

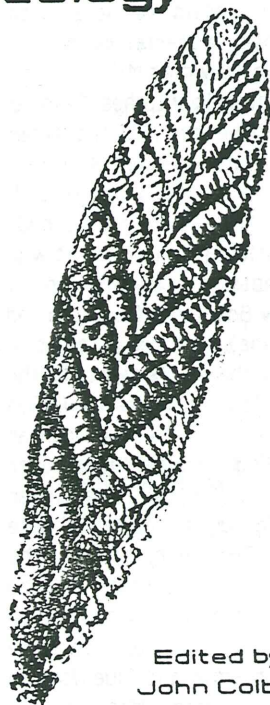
Newsletter of the
Leicester

Literary and Philosophical Society
Section C

Geology

**Early Spring
1992**

Charnia



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Meetings

It is very encouraging to find the number of people attending Lit & Phil meetings on the increase. The content of the meetings has not changed, the speakers are just as interesting, but we get there a little bit earlier to have coffee and discuss the displays provided by members. A note in the diary mentions these.

A phone call or so to Alan Dawn has given preliminary details of the Summer's field trips - some now on Sundays instead of Saturdays in accordance with the results of last year's survey of members. As this change has been made, please give your support by turning up at the field trips.

NOTICE OF A.G.M.

The Annual General Meeting of the section will take place on Wednesday 25th March 1992 at 7.30 pm in the Council room of the Leicestershire Museum. The minutes of last year's A.G.M. and the agenda for this year will be available at the meeting. If you have any matters for the agenda would you please communicate them to the Secretary, Mrs Elizabeth Bellamy, in advance of the meeting.

**Dr Trevor Ford
on Blue John**

**Frodingham
in the summer**

Dawn of the Dinosaurs - all the events

Diary

**Lectures, Field Trips, Residential
Trips - and booking for the Day School**

Blue John

Dr Trevor Ford

Blue John is a variety of fluor spar reputed to be found only at Castleton in Derbyshire. It is a blue-to-purple and white-to-yellow variety used for ornamental purposes. Pure fluorite (the mineral is strictly fluorite CaF_2 , whilst the commercial product of fluor spar) is colourless and transparent, but varieties come in almost every colour of the rainbow. Derbyshire varieties include white, yellow, pale and dark red, greenish (very rare), blue to purple, and black. Many fluorite crystals are host to inclusions, either aqueous (usually very salt water) or gaseous giving a frosted appearance, or with numerous brassy sulphides, mainly pyrite, chalcopyrite or bravorite, giving a turbid clouded appearance.

Blue John is found in veinlets lining open joints, ancient caves or voids between limestone boulders in a boulder bed mantling Treak Cliff. It occurs in radiating crystalline masses displaying various patterns of blue to purple bands. These patterns are known as fourteen veins which are mined in different parts of the hill and used in various types of ornament. The different patterns appear to result from a varying supply of material enclosed as inclusions and in varying growth rates of the crystals. These in turn probably depend on the vagaries of the plumbing system by which the mineralising fluids moved through the rocks.

Long regarded as a unique material, very similar banded fluor spars are now known elsewhere, mainly in Nevada, USA, China and Iran. However, those familiar with Blue John can spot the differences with these other spars without difficulty.

Reputed to have been known to the Romans, no evidence of their use of Blue John has ever come to light. It was first recorded as a distinctive material about 1700 (though

probably known to the lead miners long before), Blue John is known to have been mined as an ornamental material by around 1750 in what was then known as Miller's Mine where Treak Cliff Cavern's Witches Cave is now; this mine may have been named after some unknown miner but no record survives, but one of the finest Blue John veins is still worked there as Miller's Vein. Within a decade Blue John attained national fame when it was used as the core material for his ornamental ornaments by Matthew Boulton (of Boulton and Watt steam engine fame). Boulton attempted, unsuccessfully, to buy the whole rights to the Blue John mines in 1768. Also in the 1760s the architect Robert Adam used Blue John as an inlaying and panelling material in his house designs. Fireplaces at Kedleston Hall near Derby, and the Georgian House in Bristol date from this period. In 1765 Henry Watson, the prime marble worker of Derbyshire, had no less than sixteen separate Blue John Mines on Treak Cliff. He supplied rough stone to some thirty firms working marble and Blue John in Castleton, Bakewell, Buxton, Matlock and Derby. A multitude of vases, bowls, tazzas, jars, boxes, plates, plaques and jewellery soon followed and were in fashion from the late 18th century to the present day. Modern demand is mainly for jewellery and small ornaments, particularly bowls.

