



**Circular 373
November 2007**

Registered Charity No: 503617

President: John Travis

www.emgs.org.uk

INDOOR MEETINGS **WINTER 2007**

Saturday 15th December 2007 - 6.00 pm

Ultimate Quaternary - the Geology of Hawaii

Speaker: Dr Richard Hamblin (ex BGS Keyworth)

(to be followed by the Christmas Cheese & Wine evening) (*please remember to bring a wine glass*)

Saturday 12th January 2008 - 6.30 pm

Marie Stopes: Sex, lies and fossil plants

Speaker: Dr Howard Falcon-Lang (University of Bristol)

Saturday 16th February 2008 - 6.00 pm

The Foundation Lecture followed by the Annual Society Dinner.

Saturday 8th March 2008

Members Evening

Saturday 19th April 2008

Midlands Influences on William Smith

Speaker: Peter Banham

Mercian Geologist

The 2007 issue of the *Mercian Geologist* is being distributed without the supplement that appears in its contents listing. The supplement, *The Geology of the Brassington Mines*, is the third of the splendid records of the mines and geology of the Peak District prepared by Trevor Ford. Printing of it, by the

Peak District Mines Historical Society, has been repeatedly delayed, and it has been considered inappropriate to delay the *Mercian* yet further. The supplement will be mailed separately, hopefully some time later in November. The editor apologises to Society members and to subscribers for the unfortunate situation and for the delays in distribution of the *Mercian* which has been held back in wait for the supplement, but matters were beyond the control of the EMGS.

AUTUMN/WINTER 2007 INDOOR MEETINGS

Saturday 15th December 2007 - 6.00 pm

Ultimate Quaternary – the Geology of Hawaii

Speaker: Dr Richard Hamblin (ex BGS Keyworth)

This talk follows a visit to Hawaii last February organised by Nottingham Geotours. The Hawaiian Islands group lies in the middle of the Pacific Ocean, 2500 miles from the nearest continental landmass. The islands are created within the Pacific Plate above a hot spot in the mantle, but as the hot spot remains stationary and the Pacific Plate moves to the north-west, each island moves away from the hot spot and a new island is created. As the islands move, they also sink and become eroded. The result is a string of islands and submerged sea-mounts extending as far as the Aleutian Trench to the north. Here the seamounts are subducted, after a life of around 50 million years.

There are eight main inhabited islands concentrated at the south-east end of the group. The newest island, currently situated over the 'hot spot', is the 'Big Island' of Hawaii, and the geology here is spectacular. Kilauea is the world's most active volcano, Mauna Kea is the tallest mountain on Earth, rising almost 32000 feet from the floor of the ocean, and Mauna Loa is the biggest mountain on Earth, having a volume greater than the whole of the Sierra Nevada mountain range. The rocks are all varieties of basalt, resulting from continuous eruptions of generally fluid lavas giving rise to huge 'shield' volcanoes. The basalts do however vary in composition, largely as a result of mineral settlement within the magma, and the more acid magmas can give rise to quite violent eruptions, particularly if circulating groundwater comes into contact with the magma. Fortunately during our visit the eruptions were quiet and continuous and we were able to walk close to the flowing molten lava. We also saw evidence of massive landslides that occur where the basalts become unstable around the coast, and these landslides give rise to tsunamis on a grand scale.

The island of Maui is the second youngest of the main islands, and comprises two distinct volcanoes joined by a low isthmus. The oldest basalts above sea level are nearly two million years old, and the youngest erupted around 1790 AD, so more eruptions are expected. We also visited the island of Kauai, which is the oldest and most deeply eroded of the inhabited islands. It is the most heavily vegetated island and generally considered to be the most lovely; it has been the setting for many films including South Pacific and the Jurassic Park series. It was built up as a single shield volcano, 5 to 6 million years old, but since much modified by erosion and massive landslides.

Saturday 12th January 2008 - 6.30 pm

Marie Stopes: Sex, lies and fossil plants

Speaker: Dr Howard Falcon-Lang (University of Bristol)

Marie Stopes (1880-1958) requires little introduction. She was one of the most flamboyant and influential figures of the twentieth century and, in 1999, Guardian readers voted her Woman of the Millennium in recognition of her pioneering work on birth control. Far less well known is the fact that Stopes trained as a geologist, and her work in palaeobotany remained her life-long passion. Although Stopes has been the subject of four previous biographies, none of these works address her geological

career. In this talk I uncover the secret life of Marie Stopes and rediscover her major contributions to Earth sciences.

Saturday 16th February 2008 - 6.00 pm

FOUNDATION LECTURE

Looking for Life on Mars

Speaker: Prof. Monica M Grady (Open University)

Why is there so much interest in Mars? Many scientists believe that there is overwhelming evidence that suitable environmental conditions for life to survive existed on Mars in the past, when the planet had a thicker atmosphere and liquid water was stable at the Martian surface. Most of the observations in support of this belief come from missions to Mars, both orbiting satellites and landing craft. There is, however, another window on the Martian surface, and the processes that take place there: meteorites from Mars. Martian meteorites are igneous rocks, some of which have suffered alteration by aqueous fluids at Mars' surface. Many Martian meteorites also contain pockets of gas trapped within impact-generated melt; the gas was trapped from the Martian atmosphere during ejection of the meteorites from the surface of the planet. One of the Martian meteorites, ALH 84001, achieved notoriety after a team of NASA scientists identified structures within carbonate patches as fossilised Martian microfossils. Although their evidence is by no means conclusive, and not accepted by much of the scientific community, their findings have stimulated a great deal of interest in exploration of Mars for traces of past life.

