CHARNIA

LEICESTER

LITERARY AND PHILOSOPHICAL

SOCIETY

THE NEWSLETTER OF

SECTION C (GEOLOGY)

CHRISTMAS 1995 EDITION

Leicester Literary and Philosophical Society
Geology Section

Winter Programme 1995/6

All meetings are held on Wednesdays at 7.30 p.m. in Lecture Room 10 in the Dept. of Geology at Leicester University, unless otherwise stated. Coffee available from 7 p.m. Use car entrance no. 2, and enter Bennett Building via doors facing Mayor's Walk

1995

4th October The Magic Flute Cast - geological correlation with Mozart
Dr Alf Whittaker (B G S)

18th October Gold: where, why and how *Dr Jeremy Richards (Leicester University)*

1st November What really happened at Krakatoa
Dr Alan Woolley (The Natural History Museum)

11th November (Saturday) Open Day at Leicester Museum & Art Gallery
10.00a.m. - 12.30p.m. *(then adjourn for a pub lunch)*

29th November Revolution in publishing geology *Dr Marge Wilson (Leeds University)*

13th December Members Evening - Bring Your Own - *Specimens etc., Food, Drink*

1996

8th January (Monday) 7.30p.m. 'Meteor Impacts and the History of Life' *Dr Simon Conway-Morris (Cambridge)* Joint Parent Body Meeting at the Museum, New Walk

10th January Geochemistry and the environment of developing countries
Dr Jane Plant (B G S)

24th January What's new in teaching Earth Science *Dr Evelyn Brown (Open Univ)*

7th February 'Surely they don't need protecting - they're only rocks?'
Dr Keith Duff (English Nature)

21st February Members Evening - short presentations of slides

9th March (Saturday) "Origins & Innovations: the first 200 million years of vertebrate evolution" ***Vaughan College Saturday School.***
Organised by Dr R J Aldridge & Dr M A Purnell (Leicester Univ)

13th March ANNUAL GENERAL MEETING, Chairman's address
Mount Bardon Volcano *Dr Mike Le Bas*

Some notes on forthcoming talks...

'METEOR IMPACTS AND THE HISTORY OF LIFE' by Dr. Simon Conway-Morris (Cambridge University). January 8th.

Will members please note the change of venue for this meeting. This is our annual Joint Parent Body Meeting. Their meetings are held on Monday evenings in the Art Gallery of the Museum in New Walk - a welcome return to our old stamping ground. The entrance is on the car park side of the Museum.

Simon Conway-Morris needs no introduction for his work on the Burgess Shales but this talk is an interesting, enlightening and entertaining departure from his more usual theme.

I first heard of this talk at the British Association Festival of Science at Loughborough University last September and I thought it eminently suitable for this occasion. I, for one, am looking forward to hearing it again. I hope many more of you will join me.

MEMBERS' EVENING - February 21st.

A chance to entertain and/or be entertained by fellow members of the Section. If you have any slides of your trips during the past year, select about ten to fifteen minutes' worth and bring them along. Always a wide variety guaranteed, so even if you're not contributing, bring yourself along and enjoy the evening.

SATURDAY SCHOOL - March 9th., Vaughan College.

'Origins and Innovations: the First 200 Million Years of Vertebrate Evolution.' Organised by Dr.R.J.Aldridge and Dr.M.A.Purnell (Leicester University).

It is hoped that the flyers for this event will be ready and in my hands so that they will be enclosed with this Christmas issue of 'Charnia'. You will find a resume of the day's format and speakers on this flyer. If this is not so, they will be available at our meetings in the New Year, or you can get in touch with Vaughan College or myself for one. It sounds like a very stimulating day.

Eliz Bellamy

PROFESSOR JANE PLANT, F.I.M.M., C.Eng., F.G.S.

- is the Head of the Minerals and Geochemical Surveys Division of the British Geological Survey (Natural Environment Research Council) and Visiting Professor at the University of Liverpool Department of Earth Science. She has published widely on environmental geochemistry and on mineral developments in the United Kingdom and internationally. She is currently a member of the CBI Minerals Committee, the Earth Sciences Committee of the Royal Society and co-leader of IGCP 360 - World Geochemical Baseline.

THE ROLE OF GEOCHEMISTRY IN ENVIRONMENTAL AND EPIDEMIOLOGICAL STUDIES IN DEVELOPING COUNTRIES: A REVIEW.

Concern over the effects of chemicals in the environment on the health of man and animals is growing as rapid economic and population growth extends such problems as land degradation, pollution and urbanisation from industrialised nations to the developing world.