The cause of the colour of Blue John has led to much controversy. Once thought to be due to the presence of manganese, analysis has disproved this. Organic matter is undoubtedly present and has been claimed as the source of the colour but extracting and identifying the organic compounds has failed to come to any definite conclusion. Others thought that the effects were caused by varying temperatures of crystallisation but this too seems unlikely in the light of fluid inclusion studies. More recently

physico-chemical tests using a variety of sophisticated methods have suggested that the cause of the colour is distortions of the molecular lattice due to radiation damage. The surrounding rocks, mainly the basal Edale Shales, contain small uranium-bearing phosphatic nodules and the uranium could have been mobilised by the mineralising fluids. The distortions apparently yield excess calcium or fluorine atoms in different parts of the fluor spar. However these are not colouring agents in themselves and it may be that the colour is more of an optical effect of the lattice distortions. It is possible that the mobilised uranium was absorbed on to the organic materials now seen as inclusions, and thus the distortions are greatest where the organic inclusions are densest, whilst neither is the direct cause of colour itself: again this

hypothesis still awaits proof. If organic matter (with uranium) were included in the growing crystals (with varying growth rates) it could explain the colour banding by varying intensity of lattice distortion, but it is far from clear why the colours are consistently blue or purple. Heating Blue John will decolourise it, by both driving out the organic matter and by re-setting the crystal lattice, but subsequent bombardment in an atomic pile will bring back the colour bands by recreating lattice distortions and reproducing the same colour bands!

Blue John is a fascinating material and its story is not yet fully told. Anyone who possesses a Blue John bowl should, in the words of the Duke of Devonshire, "cherish it like a baby - it should not be dropped".

DAWN OF THE DINOSAURS

in
LEICESTER

slipped the Dinosaurs into the written version of the talk published in 1842, so we are celebrating the real 150th birthday of the dinosaurs!

The exhibition, which has been at Plymouth City Museum, shows what it was like for Victorian scientists studying fossils. It also looks at today's ideas about dinosaurs and their Triassic contemporaries such as rhynosaurs and marine reptiles. As much of Leicestershire lies in Triassic rocks, the exhibition is highly relevant to the local area.

A special exhibition, "The Dawn of the Dinosaurs", is coming to New Walk Museum, Leicester, from 29 February to 26 April 1992. It will be about the origin of the dinosaurs during the Triassic Era 240 million years ago, and the discovery of the dinosaurs 150 years ago.

The great scientist Richard Owen realised that the English fossils he was studying were the remains of strange animals, larger than living reptiles such as lizards and he called them the Dinosauria, from the Greek for Terrible Lizard. Everyone has assumed that Owen announced his discovery at a lecture in Plymouth in 1841 - hence the dinosaur stamps, TV series and books that have come out to mark this sesquicentenary in 1991. But the latest research shows that he actually

We plan a series of events including possibly:

- ☐ public opening and fossil festival
- ☐ family lectures
- ☐ children's holiday activities
- ☐ adult education classes
- ☐ free information leaflet
- ☐ collaboration with Leicestershire Libraries and Information service













Gallery sessions and workshops will be offered. Information sheets in Braille and the main Asian languages are in preparation. There will be an entry charge of £1.00 (50p for children and unwaged).

Diary 1992

The diary is of a slightly different format this time round. We've been concerned that it has been getting a little difficult to follow as we've been including many events in the region which you might wish to attend. Consequently, we are separating the date and organisation line at the head of each trip/event, separating the months and coding the organisation responsible. Please remember that we are invited to attend other societies events, but it would be advisable to telephone the organiser beforehand to check.

