and finally, as carved, 7 tonnes. Rightly, in 2002 the column received a Stone Industries award for craftsmanship. In a way, it set the standard for the surrounding buildings. Earliest of these was King Edward Court (otherwise No 10) a building of varying skyline, but striking for a long colonnaded covered walk roofed in a 6,500 sq m, out of a total of 11,000 sq m for the company Grants of Shoreditch.

Until 2004, the Square was open to the south and the cathedral. At that date, however, the gap was closed with the resiting of Temple Bar, the only surviving gateway to the City built by Wren as a completion of his rebuilding after the fire of 1666. It was brought back and carefully restored by the specialist firm Cathedrals Workshop Organisation of Chichester. It was a task of replacing damaged stone and deeply weathered stone, as well as releasing blocks bonded by Victorian cement pointing. There was sculptural detail, swags and brackets in Portland Stone, as well as statues to add to the originals - Charles the First, Charles the Second, James, and Anne of Denmark. All was completed by 2004, and in 2006, this restoration work was rewarded with a Stone Industries Award to match that for the Column earlier.

For geologists, the Square offers interesting contrasts to what we can see in the cleaned St Paul’s. It is almost entirely a study of old and new Portland Stone and differing states of weathering which is just what we need to see. The new will be watched for how it responds to the weather such as we experienced on that Saturday in July. Also for future visits, what will emerge as they complete the cleaning and offering a post-1666 ruling about the weathering which is just what we need to see. The new will be watched for how it responds to the weather such as we experienced on that Saturday in July. Also for future visits, what will emerge as they complete the cleaning and offering a post-1666 ruling about the weathering which is just what we need to see. The new will be watched for how it responds to the weather such as we experienced on that Saturday in July. Also for future visits, what will emerge as they complete the cleaning and offering a post-1666 ruling about the weathering which is just what we need to see. The new will be watched for how it responds to the weather such as we experienced on that Saturday in July. Also for future visits, what will emerge as they complete the cleaning and offering a post-1666 ruling about the weathering which is just what we need to see. The new will be watched for how it responds to the weather such as we experienced on that Saturday in July. Also for future visits, what will emerge as they complete the cleaning and offering a post-1666 ruling about the weathering which is just what we need to see. The new will be watched for how it responds to the weather such as we experienced on that Saturday in July. Also for future visits, what will emerge as they complete the cleaning and offering a post-1666 ruling about the weathering which is just what we need to see. The new will be watched for how it responds to the weather such as we experienced on that Saturday in July. Also for future visits, what will emerge as they complete the cleaning and offering a post-1666 ruling about the weathering which is just what we need to see.

Eric Robinson

Eric has donated his photos to the GA archives and encourages other members to do so.

The restored Temple Bar

Terracotta red artificial stone. The 28 columns are of Portland Whitbed decked with white algal pellets and a proportion of shell greater than usual. That character is heightened in the next door building going east, where Whitbed is texturally contrasted with thick bands of Portland Roach with the high density of casts of Trigonia, Ostrea, and the famous ‘Portland Screw’ gastropod. All these surfaces were there to be scrutinised at close quarters by our party.

Closings the Square to the east, No 1 Paternoster Square has the Portland Whitbed for its base, but passes up into a facade which is of red brick. The colour and the thin proportions are those of a typical Roman brick, all of which is a return to that idea of a site sitting within the limits of Londinium and offering a post-1666 ruling about vernacular buildings (minimum use of wood and well spaced out). Red brick also blends with the Chapter House of the cathedral which survived Holford.

The paving involves radial strips of grey Sardinian Granite the infill wedges being pale grey Crossland Hill sandstone from Huddersfield. This paving was a record in itself, involving.
The Geology of Charnwood Forest # 2 Saturday 28 June 2008

Leader Mike Howgate

Last year we looked at the geology of Bradgate Park in the rain, this year it was the Charnwood Lodge area in the sun (though sometimes only just). The aim of the day was to examine a series of volcanoclastic rocks from water lain ash to vent agglomerate along a transect from Shepshead to Bardon Hill. We also included some practical ‘student-type’ activity such as sorting out the bedding from the cleavage, taking dip measurements and examining the Pre-Cambrian - Triassic unconformity.

