

Society Proceedings, 2001

'The Yorkshire Geological Society' is a registered charity (No. 220014) whose objective is to promote and record the results of research in geology and its allied sciences, more especially in Yorkshire, by holding meetings for the reading of original papers and the delivery of public lectures and by field meetings.

The General Secretariat is at 19, Thorngate, Barnard Castle, DL12 8QB. The charity correspondent is at Church Garth, North Newbald, East Yorks, YO43 4SX. The Society's main agents are:

Bankers: Barclays Bank PLC, Sheffield City Office, S1 1NG
Investments: Charities Official Investment Fund, 2 Fore Street, London EC2Y 5AQ
Trustees: The serving members of the Council
Examiner of Accounts: Mr P. Atkin (ACIB), North Cave, East Yorkshire

The Society's governing document is the '*Rules of the Society*', last amended on 11th November 1995.

1. ANNUAL REPORT FOR 2001

(Adopted at the Annual General Meeting,
York, 8th December, 2001)

1.1. General Secretary's Report

Annual General Meeting. The Annual General Meeting was held in York on Saturday, 2nd December 2000. Following recent practice, all the officers' reports with the exception of the Treasurer's are now incorporated within the General Secretary's Report. Individual Reports will of course continue to be published in the Proceedings.

There being no postal nominations for Council, the new Officers and Council proposed by Council itself were elected to serve for 2001 as follows:

OFFICERS

| | |
|-------------------------------------|---------------------------------------|
| President | Dr D. Millward |
| Vice-Presidents | Dr M. Romano Mr I. C. Burgess |
| General Secretary | Dr T. Morse |
| General Treasurer | Mr M. G. Allderidge |
| Programme Secretary | Dr P. Wignall |
| Editors – <i>Proceedings</i> | Dr N. Aitkenhead Dr D. W. Holliday |
| Editor – <i>Circular</i> | Mr P. Kabrna |
| Secretary Conservation Committee | Mr R. Myerscough |

OTHER MEMBERS

| | |
|------------------|-------------------|
| Mr A. Bowden | Dr D. J. Evans |
| Mr S. Holroyd | Dr N. S. Jones |
| Mr P. Kennett | Dr H. M. Pedley |
| Ms A. Quarterman | Dr C. T. Scrutton |
| Mr J. Slater | Mr W. Watts |

Professor John Neale was elected to Honorary Membership of the Society for services to the Society spanning more than 50 years.

Dr M. Romano then presented the John Phillips Medal to Mr Paul Ensom in acknowledgement of his distinguished

contribution whilst in the post of Keeper at the Yorkshire Museum. Mr Ensom had continued the excellent traditions in curation at the Museum, begun by John Phillips himself, who was born 200 years ago this year. In his reply Mr Ensom thanked the Society for this honour.

The presentation by Dr M. Romano of the Moore Medal followed. This is awarded annually for the best undergraduate geological project from a student in the north of England. This year the medal was awarded to Mr Clive Portman from the University of Derby, who gave a short address of thanks.

Dr Romano then delivered the second of his two Presidential Addresses entitled 'Dinosaur behaviour: the answer lies in the tracks on the Yorkshire Coast'.

The meeting was attended by 69 members and their guests.

The Annual General Meeting was as usual followed by the Annual Dinner, which was held at King's Manor, Exhibition Square, York. Professor Steven Donovan of the Natural History Museum replied on behalf of the guests.

Membership. At the end of November 2001 the membership comprised 626 Ordinary, Life and Honorary Members, 65 Associate Members, 18 Student and Medallist Members, 83 Institutional Members and 2 Patrons, a total of 794 Members. This figure includes 22 new enrolments for 2001. The membership for 2001 shows a slight decrease from the total of 801 reported at last year's Annual General Meeting. The low key membership drive has continued throughout 2001 and coupled with our representatives at local universities, conferences, events and museums, who with our well deserved thanks promote our Society, will hopefully arrest this continuing small yearly decline and assist in increasing our membership. Also many thanks to Sheila Rogers for her continued efforts, with respect to our membership records.

It is with regret that the Society has been informed of the deaths of the following members in the year to 31st October, 2001.