Most Open University Geological Society field trips attract a fee of 50p, plus an extra 50 for non-members to cover insurance.

KEY: for OUGS trips and DINO days

-  O.K. to bring dogs
-  O.K. to bring children *
-  O.K. to bring young children *
-  Bring packed lunch
-  Fair amount of walking
-  Quarry or site which need hard hats
-  Pub stop at lunchtime
-  Scenic area
-  Fossiliferous locality
-  Early or time critical start
-  Phone before coming
-  Booking required

ORGANISATIONS

LIT&PHIL - Leicester Literary and Philosophical Society, Section C, Geology.

OUGS - Open University Geological Society

OU - Open University event

DINO - Dawn of the Dinosaurs Special Event

EMGS - East Midlands Geological Society




STAMFORD - Stamford and District Geological Society.

FEBRUARY

Wednesday 26th LIT&PHIL - Lectures

Members Evening - Members short talks. Meet in the Council Room of Leicestershire Museum (Back Entrance) Princess Road West, Leicester. Non-members 50p. Coffee at 7.00pm, meeting 7.30pm

Saturday 29th LIT&PHIL/DINO - Display

   **The Dinosaur's Birthday Party** is the opening of the Dawn of the Dinosaurs exhibition, coming to Leicester from Plymouth. The Lit & Phil will have a stand at the opening, and it's a chance to talk geology all day! Leicestershire Museums are publicising this very well, and we are asking for volunteers to man the stand for part or the whole of the day. The venue is Leicestershire Museum. If you can volunteer, please contact us. The exhibition opens at 10.00am with a grand opening by Dr David Norman, Director of the Sedgwick Museum.

The Dinosaurs birthday party will include:

- ☐ 150th Birthday cake
- ☐ Special displays of fossils and minerals
- ☐ Identification sessions
- ☐ Hands on displays
- ☐ Curation of fossils
- ☐ Videodisc of Geology
- ☐ University Geology Department
- ☐ Dinosaur facepainting
- ☐ Dinosaur quizzes
- ☐ Videos of fossil reptile finds

MARCH

Monday 2nd LIT&PHIL - Lecture



Radon in Midland Sedimentary Rocks, Dr Diane Sutherland of Leicester University. Joint parent body meeting. Dr Sutherland has been researching the emanation of radon gas from sedimentary rocks in the East Midlands. Meet in the Council Room of Leicestershire Museum (Back Entrance) Princess Road West, Leicester. Non-members 50p. Coffee at 7.30 pm, meeting 8.00pm

Thursday 5th DINO - Teacher's Seminar

 **A look at the Dinosaur gallery** and how to use it.

Contact Kate Pontin. (0533) 554100

Saturday 7th DINO - Lecture


  **The Dawn of the Dinosaurs - Dr Michael Benton**, University of Bristol. The first dinosaurs and their life. Leicestershire Museum and Art Gallery, New Walk, Leicester. This lecture is for children and adults alike, and lasts about 40 minutes. No booking required, just turn up. 11.00am.

Saturday 7th EMGS - Lecture

The Jurassic Coal Measures of Iran - Mr R. E. Brown, British Coal. Lecture Theatre in the old Geology Department, University of Nottingham. 6.30pm

Contact Jack Fryer (0400) 81585

Tuesday 10th DINO - Teacher's Seminar

 **A look at the Dinosaur gallery** and how to use it.

Contact Kate Pontin. (0533) 554100

Wednesday 11th LIT&PHIL - Lecture

Geology and Mineralogy of the Caldbeck Fells, Dr Bob King of the John Moore Museum, Tewkesbury. Sometime curator of Leicester University Museum and President of the Lit & Phil Geology Section, he will be talking on the minerals of Caldbeck, an area of Cumbria. A wide selection of interesting minerals have been found and mined in this area, and it is a famous locality for geologists worldwide. Meet in the Council Room of Leicestershire Museum (Back Entrance) Princess Road West, Leicester. Non-members 50p. Coffee at 7.00 pm, meeting 7.30pm

Thursday 12th STAMFORD - Lecture

Slumping, Induced and Natural, Dr Tony Waltham, Stamford School Science Laboratories, 7.30pm.

