

Bulletin

Number 90

July 2009



Diary Dates:

NSGGA FIELD PROGRAMME FOR 2009

Each person attending field meetings does so on the understanding that they attend at their own risk. The Group has Public Liability Insurance through a GA insurance policy which also carries limited personal accident cover for members attending meetings or field trips. Non-members attending Group field trips can become temporary members for the day on payment of a fee of £2.00 in addition to the field fee, otherwise they are advised to take out their own personal accident insurance to the level they feel appropriate.

Note: a field fee of £2.00 per head is charged (for members and non members) to cover leader's expenses.

Sunday 19th July: The Geology of the Malham Tarn and Malham Cove area

Leader: Alan Diggles.

Meet at 10.00AM at Settle (OS Sheet 98 SD 818638), to examine the effect of the Palaeozoic Inlier, the North Craven Fault and Limestones around Malham. Distance on foot about 4 km, packed lunches, stout boots and wet weather gear needed. Staying on the old A65 into and through the town centre, the meeting point car park is by the side of the main road on the left just before the railway viaduct on the way out of Settle.

A minibus is planned leaving from the Earth Sciences Car Park at Keele at 7.30AM. Cost: minibus £16 plus field fee.

Saturday 26th September: Churnet Valley Geotrail (South)

Leader: Dr Richard Waller

Meet at 10.00AM at the Car Park (SK 062432) adjacent to the Ramblers Retreat for two loops of the southern section of the trail, possibly returning to the RR for lunch and then again for tea! For good exposures of the local Triassic sandstones, and the opportunity to visit Toot Hill with its spectacular views of the lower, deeply-incised section of the Churnet valley.

For bookings and further information about the 2009 season of meetings, contact the Field Secretary **Gerald Ford**, Tel. 01630-673409 or e-mail: g.ford@ukonline.co.uk

Winter Lectures Programme 2009/2010

Thursday 8th October 2009 at 7 30 pm Speaker: Dr. Cathy Hollis (University of Manchester)

'Minerals, hydrocarbon and porosity changes: a short history of fluid flow in Carboniferous limestone'

The Lower Carboniferous (Dinantian) has long been the focus for research into the tectono-sedimentary evolution of the UK prior to the onset of the Variscan Orogeny. There have also been many detailed studies on the early diagenesis of these carbonate platforms, and the mineralization that they host. The burial diagenesis of the Dinantian succession has received less attention, however, and yet it provides valuable information on the timing and mechanisms of fluid flow, hydrocarbon emplacement and mineralization within the developing Variscan Orogen. This talk will present a summary of the entire diagenetic history of the Lower Carboniferous, based primarily on studies on the Derbyshire Platform, and discuss how we can use this data to reconstruct fluid flow in a post-rift and compressional regime

Thursday 12th November 2009 at 7 30 pm The Professor Wolverson Cope Annual Lecture

Speaker: Professor Peter Worsley (University of Reading)

'Charles Darwin, the Beagle and Quaternary geology'

During the Beagle voyage Charles Darwin engaged with a range of Quaternary geological features. These included modern calving glaciers, icebergs, coastal uplift, volcanoes and coral reefs. On his return to Britain he encountered the Ice Age hypothesis of Jens Esmark. Following contact with Buckland and Lyell he field tested the land ice hypothesis in North Wales and soon became a mountain 'glacialist', no doubt inspired by his experience of Tierra del Fuego.

Thursday 3rd December 2009 Christmas Social (see October Bulletin for details and booking form)

Thursday 14th January 2010 Speaker: Dr. Richard Waller (University of Keele)

Thursday 18th February 2010 Professor Andrew Willmott (Proudman Oceanographic Laboratory)

Thursday 4th March 2010 AGM and Chairman's address Dr Ian Stimpson (University of Keele)
British Earthquakes

John Myers' Awards 2009

This year's assessment took place on Saturday 13th June, the panel comprising: John Reynolds, Lloyd Boardman, David Osborn, Vicky Tunstall, Eileen Fraser, Elizabeth Hallam, Nick Hulley and Mike Fereday. The panel read through 6 final year undergraduate projects and then discussed each one to decide which was considered to be the best from the 3-year Single/Dual Honours course and the 4-year MGeoscience course.

At the awards ceremony at Keele on Tuesday 7th July, Mike Fereday gave a brief introduction telling those present about John Myers and his work for geology in the area. Ann Myatt, John Myers' daughter was unable to attend so Peter Floyd presented the medals and cheques to the winners and runners-up.