Sir Kingsley Dunham, elected 1947, President 1958–1959,
Sorby Medallist 1963; elected Honorary Member 1976.
Dr D. Humphries, elected 1950
Mr M. C. Jackson, elected 1980
Dr C. F. Moon, elected 1971

Acknowledgements. On behalf of the Council I would like to take this opportunity to thank all those members of the Society and their guests who have supported the programme of meetings during 2000. The Council always welcomes comments on the programme and suggestions for future meetings.

Thanks are also expressed to those members who are retiring from Council:

| | |
|-------------------|--|
| Mr A. Bowden | 4 years service; 3 years as Secretary to the Conservation Committee. |
| Mr I. C. Burgess | 13 years service (second term on Council); 11 years as Joint Principal Editor and 2 years as Vice-President. |
| Mr S. Holroyd | 5 years service. |
| Ms A. Quarterman | 3 years service. |
| Dr C. T. Scrutton | 2 years service (second term on Council). |

All have contributed greatly to the successful and efficient running of the Society and it is hoped that they all will continue to be active members of the Society.

A big thank you is well deserved to all those who, over the last year, have supported and facilitated the smooth running of the Society, especially the local organizers, the speakers and leaders of field meetings. We must not forget Mrs Jo Manning for the organization of the Annual Dinner, which follows this meeting, and to all those helpers and providers for the refreshments during the intervals at the General Meetings. Finally, I thank the authorities of the Yorkshire Museum for hosting our Annual General Meeting.

Trevor Morse

1.2. General Treasurer's Report

The full audited accounts for the year ended 31 August 2001, a brief summary of which appears below, were presented to and adopted by the Annual General Meeting.

SUMMARY OF ACCOUNTS

Year Ended 31st August, 2001

| INCOME | | EXPENDITURE | |
|----------------------------|----------------|---------------------------------|----------------|
| Subscriptions | £23,290 | <i>Proceedings</i> | £20,664 |
| Dividends/Interest | £2,121 | Circulars | £4,084 |
| Donations | £893 | Database | £1,400 |
| Sponsorship | £5,000 | Meetings | £779 |
| Other | £19 | New Medals | £1,057 |
| | | To Conference | £5,000 |
| From Reserves | £2,505 | Miscellaneous | £884 |
| | <u>£33,828</u> | | <u>£33,828</u> |
| ASSETS at 31.8.01 | | Cash allocation: | |
| Investments (Valuation) | £16,123 | Reserved for <i>Proceedings</i> | £17,416 |
| Cash at Banks/Bld. Society | £30,385 | General Reserve | £14,130 |
| | <u>£46,508</u> | | <u>£30,385</u> |
| Total Assets | £46,508 | Total Cash | £30,385 |

Mike Allderidge

1.3. Programme Secretary's Report

The society once again organized a diverse selection of indoor meetings. The first two concentrated on two of the main agents of natural disaster, massive volcanism and meteorite impact. The former was the subject of the January meeting at Sheffield and the latter was the topic of the Public General Meeting held at Leeds University in February. The March meeting followed with a, by now annual, theme of the latest developments in postgraduate research at universities in northern England.

Unfortunately, the entire schedule of summer fieldtrips had to be cancelled because of the outbreak of foot-and-mouth disease in British livestock, with the consequent closure of countryside access. Alternative trips were organized to see the building stones of Sheffield and to the Yorkshire Museum. It is hoped to re-schedule the fieldtrips in the next few years.

The indoor programme began again with a meeting in honour of Professor Lewis Penny on Pleistocene geology, held at Hull University in October. This event was jointly organized with the Hull Geological Society, who proved once again to be efficient organizers and great suppliers of refreshments. The November indoor meeting, held at the British Geological Survey, Keyworth, covered the chilly theme of Antarctic geology and palaeontology.

The Programme Secretary would like to thank all of the local organizers and speakers at this year's YGS meetings. Next year promises to provide an even busier series of events.