Contact Pauline Dawn (0780) 64714

Saturday 14th DINO - Day School

The annual day school presented by Vaughan College in association with the Lit & Phil.




Dawn of the Dinosaurs - Dr Mike Benton (University of Bristol) & Dr Arthur Cruikshank (Leicestershire Museums) - a look in more depth at what

the Victorians and today's scientists think about dinosaurs, their origin, life and extinction, the weird menagerie of contemporary animals, and the effects of dinosaurs on evolution, including our own beginnings. The course will cover as many aspects of dinosaur biology, evolution and extinction as can be dealt with in a day. There will be a natural progression from ancestral groups of the dinosaurs through their early representatives, the radiation to dominate the terrestrial niches of the Mesozoic Era, to their final extinction - whimper or bang? This talk is being repeated in Birmingham on April 11th.

At Vaughan College, St Nicholas Circle, Leicester, cost £11.00 or less 10.00am - 4.30pm. Closing date for enrolment Tuesday March 10th. Form enclosed with this Charnia.

Contact Vaughan College (0533) 517368

Tuesday 17th, Wednesday 18th and Thursday 19th DINO - Schools Introductions

   **Half hour talks** for classes introducing the dinosaur exhibition. Leicestershire Museum


Contact Kate Pontin. (0533) 554100

Thursday 19th DINO - Lecture


The History of Dinosaurs - 150 years of manic metaphor - Dr Hugh Torrens, University of Keele. Arranged by the Department of Geology, University of Leicester and Leicestershire Museums Service. At the Bennett Lecture Theatre, University of Leicester. Free - all welcome, but please note that this is only suitable for adults and interested teenagers. 7.00pm.

Contact Museum (0533) 554100

Saturday 21st DINO-Lecture

 **Working with Dinosaurs - Dr David Norman**, University of Cambridge. What its like to have a job with them. Leicestershire Museum and Art Gallery, New Walk, Leicester. This lecture is for children and adults alike, and lasts about 40 minutes. No booking required, just turn up. 11.00am.


Sunday 22nd OUGS - Field Trip

 **Basic Geology** Designed for those who are just starting out with geology, we aim to provide an extensive basic introduction. However, those with more experience will also find something for them, as we'll be going somewhere we haven't been to before. Starting off in Tideswell Dale, jump into a warm sea, viewing limestones with their attendant fossil assemblages - see what a brachiopod looks like in the flesh - get a view of corals - look at bedding and stratigraphy and decide in what type of environment the rocks were laid down. Look at basalts, study the effect of ancient volcanoes and interpret what you see. Then a stop for lunch and a trip to an environment nearer land, a delta (sandstones and shales) and an exhumed topography and an oil reservoir. After all this you can go down the Blue John Mine with a guided tour (for geologists rather than tourists) if we get enough people. The trip to the mine takes you inside a mineralised vein so you can see how they were formed. However, if you don't fancy going underground lots of other geology to see like a landslip, a fossil scree slope, an exhumed topography, turbidites and faults.

We've planned this day to give as broad a view of geology as possible. In order to go down the Blue John mine and get party rates (party £2.50, normal £3.50) we'll need to get enough people. Please phone as soon as possible to let the organiser know. This is designed to be a busy day and if the weather is good we'll see some of the best scenery in Derbyshire. Maps: (not compulsory) Outdoor Leisure

(1:25000) 24 - White Peak and 1 - Dark Peak Alternatively Tourist map (1:63360) of the Peak District. We'll be providing plenty of field notes. Meet at Tideswell Dale Car Park (not the one in the village) SK154742 at 10.00am. Contact John Colby, (0455) 290271

Tuesday 24th and Wednesday 25th DINO -

Schools Introductions  **Half hour talks** for classes introducing the dinosaur exhibition. Leicestershire Museum. Contact Kate Pontin, (0533) 554100