In this presentation the principal socio-economic and environmental pressures on developing countries are reviewed, before discussing the role of geochemistry, in: (1) preparing high resolution baseline data to identify potential hazards; (2) understanding the pathways of chemical elements from rocks and soils to man and animals; and (3) developing amelioration strategies to reduce the impacts of inappropriate land use, power generation and mining. The particular geochemical problems of tropical terrains are discussed and some case histories from the international work of the BGS, funded by the Overseas Development Administration, are described.

It is recommended that developing nations should prepare modern geochemical maps, ideally to the standards set out in International Geological Correlation Programme Project 360 World Geochemical Baseline and that aid agencies should fund integrated environmental geochemical surveys as being of primary importance, especially for health studies and land use planning; particular attention should be paid to the environmental impact of urbanisation. Further understanding of chemical and mineralogical speciation is required to improve the interpretation of geochemical data for environmental purposes.

Multidisciplinary studies, involving epidemiologists, biochemists and nutritional specialists, are essential if natural and anthrpogenic impacts are to be properly assessed and practical amelioration measures implemented.

WHAT'S NEW IN TEACHING EARTH SCIENCE...

Dr. Evelyn Brown is Senior Lecturer at the Earth Sciences Department of the Open University and is Science Staff Tutor in the Nottingham Centre. She graduated at Manchester, did an MSc in sedimentology, followed by a Ph.D at Liverpool on 'Authigenic marine zeolites and their relationship to global volcanism' and later completed, with First Class Honours, a degree in English Literature at Loughborough University.

Her talk 'What's new in teaching Earth science' looks at the two ways of change: what is taught and the new technologies used. When geology became a respectable science for professionals early this century, its study became divided into ever more specialised areas. The trend was reversed with the plate tectonic theory, as specialised areas were drawn together within one exciting framework and the Earth Sciences were born.

The reversal has been accelerated by our growing awareness that we need to call on a wide range of expertise if we are to use our geological knowledge to exploit commercially the resources that society has become dependent upon but to exploit them without harming our natural environment in the longer term. This move towards what are called 'interdisciplinary studies' is being reflected in the content of University courses, as is our discovery of more and more ways in which we can use new technologies, such as computers, to aid the way in which our students learn.

PROFILE OF SECTION 'C' CHAIRMAN, Dr. MIKE LE BAS

Dr. Mike Le Bas taught geology at Leicester University until he took early retirement five years ago. Now he is Hon. Scholar here and holds similar posts at Southampton University and at The Natural History Museum, London but keeps contact with students via tutoring the Open University geology course S236.

Mike graduated from University College, London, going on to gain a Ph.D at Cambridge on the geochemistry of layered gabbros. He then spent two years in the Royal Engineers doing National Service in Cyprus, Libya, Egypt and Jordan 'playing with landing craft'.

Following this and his marriage, Mike spent four years teaching Mineralogy and Petrology at Cambridge before coming to Leicester in 1961, when Professor Sylvester-Bradley immediately pitched him into being Secretary of our Geology Section.

Currently, Mike is serving his third term of office as Chairman. His association with the Section has been invaluable to him, opening up avenues of research separate from his normal one of alkaline igneous rocks and carbonatites and into the igneous rocks of Leicestershire, which paved the way to a field tour and lecture tour of Japan, the ultimate of which will be his Chairman's Address next March.

SURELY THEY DON'T NEED PROTECTING...

Keith Duff's talk will explain the need for the conservation of geological sites, geomorphological features and natural processes, and will consider the links with the conservation of wildlife. It will be illustrated by slides showing examples from all over Britain, supplemented by others from Europe and the United States. The talk will discuss the challenges faced by geological conservationists and will give examples of techniques and practices employed.

Dr. Duff writes: 'I was born a Londoner, read Geology at Cardiff University and from 1970 to 1974 researched for a Ph.D at Leicester on the palaeontology of the Oxford Clay. During this time I survived the collapse of the roof of the Bennett Building and spent many happy hours removing dust from my desk as the builders re-built!'

'I joined the Nature Conservancy Council in 1975 as a geologist and spent the next ten years working on the protection of geological sites. I became Head of Geology in 1985 and moved into science management in 1987, becoming Science Director for English Nature in 1991, at the time when the NCC was split into separate parts covering England, Scotland and Wales. I have managed to maintain a peripheral involvement in Oxford Clay research and every year teach part of the Third Year Palaeoecology course here at Leicester University. I am currently on the Council of the Geological Society.'

LEICESTER LITERARY & PHILOSOPHICAL SOCIETY

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