

Mid-Week Geology Group Newsletter November 2018

John Williams Programme planner	Sheila Wilson Communications	Margaret Crawford Treasurer	Barry Tymon Webmaster
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This is John's last Newsletter before he stands down as Programme Planner. It takes our Programme to the end of May 2019.

So far no individual has offered to replace John in this crucial role longer term. Meanwhile, to ensure continuity, I am pleased to report that three members have agreed to become part of a small sub group to arrange one or two events each next year. If anyone else wishes to become involved, please contact Sheila before the AGM.

This newsletter provides further information on the 2019 Programme that was outlined in the June 18 Newsletter, with details of meeting points and what each event will cover.

Our numbers have increased to 55 this year but actual attendance numbers at some events has reduced. Maybe some meetings are too far for some members? Or is it that most local locations have already been visited in recent years? We would like to discuss this issue further at the AGM.

Our theme for the past two years as highlighted at the Skipton meeting is "How Geology Has Generated Industry in Yorkshire". Many of our walks in 2017, 2018 and 2019 demonstrate this theme.

The topic for our December AGM, however, seems to break away from this theme. Now that we know so much about the geology of our own planet, - as demonstrated by the many talks on faraway places that we have covered on recent Members Days – we will find out what the other rocky planets and moons of the Solar System may offer for the future.

Reports on 2018 Field Trips

Tuesday 10th July Dinantian Igneous Rocks of the Derbyshire Peak District with Adrian Legg (Member). (*Industrial Theme – lime, roadstone and railway ballast*)

12 of us met Adrian at the Peak District National Park car park in Tideswell Dale, on one of our rare meetings out of the county, on a beautiful July day.

For those of us travelling over Holme Moss, the journey itself was a worthwhile day out whilst looking forward to seeing igneous rocks which are so rare in Yorkshire. Although the Derbyshire Peak District is known for its classic Carboniferous limestone scenery Adrian had spent time researching dolerite, lava and volcanic ash outcrops in the scenic area of Tideswell Dale and Miller's Dale and very ably explained and demonstrated these to us.

We started with a dolerite boulder in the car park, which itself sits on dolerite within an old quarry with a substantial dolerite sill in the trees above us and then by ascending a short way we approached the huge Tideswell Dale Quarry with its 30m deep sill face to be examined. All this material was excavated and used for rail ballast and roadstone.

We continued down the Dale and alongside the River Wye to Miller's Dale and ascended to the Station on the abandoned railway now used by walkers and cyclists being on the Monsal Trail where we had lunch in whatever shade we could find. Adrian showed us a further quarry just west of the station before heading across the major viaduct and past an industrial lime kiln beside the railway, being another

industrial use of the geology of the area, before reaching our final point of geological interest in a railway cutting before Litton Mill. At this location a lava flow entered a lagoon causing the lava to harden quickly into features like pillow lava. An explanation board had been erected to explain this to the public.

A thoroughly interesting day in this new area to us and "accessible" igneous rocks.

Tuesday 7th August – Greenhow Geology Trail with Shirley Everett. Ex geologist at Coldstones Quarry and author of our guide leaflet.

(Industrial Theme Event – Limestone for roadstone and concrete.,lime and lead)

17 of us met at Coldstones cut car park on a sunny day only to find that a very popular walking group were also meeting there so the car park was overflowing. Shirley took us past the old limeworks to a small limestone outcrop so that we could examine the geology in this "quarry" used by local farmers on a small scale. After that we headed up the hill to Coldstones Cut to view the very large scale Coldstones limestone quarry – now 100m deep with regular stepped excavation. The North Craven Fault – a series of faults just here – was just to the south of the quarry so limited it's capacity in that direction. Several information boards explained the quarry, its geology and its history. We returned from here via the car park to head down Bewerley Moor to the lead mine area, stopping en route to examine the limestone walls for fossils.

We had lunch at the valley bottom at the lead production ruins where Shirley explained the process and surrounded by spoil heaps from the lead mine which had been removed via the bottom level drainage addit. These spoil heaps gave a source of much hunting for galena and barytes.

Our walk back to Greenhow Village took us past shafts to the lead mines complex below and just before the village a series of shafts with spoil heaps along a straight mile long vertical vein of lead and barytes ore parallel to the North Craven Fault some 300 m away. The village was founded to provide accommodation for the many miners who lived there during the heyday of the works.