Wednesday 25th LIT & PHIL -

AGM & Lecture

Annual general meeting followed by Chairman's address - **The Geology of H₂O - Colin Green** of Severn Trent. History of water in Leicestershire from Roman times, reservoirs and why they are where they are, engineering problems associated with reservoir construction and archeological finds during reservoir construction. Colin also has dealings with sheep! Meet in the Council Room of Leicestershire Museum (Back Entrance) Princess Road West, Leicester. Non-members 50p. Coffee at 7.00 pm, meeting 7.30pm

Saturday 28th DINO - Lecture

 **Bringing dinosaurs to life - Mr John Martin**, Leicestershire Museums. How artists and scientists get together for beautiful and exiting pictures. Leicestershire Museum and Art Gallery, New Walk, Leicester. This lecture is for children and adults alike, and lasts about 40 minutes. No booking required, just turn up. 11.00am.

Contact Museum, (0533) 554100

APRIL (* = alternative dates)

Sunday 5th LIT & PHIL Field Trip *

Mountsorrel - led by Dr Mike le Bas of Leicester University (This trip could be on April 12th). Go below sea level in Leicestershire.


Contact Alan Dawn (0780) 64714

Thursday 9th STAMFORD - Lecture

Precious Metals and their Mineralogy - Dr Rob Ixer, Stamford School Science Laboratories, 7.30pm.

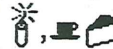
Contact Pauline Dawn (0780) 64714

Saturday 11th DINO - Holiday Event

 **Phone the Dinosaur Hotline (0533) 554100 to find out more.** Leicestershire Museum and Art Gallery, New Walk, Leicester.


Contact Museum, (0533) 554100

Sunday 12th LIT & PHIL Field Trip *

 **Mountsorrel - led by Dr Mike le Bas of Leicester University** (Alternative date April 5th). Go below sea level in Leicestershire.

Contact Alan Dawn (0780) 64714


Sunday 12th OUGS - Field Trip

 **Mapping.** Mapping a slice of Derbyshire. The Ashover Dome is our target. You'll be given a topographic map, and led around the area. You can make your own observations, measurements and inferences. This is an intensive technical day.

For those who want to come on a field trip and not do the mapping there is still a lot - the extensive mineralisation, the superb fossils, the views and the history all around you of the lead industry, the history of the canals, the coming of the railways and the social class divisions in Derbyshire Society - all this from looking at the graveyard! Ashover is a compact area, well supplied with the necessary facilities in which you can see geology. Bring all the necessary field kit, especially clino and lens. A clipboard is very useful if you can bring one for mapping - it tends to be a bit flatter than your knee. Leaders Peter Greaves and John Colby. Meet at the car park in Ashover, SK350632. Map 1:25000 Pathfinder 761, SK36/37, 10.00am.

Contact John Colby (0455) 290271


Monday-Saturday 20th - 25th OUGS

 **Caledonia 92 - Assynt**

We've managed to persuade the hotel to let us have another three beds, but even so there are only two places left on Dave Wright's four day extravaganza to one of the classical areas of British Geology. See the oldest rocks in mainland Britain at 2800 Ma! Put your hand on the Glencoul Thrust Plane - and be amazed by all the gneiss things you'll see. Cost £180.00, £20.00 deposit required immediately. See article for more details. Those already booked will soon get another mailing containing more questions and joining instructions.

Contact Sandy Colby, (0455) 290271

Thursday 25th DINO - Lecture

 **The detective and the dead dinosaurs - Dr David Martill**, University of Leicester. Who done it to the poor dear beastie? And what happened when they went extinct? Leicestershire Museum and Art Gallery, New Walk, Leicester. This lecture is for children and adults alike, and lasts about 40 minutes. No booking required, just turn up. 11.00am.

Contact Museum, (0533) 554100


MAY

Saturday 9th LIT & PHIL Field Trip

 **Whittlesea**

Contact Alan Dawn (0780) 64714


Sunday 17th OUGS - Field Trip


 **South Ferriby and Scunthorpe Museum, South Humberside, led by Dr Simon Knell**, keeper of Geology at Scunthorpe Museum. Simon led us on a superb trip last year to the Frodingham Ironstone, and during that trip offered to take us again. South Ferriby Quarry is an exposure of the Upper Jurassic (c155Ma old) and is an interesting fossiliferous locality. The mudstones include beds of the annelid *Serpula tetragona*, and large ammonites, *Amoeboceras*, *Decipia* and *Perisphinctes*.