3-year Single/Dual Honours

Winner: Caroline Jones for her "Cantabria NW Spain Mapping Project".
Awarded a cheque for £150 and the John Myers' Medal.

Runner up: Jamie Hansen for his "Cantabria NW Spain Mapping Project".
Awarded a cheque for £50.

4-year MGeoscience

Winner: Julie Boyce for her project entitled "The welded air-fall tuff of the Middle Pumice eruption, Santorini, Greece".
Awarded a cheque for £150 and the John Myers' Medal.

Runner up: Steven Banham for his project entitled "Near-surface geophysical investigations to detect abandoned mine workings, Apedale".
Awarded a cheque for £50.

I would like to express my thanks to the assessment panel and once again to Ann and Terry Myatt for their continued generosity.

Mike Fereday

Some John Myers' Fossils come to light

Dr Peter Copley teacher of physics and geology at Newcastle College has written a brief report concerning a collection of John Myers' fossils used at Wolstanton Grammar School and transferred to Newcastle College in the 1980's.

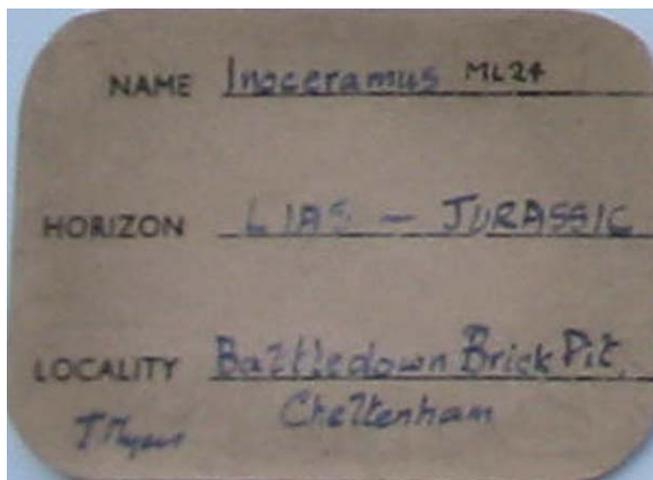


Geology was taught at Newcastle College until about 1990 by a member of the Geography dept, but then financial problems led to it being cut due to small class sizes.

A chance enquiry at an open evening in early 2001 led to the re-introduction of Geology that September, with an initial recruitment of 20 students. The numbers have fluctuated, only four wanting to do it last September. Second year groups have also been generally small, peaking at 10, but usually only about 4 or 5. Every year there has been at least one student (usually more) that has gone to Keele to study Geology. Others have gone to other universities to study it as well.

The move to the new college site later this year and my impending retirement was a suitable time to discontinue the course.

During the summer of 2001, I came across this John Myers' collection. The father of one of my initial cohort was one of the caretakers who had been given the task of clearing out one of the boiler houses for maintenance purposes. He discovered about ten wooden cabinets housing a large geological collection. This was mostly drawers full of various unlabelled rocks, but also a wonderful fossil collection, together with some minerals. I was able to salvage the fossils and some of the minerals and to keep them in the newly refurbished lab. Some of the fossil labels had John Myers' name on and I soon found his local connections. It would appear that the collection had been transferred from Wolstanton Grammar School.



The collection is to be transferred to Keele University and so it is fitting that this collection will find a safe home, and I am glad that I saved them back in 2001.

Peter Copley Newcastle-under-Lyme College

Field Weekend to the Jurassic Coast: 8th - 10th May 2009

On the Friday evening, Alan Holiday (Chair of the Dorset GA and RIGS), our leader for the weekend gave an introduction to the World Heritage coast (from Exmouth in East Devon to Swanage in Dorset) and some of the geological features to be seen at Portland and in the vicinity of Weymouth. The name 'Jurassic Coast' being somewhat of a misnomer as the 85 miles of coastline covers a much wider period of time, though it has to be admitted that 'Mesozoic' does not have quite the same ring to it.

The Heights Hotel was well situated, with tremendous views to the NW of Chesil Beach and the Fleet; the large ammonite and Tridactyl cast in the reception area and the fine silicified conifer trunk outside the entrance were another bonus.

1. We started by visiting some of the quarries on Portland, including those still being worked by Albion Stone (Fancy Beach and Bowers) where the sequence and methodology of quarrying was explained and

rocks investigated. Portland stone was formed towards the end of the Jurassic period in a marine environment on the floor of a shallow sub-tropical sea at about 35° north of the equator. Portland itself is what is left of the Weymouth Anticline's southern limb where the bedding dips at about 1.5° to the SE, with the central area long eroded away, the northern limb forms part of the escarpment north of Weymouth (the Ridgeway) where there is a narrow linear exposure of the Portland stone.

