



Circular 379
January 2009

Registered Charity No: 503617

President: John Travis

www.emgs.org.uk

INDOOR LECTURES **WINTER/SPRING 2009**

INDOOR LECTURE PROGRAMME

Saturday 21st February 2009 - 6.00 pm

The Foundation Lecture - Palaeobotany of Antarctica
Speaker: Professor Jane Francis

followed by the Annual Society Dinner – BOOKING FORM ENCLOSED
Please ensure all applications are submitted by Friday 13th February at the latest

Saturday 14th March 2009 - 6.00 pm

Annual General Meeting and Members Evening

Saturday, 18th April 2009 - 6.30 pm

Lecture - title to be advised
Speaker: Neil Ellis.

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.

Saturday 21st February 2009 - 6.00 pm

Palaeobotany of Antarctica

When Antarctica was green: fossil plants reveal Antarctica's climate history

On a continent on which over 99% of the land is now covered with ice sheets, paradoxically some of the most common fossils are those of plants. They indicate that, for most of its history, Antarctica was a green forested land, even though the continent was situated over the South Pole. The fossils contain a rich store of climate information that provides a window into past greenhouse worlds with ice-free poles.

The evolution of Antarctic climate from a Cretaceous greenhouse into the Neogene icehouse is captured within a rich record of fossil leaves, wood, pollen and flowers from the Antarctic Peninsula and the Transantarctic Mountains. About 85 million years ago, during the mid-late Cretaceous, flowering plants thrived in sub-tropical climates in Antarctica. Analysis of their leaves and flowers, many of which were ancestors of plants that live in the tropics today, indicates that summer temperatures averaged 20°C during this global thermal maximum. During the Palaeocene (~60Ma) warmth loving plants gradually lost their place in the vegetation and were replaced by floras dominated by araucarian conifers (monkey puzzles) and the southern beech *Nothofagus*, which tolerated freezing winters. Plants hung on tenaciously in high latitudes even after ice sheets covered the land, and during periods of interglacial warmth in the Neogene small dwarf plants survived in tundra-like conditions only 500 km from the South Pole.

Saturday 14th March 2009 - 6.00 pm

Members Night

Volcanoes, Volcanoes, "Volcanoes"

1) A scenic guide to some Chilean Volcanoes - Alan Filmer

Chile, other than the extreme south, is almost entirely the product of the subduction of the Nazca oceanic plate under the South American continental plate. This has been going on since before the break up of Gondwanaland, so there are a wide age range of rocks uplifted by the underplating process.

The Andes, rising to over 6000m above the Benioff zone comprise more than 2500 volcanoes and form a mountain chain for the length of the country along the 5000km border with Bolivia and Argentina. The most striking volcanoes are of Pleistocene or Holocene age and have near perfect cones. Those in the far north rise from the Altiplano which is at 4500m above sea level or the Atacama desert at 3000m. Here rain is unknown or rare and the volcanoes are easily seen. Further south in the Lake District the volcanoes rise from temperate rain forests at around 1000m which receive 5m of rain per year and are thus usually hidden by cloud. Examples from these contrasting locations will be shown. During our visit in October 2007 none were erupting vigorously but a few days after we left Llaima erupted and at the time of writing (September 2008) Chaiten is erupting. Both of these are in the Lake District.

2) Vulcanism in the Northern Tanzanian Rift Valley - Gerard & Brenda Slavin

The African Rift Valley is the largest active intra-continental rift, running southwards from the Afar triple junction through East and Central Africa. The eastern (Gregory) branch ends in the volcanic area of northern Tanzania where it overlies the Tanganyika craton. Here the present day rift developed at about 1.2 Ma following an earlier broad depression in the Tertiary and forms a series of elongate basins along the foot of the north-south escarpment. Rifting was preceded by a group of major shield volcanoes producing massive lavas mainly of the alkali basalt/phonolite association, some of which developed major calderas, including Ngorogoro crater about 18 Km across, in the Crater Highlands. Following faulting at 1.2 Ma, a second phase of volcanism occurred and continues to the present day. It differs from the quiet effusive older volcanics and is characterised by highly explosive activity producing major steep conical mountains such as Meru, Oldo, Inyo Lengai and Kerimasi to widespread minor tuff cones.

The magmas at these later centres are largely ultra-basic and ultra-alkaline principally nephelinites and phonolites and these are accompanied at some centres by carbonatite lavas and pyroclasts, most noteworthy at Oldo Inyo Lengai which is currently active with the latest eruption as recent as April 2008.

3) Mud "Volcanoes" of Azerbaijan - Tony Waltham

Azerbaijan is a small but rather splendid country where the fold mountains of the Caucasus break through semi-desert lowlands and disappear beneath the Caspian Sea. As a nation it receives a very few leisure visitors, but the geologically inclined tourist may well be drawn to its mud volcanoes. The Absheron Peninsula, adjacent to Baku, is host to a plethora of geological activity, with water, oil, gas and mud seeping to the surface through the thick pile of sediments in the Caspian basin.

Baku was in the forefront of the world's oil industry back in the 1870s and stands at the heart of a second boom based on the vast oilfields of the Caspian. Old oil provides some amazing industrial landscapes around Baku, and new oil provides wealth and industry on a grand scale. Surface oil seeps were recorded by Marco Polo, and many are still active today.