Don't worry if you don't know what these are - you'll find out.


Last year on Simon's trip we collected a multitude of very attractive fossils - quite freely as the site is actively being quarried and/or filled. The new geology display at Scunthorpe Museum will also have been completed by this time, and a visit to this is planned. Meet at Scunthorpe Museum, Oswald Road, Scunthorpe, 10.30am. (the museum is signposted). Fuller details in next Chippings.
Contact John Colby, (0455) 290271

JUNE
Sunday 7th OUGS - Field Trip

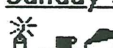
 Locality to be decided, possibly a fossil hunt in the Peterborough area. We await permissions. Next Charnia for details.
Contact John Colby (0455) 290271


Saturday 20th OU - Open Day, Walton Hall
 The Open University Earth Sciences Department is one of the top institutions in the U.K. See the various instruments, the remote logging, the image interpretation from satellite, visit the thin section lab. Frolics and festivities start at around 10.00am. Reach Walton Hall from the M1, junctions 14 or 13.
Contact John Colby, (0455) 290271

Wednesday 24th (evening)
LIT & PHIL Field Trip
Stamford Stone Trail
Contact Alan Dawn (0780) 64714

Sunday 28th OUGS - Field Trip
 **Family Field Day** Every year the East Midlands tries to have a trip where the whole family can come along. We've even managed to find some regular attenders. This year we hope to try a traverse of the Vale of Belvoir - not too much walking, interest for everyone and the

proximity of Belvoir Castle. Meet and details by next Charnia.
Contact John Colby (0455) 290271


JULY
Sunday 5th LIT & PHIL Field Trip
 **The Ashover Anticline**
Contact Alan Dawn (0780) 64714


Friday-Sunday 10-12th
OUGS Symposium
 **Roches sans Frontiers - connecting Britain and Europe.** The 1992 Symposium will be held at the University of Exeter and will deal with the geological connections between the British Isles and Continental Europe. Symposia have attracted some very good quality speakers and some high quality trips.
Contact Polly Rhodes (0428) 725003


Wednesday 24th (evening)
LIT & PHIL Field Trip
Ketton Quarries
Contact Alan Dawn (0780) 64714


AUGUST
Sunday 24th LIT & PHIL Field Trip
Newark
Contact Alan Dawn (0780) 64714

SEPTEMBER
Sunday 6th LIT & PHIL Field Trip
Cavedale, Odin's Mine and Dirtlow Rake, near Castleton.
Contact Alan Dawn (0780) 64714

Sundays 13th or 20th OUGS - Field Trip
 **Dove, Manifold and Churnet Valleys, Peak District.** The years last look at limestones and lavas, corals and crinoids, brachiopods and bryozoans.
Contact John Colby (0455) 290271

OCTOBER
Sunday 25th OUGS Collyweston
 **Jurassic Jaunts in the Oolite.** Post exam trip to the south led by Carol Warcup.

NOVEMBER
Tuesday 10th OUGS Local AGM
 The usual business meeting followed by refreshments and a talk.

DECEMBER
Friday - Sunday 4th-6th OUGS - Snowflake
 **Snowflake 92 - Weekend in The Welsh Marches led by Jill Smethurst.** Many rocks and rock types - many places to visit, but we haven't decided where to go yet. Nor the cost, nor the hotel. Details will be more or less concrete by the next Charnia (April-ish).
Contact Sandy Colby (0455) 290271

And in 1993
April
Open University Geological Society Residential trip to the Caldbeck Fells (provisional)
June/July
Open University Geological Society Symposium 93 at St Andrews University.
December 3rd-5th
Open University Geological Society Winter Weekend

At the stage of publication only the basic details are available regarding the Summer Programme. The details are to be confirmed, and should be available by the section's AGM in March. It is only by the good offices of Alan Dawn that we are able to stage these trips, which are held with the Stamford and District Geological Society. Lit & Phil members have been sadly outnumbered on all of last year's trips by both members of other societies. If you wish that field meetings should continue, please show your support.