	Layers of slatt, marl and burr with algal stools, clay and marl, slatt and marl, clay, thin slatt, shingle and clay.	4.6 m	Top rubble
	Layers of thick slatt, shingle with clay above, clay, bacon and aish tier.	6. 1m	Bottom rubble
	Black Dirt Bed		
	Top Cap	2. 0m	
	Black Dirt	 	
	Skull Cap	0. 5m	
Portland	Roach	1- 1.2m	
	Whit bed	1. 8m	
	Curf = Chert bed	 	
	Base bed	2. 4m	
	Top of cherty series		
Ref: Geology of the Dorset Coast by Michael House.			

2. Section taken from Perryfield Quarry (not visited) with quarrymen terms gives the rock sequence of importance to the industry. When quarrying, the joints in the rock are exploited to produce dimensional stone, blasting was used historically but stone cutting equipment from Italy has been introduced by the company for both quarrying and extraction of the freestone by mining, to avoid overburden removal and maximise its exploitation. The cap layer at the bottom of the overburden often contains trace fossils of trees. Roach is an oolitic limestone full of shell casts such as *Aptyxiella portlandica* or the "Portland Screw", a turreted gastropod. Whit bed is a fine-grained oolitic limestone, which is an excellent freestone for external work, being very durable. Beneath the whit bed is the curf, a series of sandy chert beds and shelly limestones. At the bottom of the freestone, the base bed has a homogenous texture and can be carved in any direction, a true freestone, but not as durable as the whit bed for exposed locations. During our visit a stone cutting machine was examined; after cuts are made, thin metal "balloons" are inserted and then inflated with water to break off the block from the rock face.

3. Bowers Quarry, (next to St Georges Church) with a large piece of fossilised wood at the entrance showing silicified tree rings. Here the sequence was discussed and the conditions of deposit analysed, the Purbeck beds are disturbed, evaporite mineral collapse – gypsum/halite, they include grey blue mudstones and were laid down in lagoonal/continental, hypersaline to freshwater conditions. On the base of the Purbeck beds ripple marks and salt pseudomorphs were found. At the cliff edge viewpoint the vertical faces consisted of Portland stone, with chert, over

Portland sand, grey brown in colour over the Kimmeridge clay, grey. Rotational slip had occurred due to the dip on the strata giving rocks set vertically down on the beach.

4. Suckthumb Quarry, south of Weston, impressive Tridactyl footprint trails (three toed) about 30 – 35cm in length from heel to toe. From a note next to the cast in the hotel lobby, likely to be of Iguanodon or Megalosaurus dinosaur – lowest of the Purbeck beds and therefore earliest evidence of dinosaur within the Purbeck limestone group at the end of the Jurassic.

5. Stopping briefly at King Barrow Quarry Nature Reserve for the stromalitic limestone deposited around tree trunks in the lower Purbeck (same horizon as the fossil forest at Lulworth). Then at the edge of a lagoon, flooding occurred and limestone deposited; after the trees died circular rings were left that are now exposed in the limestone surface.

6. Saturday afternoon took us through Weymouth to Herbury behind Chesil Beach to see part of the Bathonian sequence of the inner shore of the Fleet (dated to ~ 165 Ma), in the middle of the Weymouth anticline. This included Forest Marble, laid down in shallow high-energy conditions; a thinly bedded very fossiliferous limestone with crinoids, bivalves, brachiopods and echinoid material (ossicles).

		<i>Myophorella (Trigonia) clavellata Beds</i>
Upper Jurassic	Coral lian	Osmington Oolite Series
		Bencliff Grit
		Nothe Clay
		<i>Myophorella (Trigonia) hudlestoni Beds</i>
		Preston Grit
		Nothe Grit
	Oxfor d Clay	Red Nodule Bed
		Jordan Cliff Clay
Ref: Coast and Country Walks, DGAG		

7. On Sunday the geology focused on the Corallian, starting at Bowlease Cove, (east of Weymouth) and walking easterly where landslips have brought blocks of Preston Grit onto the beach. Here we studied the effects of coastal erosion, the succession (see table) and in particular trace fossils of burrows in the sandstone of *Thalassinoides* and *Diplocraterion* from which past conditions can be inferred.