We met up at Morley Quarry, Shepshead at 10 am. This is an excellent place to begin as it is easy to pick out the dip of the Pre-Cambrian strata due to quite distinct colour banding in the rocks and differentiate it from the cleavage. This can be quite difficult at the other localities. These are the oldest rocks of the Charnian sequence and comprise a turbidite sequence of ash laden mudstones and greywacke. The regional dip of about 40 degrees to the southwest could be easily estimated. The unconformity with the overlying red Triassic mudstones was quite dramatic and could be examined close at hand. While we were there one member of the party, armed with Mr. Muscle and a cloth gave the mould encrusted display boards a much needed clean. It seems that most of the geological display boards I come across need a good scrub and as part of the G.A.’s commitment to furthering geological education a clean-up campaign is in order.

We re-grouped at our next stop, Mount Saint Bernard Abbey, where we left some of the cars. Here we were able to examine a variety of the igneous and volcano-clastic rocks of the area in the fabric of the Abbey. The outcrop to the north of the entrance of the Abbey, in buff coloured andesitic crystal tuffs, was a confusion of joint planes which looked suspiciously like bedding. Only when we found a weathered surface displaying faint banding were we able to estimate the true dip.

From a lay-by on Abbey Road we ascended to a series of knolls which form Warren Hills. By this time we were getting used to differentiating stratigraphic dip from cleavage so we practiced taking dips and arrived at 45 degrees south by south west. Indicating that we were nearer to the nose of the plunging anticline into which the Pre-Cambrian rocks are folded. The strata here were tuffs intercalated with thick beds of coarser material with abundant lapilli. At one locality we picked up the distinctive ‘slate agglomerate’, a bed with contorted slabs of pale tuff in a darker matrix which we had seen in Bradgate Park the previous year. This is one of the marker beds which aids in unravelling the structure of the area.

Having obtained permission from Leicestershire and Rutland Wildlife Trust we drove up to Charnwood Lodge Nature Reserve to visit the spectacular ‘Bomb Bed’. Here we had our picnic lunch and a detailed look at the so-called ‘bombs’. The BGS booklet prefers the term ‘volcanic blocks’ for these generally squared off lumps of Andesite, retaining the term bombs for the more spindle shaped forms typical of more basic volcanoes. What appears to be flow like elongation of the bombs is now regarded as a post depositional tectonic elongation.

Our final afternoon stop was on the summit of Bardon Hill where there were exceptional views of the Triassic mudstone infilled wadis which the quarrying had revealed. The green banding produced by occasional reducing conditions within the generally oxidising conditions of the Triassic lake picked out the depositional tectonics produced as the sediments compacted over the Pre-Cambrian terrain of Triassic times. Exposures of the ‘Bardon breccia’ a classic vent agglomerate were seen around the trig point and in fresh blocks on the eastern margin of the quarry face.

For those who wish to follow these itineraries they are in the recently published BGS guide book and map ‘Exploring the Landscape of Charnwood Forest’ price £12.

Mike Howgate

Member to Member

Stuart Baldwin (GA Member for 49 years) of Baldwin’s Scientific Books is winding down part of his business and is GIVING AWAY many thousands of REPRINTS and JOURNAL RUNS.

To access these on the web please click on his searchable database website: http://ukbookworld.com/members/fossil where all freebies will be found. The original prices are shown but please ignore these. Items under 5kg can be posted at cost, other items - please collect as soon as possible.

The offer remains open till the end of 2008.

Details of how to find or contact him are on his general website: www.secondhandsciencebooks.com.
More Member to Member

From Nan Wise:
I have a time share at Pestana Palms in Funchal. Madeira and this year I have two weeks in two different resorts in Funchal. A time share is of course self-catering but there are not only restaurants on the site but restaurants and cafes nearby.

1. Pestana Palms - a studio for 2 (twin beds) from October 6th to 13th
2. Pestana Village - a studio for 2 (twin beds) from October 13th to 20th

These are top class resorts and October is high season and the standard is very high.
Pestana Palms is on the sea and swimming is both in the sea and in the pool. Pestana Village is between the sea and the town of Funchal.

Madeira is a fascinating island and anyone with geological interests will love it. Sadly I am not able to go this year.

I wish to cover my costs and am suggesting £200 a week and £400 if someone wants the two weeks.
Pestana Palms management will help with the move to Pestana Village for anyone staying for the two weeks.

If you are interested contact Nan on 020 88 89 94 29 or email: nwstarstuff@blueyonder.co.uk

The Palaeontological Association’s Scheme to Support Local Group Talks on Palaeontology

The Palaeontological Association (the Pal Ass), is more than 100 years younger than the GA, they have many overlapping interests, and many members are members - a studio for 2 (twin beds) from October 6th to 13th

Local Groups or Affiliated Societies who would like to know more about the scheme. Please contact Tim Palmer at palass@palass.org.