Paul Wignall

1.4. Publication Committee Secretary's Report

Parts 3 and 4 of Volume 53 of the journal were published on schedule in May and November of this year. Some 15 original scientific papers were included. Once again, a wide range of subjects is covered in these papers, dealing with the stratigraphy, palaeontology, geophysical expression, uses and landforms of rocks from Ordovician to Recent in age. Most of the papers relate to the north of England, but this year we have published work on several other areas in Britain and overseas, including the Hebrides, North Wales, the English Midlands, South Africa and the Netherlands. Part 3, a memorial volume to the late Professor Ansel Dunham, was notable, in particular, for the great range of subject matter contained reflecting the devotee's extensive research interests and the great esteem in which he was held. The Part contains the last two papers to be written by Ansel's father, Sir Kingsley Dunham, who regrettably died only a few weeks before publication. One of the principal contributions to the Part reviews the constraints on the genesis of the Northern Pennine Orefield, a subject close to the heart of both father and son, and suggests an origin consistent with a significant range of data. Another highlight of the year's publications, in Part 4, was the multi-disciplinary investigation of ammonites and microfaunas across the Jurassic-Cretaceous boundary that will be of great international relevance.

Many people are involved in the editorial process and I wish to record my thanks to all of them. I have been most fortunate in the support of the referees, the Editorial Board, who give so freely of their spare time, and my co-editor Neil Aitkenhead.

Diana Swan, our Production Editor at the Geological Society Publishing House, is thanked for her excellent efforts in the final production stages. We should also acknowledge the assistance given in recent years by the former Publications Manager of the Publishing House, Mike Collins, and wish him well in his new employment at Cork University Press.

Council has continued to give consideration to the possibility that our *Proceedings* should be published online, in addition to the familiar printed version. The staff at the Geological Society Publishing House have been particularly helpful in this matter. Council is in favour, in principle, of taking this step, but feels that the present is not an appropriate time to make the required financial commitment. The situation will be considered again in 2003. This is an issue on which member's views would be most welcome.

Last, but by no means least, our thanks should once again go to Paul Kabrna for his excellent work in producing our Circulars, of which 7 (Nos 493–499) appeared during the year. Also to be acknowledged is Paul's continued outstanding contribution to the development, enhancement and success of the Society's web site. The numbers accessing the site (c. 146,000 between October 2000 and November 2001) have grown more than three-fold since last year, emphasizing once more that this is now the most immediate means of communication with many of our members and the wider public, both at home and abroad. As last year, most requests came from within the UK, but again a significant proportion is from overseas, with about 40 countries being identified. The Society remains a source of interest to the US military.

Douglas Holliday

1.5. Conservation Committee's Report

The Conservation Group has not met this year due to the health problems of the Secretary who continued to fulfil his role by working from home.

The Conservation Group Secretary has represented the Society on the following bodies:

- Flamborough Head European Marine Heritage Site Management Scheme
- Ryedale and Scarborough RIGS
- Ryedale Windypits Forum and Vernacular Buildings Research Group
- Yorkshire Archaeological Society Quern Research Group

More recently the Secretary has been invited onto The Humber Estuary Shoreline Management Group. The Secretary also hopes to represent the Society at a forthcoming Conference on 'The Biodiversity of Mineral Extraction Sites' to be held at Harrogate in February 2002.

The Conservation Group has been consulted on Local Plans for North Yorkshire Moors National Park and Ryedale District Council. The Group also has been consulted on Planning Changes/applications for several Geological Sites: Golden Hill SSSI (Kimmeridge Formation), Little Weighton Cutting (Chalk) and Middleton Pit (Chalk).

The Future. The work of the Conservation Group in 2002 is to produce a discussion paper for Council so that the terms of reference for the group can be debated. This document can then be made available to future Conservation Secretaries.

Members who would like to become involved in the writing of such a document should contact the Conservation Secretary. We are particularly interested in members with experience in:

- geo-conservation, e.g. RIGS
- geo-education, e.g. geological sites with interpretation
- geo-historical, e.g. industrial archaeology

It is hoped to have a planning day in February to produce the first draft of the document for council to discuss at the Durham meeting in March.

May I take this opportunity of thanking Council for their support over a rather difficult year and I hope that we can now make more rapid progress this coming year.