Transport.
In the survey made last year in Charnia some members expressed difficulty with transport when wishing to come on field trips. If you have any such difficulty, then please contact the editor, John Colby, on Market Bosworth (0455) 290271 who will try to arrange a lift for you.

Kit and Safety
Most field trips of the Lit & Phil venture into quarries or other places where safety equipment in the shape of hard hats are required. If you haven't got one don't worry - we do have some to lend out, but it does depend on the right people coming on the field trips! Most DIY stores have a basic plastic lined hard hat at about £3.00 - £3.50, but to be legal it must be to BS5240 part 1. Bump caps are no use at all (these are part II spec). Also for hammering rocks you should have some sort of eye protection - goggles or protection to BS2092. If you are going to do a lot of close rock work then a full face visor hung off the hard hat is not a luxury and more comfortable than goggles - the only disadvantage being that its larger and more difficult to carry around. They also cost more - my own kit (hard hat plus visor) is currently listed at around £20.00 - but then I'm probably out in the field more than most amateurs.

Displays
Before most Lit & Phil meetings the table just inside the door is given over to displays - so far in 1991-2 mostly provided by the editor. We wish to continue this practice, so if you have a collection or display which will occupy the tables, and are prepared to bring it in, please do so. You will need to be at the Museum before 7.00 pm to set it up. It would be a good idea to notify the editor if you are going to do so, as the rocks so far displayed can get a little on the large side - with me the term hand specimen does not exist - or so my wife will tell you! One expression of this was last Easter when friends coming up a 150ft cliff deposited the contents of my rucksack at her feet. No enquiries if anything was wrong but "What the **** 's he got now!"

Frodingham

A large number of enthusiastic members of the OUGS and their friends turned up at Scunthorpe Museum on Sunday August 19th to investigate the Frodingham Ironstone. The weather was superb as we convoyed to our first location, Conesby Mine, led by Dr Simon Knell and his assistant Sue.

The Frodingham Ironstone was deposited in the lower Jurassic over a period of three to four million years. At this time, 200 million years ago, Britain was much nearer the equator, covered by shallow seas and experiencing sub-tropical conditions. This resulted in the deposition of sand, mud and minerals from the northerly, forested Scandinavian continent and these formed the Lower Jurassic rocks. The major cycles of deposition are:

Upper Coleby Mudstones (Upper Lias
shales/mudstones)
Marlstone Rock Bed (Middle Lias Ironstone)
Middle Coleby Mudstones (Lower and Middle
Lias clays and silts)
Pecten Ironstones (Lower Lias Ironstone)
Lower Coleby Mudstones (Lower Lias
mudstones & clays)
Frodingham Ironstone (Lower Lias Ironstone)

The reason for the the concentration of ironstones around Scunthorpe is thought to be the raising of the sea floor around Market Weighton to the north of Scunthorpe. This formed a ridge and the ironstones were consequently deposited in the shallow waters, allowing the particles of mud to travel further south. This is reflected in the deposition patterns as exposed in the quarries around Scunthorpe and further south. It is believed that deposit feeding animals together with reworking were responsible for concentrating the iron and there are certainly many excellent examples of fossils in the quarries and a fascinating display in the museum itself which is well worth a visit.

At our first locality, using the information we had been provided with we eagerly started searching for fossils and they were certainly abundant! There were several good examples of bivalves - Gryphaea in particular. Most of the ammonites were Aegastoceras. These were mostly about 70mm in diameter, although most of the specimens were broken sections. We were then told that some particularly rare species of ammonite had been found at this site, of which about only four had ever been found. We redoubled our efforts but unfortunately, despite consulting our fossil guides could not find any specimens.

Needless to say this gave everyone a good appetite so we adjourned for lunch before renewing our search in an area of loosely consolidated mudstones. This proved good exercise - no sooner did you climb to the top than you slid back to the bottom on the loose shale - but we did find more fossils!