8. The last visit was a couple of miles further east at Osmington Mills where the whole sequence of sedimentary Corallian rocks were deposited in various marine environments in the late Jurassic some 150 Ma. On the southern margin of the Hampshire basin, changes in sea level resulted in a sequence of repeated rhythms of clay, limestone and sand as water depth varied from deep offshore (low energy) environments and passing through to shallower periods when limestone and near shore carbonate sand could accumulate. From the car park a good view was obtained to the west of the Ham Cliff Anticline with the softer core of Oxford Clay. At the back of the car park, pale coloured Osmington Oolite outcropped. East of where the slipway had eroded away, Nothe Grit forms low cliffs. Proceeding (scrambling) again easterly across blocks on the beach towards Bran Point for the Bencliff Grit, a mainly loosely cemented sandstone with doggers eroding out of the cliff face, showing medium scale cross bedding. Doggers in this case being defined as metric-scale flattened, ovoid, calcareous concretions in sand. They had a strong sculptural element, giving a fantastic sense of place.

9. With a vote of thanks to Alan Holiday for leading us to some fascinating parts of the Jurassic coast (and to the weather for treating us so kindly), refreshments were taken at the Smugglers Inn before the group departed our various ways.

Gerald Ford

Dorset the Alternative Field Weekend

This year's field weekend took place on 9/10 May based on the Portland Heights Hotel, Isle of Portland, Dorset. Carol and I did this Alternative field weekend.



This spectacular view of Chesil Beach, looking towards the West, was taken from the dining room of the hotel.

Chesil Beach was formed 10 000 years ago at the end of the last Ice Age and is a bank of shingle some 17 miles long, up to 200 metres wide and 13 metres high extending from Bridport in the west to Portland.

The pebbles are graded by the action of the waves moving from the west, the smallest pea size pebbles have moved the least whereas the largest cobbles are carried from west to east until they reach Portland. This grading has proved a blessing to fishermen and smugglers landing on the beach at night or in fog can tell exactly where they are by the size of the pebbles. For more details visit website

www.chesilbeach.co.uk

This lighthouse was built in 1716 and can be seen by ships up to 25 miles away. Portland Bill and Chesil Beach are the graveyards of many vessels that failed to reach Weymouth or Portland Roads. The Portland Race is caused by the meeting of the tides between the Bill and the Shambles sandbank about 3 miles SE. Strong currents break the sea so fiercely that from the shore a continuous disturbance can be seen. Portland Bill Lighthouse guides vessels heading for Portland and Weymouth through these hazardous waters as well as acting as a waymark for ships navigating the English Channel.

For more details visit website
www.trinityhouse.co.uk



On the Sunday we went to Abbotsbury half way along Chesil Beach and visited the Swannery. We were able to walk around the nesting swans and see the baby cygnets that had only recently hatched.



Abbotsbury Swannery is unique. This is the only place in the world where you are able to walk through the heart of a colony of nesting Mute Swans.

History

The Swannery was established by Benedictine Monks who built a monastery at Abbotsbury during the mid 11th century. The monks farmed the swans to produce food for their lavish banquets. Swans were considered to be fish so the Catholic monks were able to eat them in Fridays. St Peter's monastery was destroyed in 1539 during the dissolution. Some of the ruins are still visible around St Nicholas' Church in the village. Since that time the Swannery has been under the stewardship of the Ilchester Estates.
Mike Fereday

Ecton Hill Field Study Association (EHFSA)

After the slow start to the bookings for this year there has been a sudden surge of interest in Ecton particularly from adult groups. The nature of the groups is diverse, ranging from geological societies to walking groups and members of the National Trust. The one thing they have in common is a fascination with the history of the site and a desire to participate in the 'Ecton experience'.

This is reflected in increased sales of David Webbs' DVD 'The Hollow Hill', and in requests for return visits and an opportunity to undertake the one day chemistry and geology courses that have previously only been on offer to school 6th form groups.

Another development will be visits in June by pupils from three primary schools from the Crewe area. This is very much a pilot that we are undertaking with the Department of Education from Keele University. If successful we hope that will enable us to offer fieldwork courses to primary schools in general.

We are still looking for anyone who would like to consider joining our team of tutors. They would be given lots of support by a helpful and friendly group of people.

The website continues to develop.

Visit www.ectonhillfsa.org.uk

The association has received a moving letter from David Thompson accepting our offer of life membership in recognition of his contribution to the Ecton project over the years.

Sadly I have to report that after a short illness Roger Woodcock, a member of our committee, recently passed away. Roger had been a tutor and active member of EHFSA and his contribution will be greatly missed.