More information on Pal Ass can be found online at www.palass.org,

Eastern Mendip and Western Mendip Guides.

These colourful and attractive guides continue the BGS series aimed at the intelligent layman who is interested in getting out into the field to see the rocks and landscape for themselves. Each folder contains with a large folded sheet mainly taken up with a geological map, scale 1:25k, but with much marginal information in the form of inserts of some key areas, scale 1:20k, geological cross sections, a key to the geological units depicted and their colours together with brief lithological notes and generalised thicknesses. In addition there are geological and topographical overviews of each sheet area, scale 1:100k. Each folder includes an explanatory booklet, lavishly illustrated, of about 70 pages in length. Special points of interest are flagged up on the maps and annotated with numbers that cross-reference to descriptions in the booklets. The texts are well written with plenty of informative diagrams and photographs and with much historical detail particularly referring to mineral exploitation past and present. In addition to the geology, the descriptions of the local vegetation and its relation to the underlying geology will appeal to many walkers.
The sites of springs, caves, stream sinks and the main collapsed areas are marked on the maps as befits an area dominated by the Carboniferous Limestone whose drainage is dealt with in some detail and is well explained. With all of these riches it seems almost churlish to be critical.
The map sheets are very large and printed on not very robust paper so one wonders how they will stand up to wear in the field. However, the scale of 1:25k is well chosen for the intended purpose. Some reduction of the sheet size could be achieved by omitting the inserts and overview maps which give little extra information. A perennial problem with the printing of geological maps is that the colours and ornament tend to obscure the topography. Although these maps in this respect are of a high standard, it is still difficult to follow roads etc. in places, most notably under the Dolomitic Conglomerate. If I were walking in the area I would want the back-up of a good OS map. I must admit I am not enamoured of the shaded relief maps (1:100k) which appear both in the booklets and on the map face – a well-layered topographical map would surely give as much, probably more, information more elegantly and cleanly. As a life-long geological map user I must be allowed to protest about the description of geological mapping as just “the extrapolation of the boundaries between outcrops of different rock types across the map”. The differential resistance to erosion of the different rock units results in changes of slope on the ground and forms the basis of the important technique of feature mapping. On Mendip this applies to all the formations except for some in the Carboniferous Limestone in which differential weathering is less important.

Although the Writhlington Colliery fossil collecting tip is introduced without definition (p.19, Eastern) it seems a pity to have eliminated the Fuller’s Earth Rock from the maps as this field is full of fossils. Although the 'Whitlington Colliery fossil collecting tip is not too important in the present context. Convincing photographs of rock types are unusual, and those in these booklets are of limited use and are often misleading as for example, galeas (p.12, Western), Inferior Oolite (p.9, Eastern) and many others. The answer to the problem is a hammer and a good hand lens. A wet surface is also helpful. The photographs of typical fossils are, on the whole, unhelpful – line drawings are much preferable for clarity of definition.

Various minor points; with regard to the development of Mendip structure surely the development of anticlines etc. precedes the thrusting and the subsequent folding (not mentioned) of the thrusts themselves to form nappes. The Purbeck Marble is provided with gastropods (snails) not bivalves (p.63, Western). It is incorrect to describe the sandstones in the Coal Measures as red (Key to geological units). They are only red when in contact with Triassic strata; the normal colour is grey. The Purbeck Marlstone is divided with graphical subdivision of the Carboniferous Limestone but this is not too important in the present context. Convincing photographs of rock types are unusual, and those in these booklets are of limited use and are often misleading as for example, galeas (p.12, Western), Inferior Oolite (p.9, Eastern) and many others. The answer to the problem is a hammer and a good hand lens. A wet surface is also helpful. The photographs of typical fossils are, on the whole, unhelpful – line drawings are much preferable for clarity of definition.

The references for further reading are generally biased in favour of caves and related phenomena but the more geologically-minded might feel a bit left out. Some guidance as to where to tap into the great body of geological literature including maps would have covered this.

In conclusion, I hope the various criticisms will not be regarded as being unkind or unfair. Although the Whitlington Colliery fossil collecting tip is not too important in the present context. Convincing photographs of rock types are unusual, and those in these booklets are of limited use and are often misleading as for example, galeas (p.12, Western), Inferior Oolite (p.9, Eastern) and many others. The answer to the problem is a hammer and a good hand lens. A wet surface is also helpful. The photographs of typical fossils are, on the whole, unhelpful – line drawings are much preferable for clarity of definition.