In her talk, Monica Grady will consider what we know about Mars, both from space missions and from Martian meteorites. She will also discuss results from recent space missions, and whether analyses carried out on the Martian surface show that the red planet is a dead planet - or whether it is alive!

Saturday 8th March 2008 - 6.30 pm (following AGM at 6.00 pm)

Members Evening

There will be four speakers (listed below alphabetically)

Title: Iceland, Faroe Islands and zeolites

Speaker: Alan Dawn

Abstract: The opening of the North Atlantic Ocean has left a trail of basalts stretching from East Greenland through the Wyville-Thompson Ridge to Iceland, through the Iceland-Faroe Ridge to the Faroe Islands, and then beyond to Skye, Mull, Rum and Eigg as far as the Giant's Causeway in Ireland. Active volcanism in Iceland today continues adding to the story as the island splits down the middle, exposing the Mid-Atlantic Ridge as it reaches the surface. Spectacular scenery results from the past and present volcanic activity. This presentation will be illustrated with colour transparencies and a display of some of the rock forms and specimens of the zeolite suite from Iceland, Faroe Islands and Skye.

Title: Ardnamurchan – micro to macro

Speaker: Robert Gill

Abstract: Visiting interesting geological sites often leads to rock samples being collected and taken home for study. Further investigation can be undertaken by thin section, and while this usually requires laboratory equipment and machines, thin sections can be prepared at home. Details of how to do so will be given, as well as sources for materials required. *Geosec Slides* grew from such a beginning and is now a full-time occupation for me since I mobbed from Lincolnshire to the centre of an eroded Tertiary volcano in Ardnamurchan, Scotland. The presentation will be illustrated with photomicrographs of thin sections of rocks collected from the East Midlands, Ardnamurchan and other sites around the World.

Title: The rise of the roddons

Speaker: Dinah Smith

Abstract: The Fenland of Lincolnshire and Cambridgeshire is the largest area (400km²) of Holocene deposits in Britain. These are up to 15m thick and have a complex palaeoenvironmental history. The stratigraphy comprises a succession of interbedded clays (marginal marine salt marsh environments) and peats (freshwater reedbeds) representing greater or lesser amounts of marine influence over the time period from 6000 to 2000 BP. The salt marsh clays contain spectacular networks of silt/sand-filled tidal creeks known locally as roddons. These host a range of microfossils - especially foraminifera and ostracods, and the spines and skeletal fragments of echinoids. This study aims to ascertain the mechanism of infill which formed the roddons by analysis of their sedimentary fill and the accompanying microfauna, thereby giving a greater understanding of the transgressive/regressive history of the Fenland.

Title: Water wheels and geology in the Derwent Gorge, Matlock, two centuries ago

Speaker: Lynn Willies

Abstract: The gorge of the River Derwent, where it runs through Matlock to Cromford, is incised through Lower Carboniferous limestones and volcanics which, to the east, are overlain by Edale Shales (Longstone Mudstones). By 1750, and probably long before, the lead-bearing mineral veins which cut through it were worked down to the water tables, either perched or at river level, usually by drainage tunnels locally called soughs. In the mid 18th to mid 19th centuries, sustained efforts were made to drain mines on the east side of the river below its level with, at different times, at least eight water wheels using the river and three steam engines. It is still possible to enter some of the mines involved in these financially and technically brave adventures which allows us an unusually rich glimpse of both mining history and geology which, today, is almost invisible at the surface.

LECTURE VENUE

Indoor meetings will take place in lecture theatre B3 of the Biology building at the University of Nottingham. If you require to use the lift to B3, please speak to the security attendant who will assist you. B3 is equipped with induction loop hearing assistance. If you are attending meetings or joining a coach at the University of Nottingham, enter from the South Entrance on University Boulevard. Cars should be parked in the car park on the bend in the road just beyond the security point after Science Road. The entrance to the Biology building is at the right hand side of the rear of this car park.

Leicester Building Stones Guide

Copies are available from the Secretary at a price of £3.50. We are looking for volunteers please in the Leicester area to help in distributing the Guide. If you can help, please contact the Secretary (details below).

EMGS Website

A plea for past EMGS Field Trip Photographs please for a gallery on the website. Pictures can be e-mailed to website@emgs.org.uk or sent to the Secretary.

Mercian Geologist

The "Rock around the Campus" booklet included with the Mercian was produced for a walk with the "Friends of the University" and Council thought it would be useful for members to have a copy.

Marketing the Society's Publications

We are still in need of a volunteer to promote the marketing of the Society's publications such as the East Midlands Field Guide, Leicester Building Stones Guide and the Sandstone Caves of Nottingham books. If you have any expertise in this field, or even if you haven't but would like to volunteer to help, please contact the secretary or any other member of Council.

New Members

Mr Martin Compton, Parwich, Derbyshire.

The National Stone Centre

Are looking for volunteers for guiding and other activities on the site at Wirksworth. If you can help, please contact Ian Thomas on 01629 824833 or ian@nationalstonecentre.org.uk

e-mail addresses

We would very much like to send you your Circular by e-mail. If you have not already done so, please send your e-mail address to the Circular Editor, sue.miles@freethcartwright.co.uk.

Please can you also confirm your name and address when sending your e-mail so we can correlate these details with our membership listing.

The next Circular will be published in late December/early January.

The next Council Meeting will be held on 10th January 2008.

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