Richard Myerscough

2. HONORARY MEMBERSHIP

(York, 8th December, 2001)

2.1. Award of Honorary Membership of the Society by the President to

DR DENYS BARKER SMITH

On behalf of Council, it gives me great pleasure to recommend to this meeting that Dr Denys B. Smith should be elected Honorary Member of the Yorkshire Geological Society. Following graduation from the University of Birmingham, Denys pursued a career with the Geological Survey, during which he became acknowledged nationally and internationally for his work on the Permian of north-east England. He has published the results of much of his research in our *Proceedings*. The Society has recognized his scientific endeavours through the award of both the John Phillips (1974) and Sorby (1991) medals; indeed, he is the only person to have been awarded both accolades. However, it is for the many years of distinguished service to the Yorkshire Geological Society that Council wishes to acknowledge by the award of Honorary Membership.

Denys Smith joined the Society in 1957. He served as a member of Council from 1960 to 1973 and from 1977 to 1980; he was Vice President on two occasions (1971–72, 1987–88) and President in 1985–1986. He has always participated enthusiastically in both indoor and field meetings, and has led many excursions to the north-east for the Society. He was instrumental in setting up the Society's Occasional Publication on the 'Geology and mineral resources of Yorkshire', published in 1974. His leadership during his Presidency led to radical surgery on the format of our general meetings and to the formation of the Conservation Committee. He has been a member of the Editorial Board of the *Proceedings* since its inception in 1985. On a personal note, I well recall his sound advice on papers received during my term as the journal's Principal Editor in the early 1990s, and, particularly, the help he generously gave to younger contributors.

I heartily recommend to this meeting that, for his distinguished service to the Society over more than forty years, Denys Smith is elected as an Honorary Member.

Council's recommendation was accepted by the Annual General Meeting, and Dr D. B. Smith was duly elected as Honorary Member.

3. MEDAL PRESENTATIONS

(York, 8th December, 2001)

3.1. Presentation of the Moore Medal by the President to

BEVERLEY MELISE HARLAND B. Sc.

Beverley Melise Harland is the recipient of the Moore Medal for 2001. This medal was established in 1988 by former students in honour of Professor and Mrs L. R. Moore to be awarded 'annually to the student from the north-eastern universities and colleges who is judged to have produced the best final year undergraduate project or dissertation'.

This year, seven universities submitted their best final year undergraduate projects. Over the last few years there has been a trend away from the traditional mapping exercise and this year only one entry fell into this category. As in every year, the standard of entry was very high and presentation of the reports particularly good. The judges like to see the field and laboratory notebooks as part of the competition, but this year a number of entries omitted to send these. However, the competition was very close and the judges had to make a hard choice between four of the entries.

Melise Harland, after leaving school, you spent a number of years working for an electrical and mechanical engineering company. During this time you completed two Open University modules, the Science Foundation Course and Level 2 geology. Having decided that you wanted to do geology full time, you applied for a place at the University of Leeds, from where you graduated in 2001 with a First Class Honours Degree in Geology. In your final-year project, for which you are awarded this medal, you assessed the changes in depositional environment of the Middle Jurassic strata exposed in the classic cliff sections between Cloughton Wyke and Hundale Point, to the north of Scarborough. You produced very detailed sedimentary logs of the rock succession, and analysed a wide range of data, including lithofacies, palaeocurrent data, and fossil assemblages and their diversity. You showed the broad regressive – transgressive nature of the depositional environment there and discussed your results in relation to the overall development of the Cleveland Basin.

You are now a Research Assistant in the Turbidites Research Group at Leeds, run by Dr Bill McCaffrey and Dr Jeff Peakall. In the Fluid Dynamics Laboratory you help to run experiments, and to install, commission and modify equipment. I am pleased to hear that you still manage to do some fieldwork. However, I understand that your research interests are in climate change and sedimentology. You hope to be able to start a Ph. D. study programme next year and that this will lead eventually to an academic career. May I wish you every success in these aspirations.

3.2. Presentation of the Fearnside's Prize by the President to

ALISON MONAGHAN M.A., Ph.D.

The winner of the Fearnside's Prize for 2001 is Dr Alison Monaghan. The Fearnside's Prize was established in 1968 by Professor William George Fearnside to be awarded 'not more frequently than biennially to a person, under 30 years of age on the first of December in the year of the award, who has shown promise in geological research or the geological sciences and who is associated with the north of England by birth, training or locus of researches'.

