

Geology and Society – ESTA Annual Course and Conference, Leicester 2010

A wet, grey Wednesday afternoon in December. The Copenhagen summit looks likely to end in deadlock, or worse an impotent compromise, and I'm still thinking about Attenborough's Horizon programme last week on world population. Is it our fault the state that the planet is in? – After all, geologists found all the hydrocarbons and made it possible to combust them in such quantities! And we sustained economic and population growth by meeting the challenge of providing more, and cheaper, natural resources – from copper to extend electricity supply, tantalum for every mobile phone, to cement and bricks for new houses! Or, were geologists just responding to the needs of society? And in fact are we not the potential saviours of humanity – heroes that told everyone that climate change was possible – and, furthermore, can actually do something about it (with carbon sequestration, and more controversially nuclear)? May you live in interesting times...!

The manifold interactions of the geology of spaceship Earth with the people who live on it are explored in the theme of this year's ESTA annual conference at Leicester: 'Geology and Society'. It is after all the human-angle that really engages many of our students – 'Will that volcano erupt? Can we safely build there? Can we provide water for this village?' This theme we hope embodies many of the forward-looking (and ultimately optimistic!) areas of applied research taking place in the Leicester department, whilst not neglecting more traditional geology.

Whilst details of the programme are still being arranged, here is a taster of what we plan to offer:

Dr Jan Zalasiewicz, author of 'The Earth After Us', will discuss whether, as a result of the effects of human activity on the global environment, we are entering a new Geological Era – the Anthropocene. Complimenting this, Prof. Mike Petterson will discuss sustainable development and how geology can be a force for good in delivering economic benefits to developing countries. Examining carbon in particular, the carbon cycle, recent climate change, geological carbon sequestration and novel fuels

such as methane hydrates will all be explained by experts in the field.

Perhaps the future of the human race lies in the stars – or at least nearby planets – so we will have planetary geologists talking about recent research on the geology of Mars. The practical application of geology, in a more down to Earth sense – solving crime – will be examined by two keynote speakers on forensic geology. Dr Laurance Donnelly (Wardell-Armstrong) is a geologist who has collaborated with a number of police forces in their investigations, and for 11 years, has applied geological capabilities and expertise to search for buried murder victims. Dr Jane Evans, (Head of Science-based Archaeology, NERC Isotope Geosciences Laboratory) will show how an understanding of bedrock geology, and its isotopic composition, can



The National Space Centre, Leicester. © Leicester Shire Promotions Ltd.



Jane – a 6.4 metres long sub-adult Tyrannosaurus rex skeleton, part of the Flying Dinosaurs and origin of birds display in the Leicester Geology Department. Photography by Design Services, ©University of Leicester.



Tungsten carbide drill head – entrance foyer, Leicester Geology Department. Photography by Design Services, ©University of Leicester.

be used to trace the origins and migration of human communities – as well as modern murder victims.

Of course geology is not just of practical use; comprehending the vastness of Earth history gives us geologists a unique perspective on how we relate to the planet and the incredible story of the evolution of life. To remind us of the beauty and grandeur of life on Earth Prof. David Siveter will present a special evening lecture on exceptionally preserved fossils including the ornate 3-dimensionally-preserved species from the Herefordshire Lagerstätte.

Talks will form just part of the conference, with plenty of opportunities for hands-on action in workshops, INSET courses (for Primary, KS3/4, Post-16 and HE), and fieldwork on the Sunday. Workshop subjects planned include remote sensing and GIS, comets and meteorites, reconstructing diet from vertebrate skulls, and ocean drilling – to name just a few! Field trip options are planned to include Charnwood Forest – home to Charnia – the oldest microfossils in the UK, the fossil-packed Jurassic rocks to the east, hands-on shallow geophysics, a visit to a major quarry operation, or a tour of rock sculptures (geology and art!) in the beautiful university Botanic Gardens.

And if all that isn't enough to whet your appetite there will be plenty of opportunities to socialise, both day and night. We are currently seeking generous sponsorship of the conference from industry and are delighted to announce that we plan to hold the conference dinner at the award winning National Space Centre visitor and educational centre. As well as a dinner within the Planets gallery, the evening will include a drinks reception in the Rocket Tower, space simulator rides, a 360° film show in the Space Theatre and free access to all the galleries including the Earth from Space, the Planets, and Exploring the Universe.

From the mantle to outer space, from the first fossils to the Anthropocene – we hope ESTA 2010 will have something for everyone!

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The ESTA Annual Course and Conference will be hosted by the University of Leicester on the 17th-19th September 2010. Leicester is centrally located in the UK and easily reached by train, bus, road and air. The Geology Department is home to a pet dinosaur called Jane. Further details of the conference will be posted on the ESTA website, or for further information contact Gawen Jenkin, geology@le.ac.uk.

"Pillow lavas were formed when the shelly limestone hardened"