Our final location at Crosby Warren was to see the Pecten Ironstone. We crossed rough countryside in convoy throwing up clouds of dust - with the hot weather it was just like a desert crossing! There were several tumbled rocks encrusted with fossils and the more agile members of the group scrambled up the side of the quarry to look for samples. Others of us took the longer, more scenic route! Crosby Warren provided a marvellous view of the steel works of Scunthorpe which are still in operation today, but using imported minerals.

The Ironstone was discovered in 1859 and mining commenced immediately, mainly using opencast methods, until operations finally ceased in 1988. Already some of the more northern and southern sites are being infilled but it is hoped that some of the quarries will be permanently protected. They can provide so much information on deposition sequences in the Jurassic, together with biological data on the numerous creatures which inhabited the seas at that time.

Alternative Thoughts

Assumption - the mother of all cock-ups.

Organic Chemistry is the study of carbon compounds.

Biochemistry is the study of carbon compounds which crawl.

Coffee - when served on an aircraft it causes turbulence.

Confidence - the feeling you have before you understand the situation.

Law of Probable Dispersal - Whatever it is that hits the fan will not be evenly distributed.

Door - what a dog is perpetually on the wrong side of.

The Earth - is like a tiny grain of sand, only much, much heavier.

Experience - what you get when you were expecting something else.

Fold - What the Post Office invariably do to the valuable photographs, the envelope of which is stiffened and strengthened so that no ordinary mortal can bend it.

Law of Highway Biology - The first bug to hit your clean windscreen lands directly in front of your eyes.

Hindsight - an exact science.

Living on earth may be expensive, but it includes an annual free trip round the sun.

Laughter - the closest distance between two people.

Lava - Froff wot you shaves wiv.

Life - a whim of several billion cells to be you for a while.

Lode - the mass of equipment you take on a field trip.

Mathematician - Machine for converting

coffee into theorems.

Million years - unbelievable accuracy.

Mistakes - the stepping stones to utter failure.

Plagiarism - the unoriginal sin.

Porosity - That function of the neck seam of cagoule which you only discover in the midst of very heavy rain on the top of a mountain, hill or fell miles from any shelter.

Professor - one who talks in someone else's sleep.

Rock - Sand in kit form.

Sattinger's Law - it works better if you plug it in.

Simon's Law - everything put together falls apart sooner or later.

A Sine Curve goes off to infinity or at least to the end of the blackboard.

Streak - A temporary exposure.

Strike - State of brain during examinations.

Volcano - A mountain with hiccups.

If a listener nods his head when you're explaining a theory, wake him up.

If all the students who fell asleep in lectures were laid end to end, they'd be a lot more comfortable.

If the entropy of the Universe is increasing, where's it all coming from?

The most exciting thing to hear in science, the one that heralds most discoveries, is not "Eureka!", but "That's funny."

All things are possible except skiing through a revolving door.

What the large print giveth, the small print taketh away.

Pregnant Camels

An aide memoire for remembering the sequence of the geological periods.

Pregnant	Precambrian
Camels	Cambrian
Ordinarily	Ordovician
Sit	Silurian
Down	Devonian
Carefully	Carboniferous
Perhaps	Permian
Their	Triassic
Joints	Jurassic
Creak	Cretaceous
Possible	Paleocene
Early	Eocene
Oiling	Oligocene
Might	Miocene
Prevent	Pliocene
Premature	Pleistocene
Rusting	Recent (Holocene)

Dinosaurs Birthday Party

Takes place on Saturday 29th February. The Lit & Phil has a stand at the party and will be looking for volunteers to man it. If you can volunteer, please contact a committee member (phone number alongside) or if you can't, why not visit the exhibition on the day? If you have already been to the exhibition in Plymouth, don't worry, it will be different (and cost less - the Plymouth admission price was £2.00 against £1.00 in Leicester).

What we didn't find in Plymouth, which we considereed a great pity, was any form of literature back up the exhibition apart from that aimed at children, even in the local bookshops. We are fortunate in Leicester that the University Science Bookshop has a number of people interested in the Earth Sciences in general and dinosaurs in particular. We've gleaned quite a crop over the past few months.

John Colby

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The next issue of Charnia will appear later in the spring. The editor is still appealing for material to go in it!