Alison Monaghan spent her formative years in Cheshire, in the shadows of the Peak District. You attended Macclesfield and Henbury County High schools, where you gained straight 'A's in GCSEs and A-levels. Your early enthusiasm for the sciences, and geology in particular, led you to read Geological Sciences at the University of Cambridge where you achieved a First Class Degree in 1994. Your geological skills were recognized then in the award, by the University, of the Wiltshire Prize in 1993 and the Harkness Scholarship in 1994.

Alison's main interests at Cambridge were basin analysis and tectonics and this led to a Ph.D. studentship at the University of Edinburgh, supervised by John Underhill, John Dixon and Alistair Robertson. There, you carried out a multi-disciplinary study on the relationship between extension, sedimentation and arc-magmatism along the Oligo-Miocene Sardinian Rift. This resulted in a re-assessment of the regional tectonic significance of this rift system in the evolution of the western Mediterranean. You were awarded your Ph.D. in 1997 and have published several highly respected papers on this work in major international journals.

You joined the British Geological Survey in 1997 and are based in the Edinburgh office. There you are involved in several projects in the Midland Valley of Scotland, including the geological mapping of the Ayr district. Your interest and expertise in basin analysis and sedimentology led you to be selected to lead the onshore 3D-modelling work for the high-profile Digital Geoscience Spatial Model project in the Midland Valley. This work includes the development of a system for digital modelling of key stratigraphical surfaces from borehole, mine abandonment plan, outcrop and seismic data, and you have co-authored many Geological Survey reports detailing this work. You are also a co-supervisor of a CASE-studentship working in the Midland Valley.

Alison, at the age of 28, you have already demonstrated exceptional ability in your scientific endeavours. You are highly regarded by your peers and managers alike. Your enthusiasm for your science and your record to date show that you have great promise in geological research. The Society wishes you every success in the future.

Alison Monaghan, it gives me great pleasure to present you with the Fearnside's Prize for 2001, on behalf of the Yorkshire Geological Society.

3.3. Presentation of the Sorby Medal by the President to

JAMES IAN CHISOLM M.A.

The Sorby Medallist this year is James Ian Chisholm. The Sorby Medal was established in 1960 by Professor William George Fearnside to be awarded not more frequently than biennially as 'an acknowledgement of either (i) distinguished contribution to geological knowledge of Yorkshire, or (ii) distinguished contributions to geological knowledge by a person associated with Yorkshire and the north of England by birth, training or locus of researches'.

Ian Chisholm was educated at Leeds Grammar School and won a Hastings Scholarship in Natural Science at The Queen's College, Oxford. He delayed taking up the scholarship to complete his National Service in the Royal Air Force. Afterwards, he undertook his studies and was awarded a First Class degree. He joined the Yorkshire Geological Society in 1959 and recently has served on its Council.

Ian joined the Geological Survey at its Edinburgh Office in 1960 and spent the first part of his career working on the Devonian and Carboniferous volcanic and sedimentary rocks, and Quaternary deposits of Fife. During this time, he spent many hours logging several kilometres of borehole cores. He helped to complete a comprehensive resurvey of the Fife Coalfield and he is a joint author of the esteemed East Fife Memoir.

A transfer to the Survey's Leeds Office in 1971 enabled Ian to develop further his established expertise on the Carboniferous by investigating the geology of the Pennines and adjacent areas. He was promoted to Principal Scientific Officer in 1972. Later, his scientific leadership potential was rewarded with promotion in 1982 to Senior Principal Scientific Officer in charge of the Yorkshire and East Midlands Unit. For the next ten years he managed the staff and science programmes of a number of different field units within the Survey. This included a return to Edinburgh, following closure of the Leeds Office, this time managing the Survey's work in the Central Lowlands. Much of the work undertaken by the unit at that time involved surveys of the sand and gravel resources of the area on behalf of the Scottish Development Department. He transferred to the Keyworth Office in 1990 as head of the Central England Unit and then became Regional Geologist for north-east England and the Midlands.

However, Ian was never really happy in an administrative role, and in 1992 he decided to relinquish his management post, stepping down a grade so that he could concentrate on science. He was able to return to field mapping, but he was also 'rewarded' with the post of Divisional Editor for the Eastern England Group. After Ian's retirement in 1997, he was appointed an Honorary Research Associate of the British Geological Survey, a position that allows him to continue his research on the Coal Measures and on the provenance of Carboniferous sandstones. During this time he also wrote the chapter on Westphalian rocks and contributed to other chapters of the Pennines and Adjacent Areas Regional Guide.