Azerbaijan has about 400 mud volcanoes (about 70% of the world's total). Faults along anticlines appear to offer the mud the necessary routes to the surface. It is mainly sourced from mid-Tertiary organic shales at depths as much as 8 km, and largely separate from the oilfield reservoir rocks at shallower depths. Azeri mud volcanoes come in all shapes and sizes depending on the rates and relative proportions of water, mud and methane that are extruded to the surface. Many of the smaller features (with dimensions of tens of metres) are in states of almost continuous activity, with conical edifices, advancing mudflows, growing mud domes or muddy pools on their vents. These are typically subsidiary features on larger mud volcanoes, which are kilometres across and hundreds of metres high, and have periodic eruptions with varying degrees of explosiveness. Methane provides the link between the oilfields and the mud volcanoes, and it has burned at surface vents ever since it became an early focus of the Zoroastrian religion.

Society Publications

- (1) **Leicester Building Stones Guide;**
 - (2) **East Midlands Field Guide;**
 - (3) **Sandstone Caves of Nottingham** (new full colour edition) .
- Copies available by contacting the Secretary or at Indoor Meetings.

We are looking for volunteers please in the Leicester area to help in distributing the Leicester Building Stones 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.

New Members

Mr John Saul, Halifax.
Mr Tim Langdale Smith, Wragby.

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.

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

Back Copies of the Geological Magazine & Proceedings of Geologists' Association

One of our members, Geoff Warrington, has the following issues available to members for a small donation to his chosen charity, the Leics. & Notts. Air Ambulance:

Geological Magazine - Vol. 99 (1962; parts 3 and 6 only)
- Vols. 100 to 109 (1963 - 1972) complete.
Proceedings of the Geologists Association - Vol. 40 (1929; parts 1,2, 4 only)
Vol. 41 (1930; parts 2, 4 only)
Vol. 42 (1931; parts 1,2,4 only)
Vols. 43 to 80 (1932-1969) complete
Index for vols 41 to 50

Geoff does not wish to split any of these runs and is suggesting a donation of £1.50 per complete Geological Magazine and £2.00 per complete PGA ones. Buyer to collect and give Geoff their donation. If you are interested, please contact Geoff on gwarrington@btinternet.com

e-mail addresses

To minimise postal costs and photocopying charges which amount to approximately £4.00 each year for every member who still receives their Circular by post, 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 February 2009.

The next Council Meeting will be held on 15th January 2009.

Secretary: Mrs Janet Slatter, 100 Main Street, Long Whatton, Loughborough, Leicestershire LE12 5DG
e-mail: j.slatter@zoom.co.uk tel. no. 01509 843297.

Treasurer: Mr Colin Bagshaw, 150 Scalpcliffe Road, Burton-on-Trent, Staffordshire DE15 9AD, e-mail: Colin.bagshaw@yahoo.co.uk tel. no. 01283 564520

EAST MIDLANDS GEOLOGICAL SOCIETY

45th Anniversary Dinner 21st February 2009 at 8.00 pm

The 45th Anniversary Dinner will be held in the University of Nottingham Club after the Foundation Lecture. Join other members on this special occasion for a complimentary glass of wine or soft drink before the meal, a three course dinner and coffee. Cost is **£20.00** per person.

The menu is:

To Start Celeriac and Brie Soup, Chorizo Oil, Celeriac Crisp
(Chorizo oil may be omitted for vegetarians)
Hemsley Hickory Smoked Salmon Pate
Celery Salad, Melba Toast
A salad of Butternut Squash, Mizuna, Pea Shoots, Green Beans
Basil and Grape dressing

The Main Gurnard
Leek and Parmesan Risotto, Roast Red Pepper dressing
Lamb Fillet
Ratatouille, Pommies Anna, Balsamic Reduction
Carrot and Coriander Tart
Chive Champ, Pistou Dressing

To Finish A Tasting Plate of the current Hemsley Dessert Menu
And
A Selection of Authentic British Cheeses
And
Petit Fours

Coffee

Please indicate your choice of starter and main courses below.

Booking form: 45th Anniversary Dinner

Please reserve places

My/our choice of the three courses are as follows:

Starter.....

Main.....

Name & Tel. No:

Address:

Cheque payable to EMGS enclosed for £.....

Send to:

Ian Sutton, at 30 Alford Road, West Bridgford, Nottingham NG2 6GJ

Tel. No: 0115 923 2360 e-mail – ian.sutton@idsgeo.demon.co.uk

EAST MIDLANDS GEOLOGICAL SOCIETY

Please note that the January meeting is still taking place this coming Saturday, 10th January, although it was unfortunately omitted from the January Circular you have just received. Details as below.

Saturday, 10th January 2009 - 6.30 pm

The Secret of Sherwood Forest - Duke's Wood Oil Museum

Speaker: Kevin Topham

Saturday 10th January 2009

The Secret of Sherwood Forest - Duke's Wood Oil Museum

During the Second World War, the discovery of oil in the Duke's Wood district of Sherwood Forest was said to be Winston Churchill's greatest secret, and before this discovery oil had been one of the biggest worries. This talk will describe the part the 214 oil wells in the Duke's Wood area played in World War 2 the personnel who transferred from Bletchley Park to the Anglo Iranian Oil Co research station at Kirklington Hall in the 1940's, the American input of 1943 which doubled production of Duke's Wood crude, and today's North Sea assets of oil and gas.