G.W. Green
Regional Meetings Celebrating GA150

Geologists’ Association South Wales Group

Geofest
Saturday 15th November 2008
National Museum of Wales, Cardiff
10.00am - 5.00pm
Entry Free

Lectures:
Dr Phil Manning (Manchester) - Grave secrets of the dinosaurs
Dr Alison Rust (Bristol) - Mmmagma: Edible demonstrations of volcanic processes

Activities:
Kent Group Microfossil workshop
Rockwatch
British Geological Survey
Coal Measure plant hunting
Behind the scenes tours of the Museum’s Geology Department
A range of geological hands-on activities in the Museum’s Glanely Gallery
Gallery trails and quizzes
Displays from local geological groups.
Building Stones walk with Eric Robinson

The 8th Professor Wolverson Cope Annual Lecture

Speaker
Professor Aubrey Manning
Emeritus Professor of Natural History, University of Edinburgh and well known TV personality.

"2008 UN International Year of Planet Earth"
Thursday 6th November 2008 7.30 pm
Keele University
Alan Gemmel Theatre, Huxley Building

2008 is the 150th Anniversary of the founding of the Geologists’ Association and the 60th Anniversary of the formation of our Group.
This lecture will celebrate both events.
Not to be missed
The lecture is free to NSGGA members and students, £1 for non-members. As seating is limited to 160, members are asked to book seats for themselves and their guests by Monday 1st September: after that date the lecture will be opened to the general public.
Please book by e-mail quoting “Aubrey Manning Lecture” in the subject line to: Carol Fereday on candm.fereday@btinternet.com or by post to: Carol Fereday, 24 Brookside Close, Newcastle-under-Lyme, ST5 2HX (01782 712467)

Robert William Mylne’s “Geological Map of London and its Environs” 1871

The Festival of Geology on 1st November at UCL will be a wonderful opportunity for collecting all kinds of geological “goodies” from a variety of organizations, groups and societies.
For instance, this splendid new facsimile edition of Robert William Mylne’s geological map of London and its environs, published in 1871, would be a good buy for everyone interested in the history of geology. Robert Mylne hailed from an illustrious Scottish family. He was the son of William Chadwell Mylne, who was ‘Engineer to the New River Company’ which supplied London with “fresh drinking water” from the River Lee in east London, so he was essentially following in his father’s footsteps as an engineer/geologist.
Robert Mylne’s first geological map of London was published in 1856. By this time, Mylne had created a large practice as a consulting water engineer, and his 1856 ‘Map of the geology and contours of London and its Environs’ at a scale of 4 inches to the mile (1:17,032) was an invaluable resource to aid the much needed development of greatly improved water and sewerage systems for London. It was during the mid 1800’s that there were significant changes in the understanding of public health and disease in cities, and it was thanks to detailed geological maps such as Mylne’s, that enabled essential engineering changes to managing public health to be put in place.
In 1858 there followed a second, smaller map, entitled ‘Geological map of London and its Environs’ at a scale of 1:45,000, and a third version in 1871 at the same scale. It is this 1871 facsimile version that has been reproduced by the BGS from its original in the Survey’s library.
The map will be available for sale at the Festival from BGS for £10, size 700mmx480mm

Susan Brown

FESTIVAL OF GEOLOGY

SATURDAY 1ST NOVEMBER 2008
10.30 am to 4.30 pm
University College London, Gower Street
London WC1E 6BT

EXHIBITORS FROM THE WORLD OF GEOLOGY
Fossil and mineral displays, stoneware,
books, maps and geological equipment

DISCOVERY ROOM
Activities for children
fossils, racing trilobites, Jurassic dioramas

TALKS
Professor Bill McGuire—Geohazards
Professor Duncan Wingham—Climate Change
Adrian Jones—Diamonds, Big Bang to Big Bucks
Professor Mike Benton—Dinosaurs

RAFFLE WITH GEOLOGICAL PRIZES

AMATEUR PHOTOGRAPHIC COMPETITION
Any geological topic
£100 First Prize
Entry form on web site

SCHOOLS’ POSTER COMPETITION
‘Urban Geology’
Prizegiving and Winners’ Display
Entry form on www.rockwatch.org.uk

WALKS
Sunday 2nd November
Explore London’s Geology
and Surrey Hills

ENTRANCE FREE!

Further details
The Geologists’ Association
020 7434 9299

Email geolassoc@btinternet.com
rockwatchtaga@btinternet.com

www.geologistsassociation.org.uk
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THE GEOLOGISTS’ ASSOCIATION
150th ANNIVERSARY FESTIVAL