Ian, you have conducted much of your research in northern England. You contributed significantly to the mapping of the Buxton, Ashbourne and Huddersfield sheets, the Cheadle Coalfield and to updating the six-inch maps of the Manchester urban area. A succession of papers has come from this work on Upper Carboniferous themes. These have contributed enormously to our understanding of sedimentation and palaeogeography in Late Carboniferous times. You were the first to recognize the role of growth faulting in the development of some Namurian deltaic successions. You also made novel contributions to our knowledge of trace fossils and sequence stratigraphy. Most importantly, you have elucidated in great detail the complex pattern of evolving sediment provenance across the Pennine Basin through Late Carboniferous times. These provenance studies have radically altered our views on the Namurian and Westphalian palaeogeography of the British Isles and surrounding areas. The work has involved the application of several sophisticated analytical methods, an approach that would have been much appreciated by Henry Clifton Sorby himself. For the strong focus on the north of England during your work, and your sustained and important contribution, the award of this Society's highest accolade is well deserved.

Ian Chisholm, it gives me great pleasure to present you with the Sorby Medal for 2001, on behalf of the Yorkshire Geological Society.

4. SOCIETY CTIVITIES, 2001

4.1. Indoor Meetings

January 20th: Sheffield: General Meeting

Giant volcanic provinces and their environmental effect

D. A. JERRAM: The volcanology and facies architecture of flood basalts.

A. SAUNDERS: The North Atlantic Igneous Province: a melting plume, but no evidence for a meltdown on the global ecosystem.

D. W. JOLLEY: Growing palms and cashews on the Isle of Mull; Palaeogene swamp floras and the dating of the North Atlantic Igneous Province.

M. WIDDOWSON & S. KELLEY: The duration and timing of the Deccan continental flood basalt (CFB) volcanism.

February 17th: Leeds: Public General Meeting

Meteorite impacts on earth

I. McDONALD: Earth bombardment.

P. BLAND: Meteorite impact rates on earth.

March 17th: Durham: General Meeting

Current postgraduate research

J. HOWE: The palaeoecology of plants from the Cretaceous fossil forests of Alexander Island, Antarctica.

C. ROBINSON: The application of GIS to archived engineering geological data in the evaluation of potential development sites within Tyne and Wear.

K. LEMON: The Yoredale cycles: a story untold.

D. MORETON: A Spanish analogue for the Carboniferous redbeds of the UK, southern North Sea.

October 13th: Hull: Joint meeting with Hull Geological Society

Lewis Penny Memorial Meeting

J. W. NEALE: A brief introduction to the life and work of Dr Lewis Penny.

J. A. CATT: The Pleistocene glaciations of Yorkshire.

P. WORSLEY: Interpreting Pleistocene palaeoclimates using relict permafrost structures.

D. SCHREVE: Pleistocene mammals – a key to correlation.

A. J. LONG: Late Quaternary relative sea-level, crustal rebound and the dynamics of the Greenland ice sheet.

Fossil displays:

S. JONES: Derived fossils from the Boulder Clays of Holderness.

LEWIS PENNY COLLECTION: Specimens curated at Hull University.

November 3rd: Keyworth: General Meeting

Antarctica: geology and palaeontology

J. A. CRAME: The K–T boundary in Antarctica.

J. E. FRANCIS: Cretaceous and Tertiary forests in Antarctica: a polar paradise in a greenhouse world.

J. L. SMELLIE

Middle Cenozoic uplift and unroofing/backstripping history of the Transantarctic Mountains.

J. B. RIDING

A review of the Mesozoic–Cenozoic palynology of the James Ross Basin, Antarctica.

December 8th: York: Annual General Meeting

Presidential Address

D. MILLWARD: Ordovician magmatism in the English Lake District.

4.2. Field Meetings

Field meetings scheduled to take place around the Cliviger, Humber Estuary, Sellafield and Haweswater areas all had to be cancelled because of the epidemic of foot and mouth

disease. Instead, the following limited programme took place:

June 9th

A geological walkabout in the centre of Sheffield.

Leader: P. Kennett.

June 30th

Yorkshire Museum.

Leaders: P. L. Manning & W. B. Watts.