Robert Thompson Chairman EHFSA

OTHER SOCIETIES NEWS

East Midlands Geological Society Diary Dates 2009

Indoor meetings take place in lecture theatre B3 of the Biology building at the University of Nottingham.

Sun 27th Sept '09 Trip: **Afternoon visit to Chatsworth House (provisional date)**. Leader: **Ian Thomas**

Sun 18th Oct '09 Trip: **The Geology of the Matlock Gorge Area**. Leader: **Lynn Willies**

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

Black Country Geological Society Diary Dates 2009

Lecture meetings are held at Dudley Museum, St James's Road, Dudley. Phone (01384 815575)
7.30 for 8 o' clock start unless stated otherwise.

Dudley Rock and Fossil Festival

This will take place on **Saturday 19th & Sunday 20th September 2009** at Dudley Concert Hall and Dudley Museum & Art Gallery on St. James's Road, Dudley. It will be open from 10am-5pm on Saturday and 10am-4pm on Sunday. £1 entrance fee per person.

In the Concert Hall: exhibitors from the world of geology, including superb fossil and crystal displays, gems, cut stones, jewellery; face painting, fossil casting and craft activities; a Birds of Prey Display and a T. Rex skull! **In the Museum and Art Gallery:** new dinosaur material, a Darwin exhibition, geologically inspired art and poetry, lab activities, a lecture programme...

Further details can be obtained from Dudley Museum & Art Gallery on 01384 815575.

For further details contact BCGS Hon. Secretary: Sarah Worton, 158 Oakham Road, Oldbury B69 1QQ

Tel 01384 235946 or email: sarah.worton@atkinsglobal.com

Manchester GA Diary Dates 2009

Quick Diary 2009

Sunday 19 July Styal Mill

Sunday 9 August Rochdale Cemetery

18 to 20 September Lakes Weekend

Saturday 26 September MGA Dinner

Saturday 10 October M/C Uni stones

Wednesday 14 October Spiders: The Ultimate Predators (evening lecture) 400 Million Years of Evolution

Saturday 21 November Darwin and the Voyage of the Beagle(day of lectures)

Saturday 12 December Volcanoes and Volcanic Hazards (evening lecture)

Field trips:Contact Marjorie Mosley gmrigs@hotmail.com

Liverpool Geological Society Diary Dates 2009

Meetings are held at Liverpool John Moores University, Byrom Street, Liverpool

See website liverpoolgeologicalsociety.org.uk for details of the programme of meetings and field trips.

For the field meetings contact Tom Metcalfe on 0151 286 9975. t.metcalfe@blueyonder.co.uk

Hon. Secretary: Joe Crossley email Address: lgsjoecrossley@hotmail.com

Geologists' Association announces New Awards

The GA recently announced that it is introducing three new awards schemes for its members. The new schemes are designed primarily to attract the highest quality research applications, to encourage new members to join, to raise the profile of geology in all arenas through various kinds of dissemination and to reinforce the GA through acknowledgement of our support in the various outputs generated. The new schemes comprise (1) The GA New Researchers Awards (open to student members), (2) The GA Research Fund (open to full members) and (3) The GA Meetings Fund (open to all members). These complement the existing Curry Fund awards by encouraging research and academic dissemination, thereby extending the range of activities that the GA supports. Please visit the NSGGA website for full details of the guidelines and application forms.

For this year only, there will be a one-off deadline of **20th June 2009**. Application forms (hard copy or preferably electronic) should be returned to Sarah Stafford at the GA Office (The Geologists' Association, Burlington House, Piccadilly, London W1V 9AG; geol.assoc@btinternet.com).

NSGGA - Next Committee Meeting

- **Thursday 24th September 2009, at 7.00pm** in the School of Earth Sciences and Geography, Keele University

Staffordshire RIGS Group

For details about the Group and meetings, contact:

SRIGS Secretary: Sue Lawley

c/o Staffordshire Wildlife Trust, The Wolseley Centre, Wolseley Bridge, Stafford ST17 0WT

☎ 01889 880100 email: slawley@staffswt.cix.co.uk

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Vice-chairman: Elizabeth Hallam

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email: kande@kandehallam.f9.co.uk

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Executive Committee (honorary):

Dr. Colin Exley; Terry Jones; David Thompson; Ted Watkin.

Honorary Life Member: Ann Myatt

Executive Committee (elected):

Dr Lloyd Boardman; Dr Peter Floyd; David Osborn; Janet Osborn; Brenda Kay; Gerald Ford.

Executive Committee (co-opted):

Don Steward, John Reynolds