Thursday 13th September – Whitby Shore and Cleveland Dyke with Paul Hildreth – Hull Geological Society (Part industrial theme at dyke – roadstone)

12 of us met Paul at the car park near the railway station on a sunny but cold day after some had an exciting detour as the A64 was closed at York. The town was very busy with so many trippers even post (or maybe because after) school holidays.

Paul took us first to the West Bay (must remember the Esk flows north here) to show us the Mid Jurassic sequences and in particular a large infilled channel and just visible in the beach the Dogger Formation being the boundary between the Mid and Lower Jurassic. The group then transferred to the East Bay to see the Lower Jurassic Whitby Mudstones which are preserved in a syncline which also brings the overlying Saltwick Formation (Middle Jurassic) down to almost beach level revealing many fossils. Here the Lower – Middle Jurassic boundary is represented by the Dogger Formation, which we saw at beach level on west bay but here is half way up the cliff below the Abbey due to the fault along the Esk Valley.

After lunch at Whitby (fish and chips of course) we travelled to the line of the Cleveland Dyke on our way home. Sheltering from the now cold wind we dropped into the excavated dyke for Paul to explain that the **Cleveland Dyke** is an igneous intrusion which extends from Galloway in southern Scotland through County Durham in northern England to the North York Moors in North Yorkshire.

The dyke is associated with volcanism which took place at the Isle of Mull igneous centre in western Scotland at a time of regional crustal tension associated with the opening of the north Atlantic Ocean. This resulted in the intrusion of innumerable

dykes. The Cleveland Dyke has been **dated to 55.8+/- 0.9 Ma**. Though generally from 22-28 m wide, in places it is up to 30 m wide and has been mapped over a distance of 430 km. It is the most significant of a swarm of such intrusions associated with the Mull centre.

It is thought that the entire dyke comprising some 85 km³ of rock was emplaced as a single pulse of magma over a few days, moving southeastwards from Mull but also rising vertically through the country rock. The dyke is composed of basaltic andesite which is amygdaloidal in places but not much was in evidence here without further time. The dyke has been worked for roadstone at numerous localities and was all hand excavated leaving a long straight deep cut across the North York Moors at this location.

Tuesday 16th October –Hanson’s Ure Valley Quarry, Ripon with John Peate – Principal Geologist (*Industrial Theme – aggregates, sand and concrete*)

A large group of 20 of us met Hanson’s Manager Bob Orange and principal geologist John Peate on a cool and overcast – but yet again – dry day. After all being kitted out with high viz jackets and hard hats and having our picture taken we set off to see the new area of land where quarrying had recently commenced. This had taken 6 years to get planning permission. The process begins with removal and storage of topsoil which will be needed for the extensive landscaping after work is complete, and is maintained for 30 years by Hanson. The initial excavation is in the dry, comprising river cobbles, gravel and some sand and silt which is being removed to the crushing and washing and sorting plant on a dump truck. Being a gravel flat valley bottom, groundwater is soon reached. Once a facility to settle the silty water is available, this will be drained down to reach the glacial gravel deposits which are cleaner and better quality with more sand. This will be 14m down.

On returning to the plant we had a picnic lunch before being shown the crushing , washing and separation process and a long explanation of the “dry” batching plant which discharges pre-weighed aggregate, sand and cement into a waiting ready mixed truck and then adding the necessary (and critical) water for the lorry to mix the concrete in the drum. Recent innovations in the concrete industry was explained to add fiberglass to increase tensile performance, plasticizers to make it more workable without strength loss and also ash to save expensive cement and reduce the heat of hydration. All quite technical but an insight into the recent science of concrete design and use (artificial rock!)

FUTURE PROGRAMME

Thursday December 6th 2018 Christmas Lecture & AGM

Please meet at 10.30 for coffee at the Bridge Inn Walshford , Wetherby LS22 5HS. As always, all are welcome. The programme for the day is:

10.45 – Introduction and appointment of Chairperson

11.00 - Christmas Lecture given by

Kevin Read of the LGA and Yorkshire Planetarium

who will give an illustrated talk on “ **The Geology of the Solar System**”

which should expand our geology scope and knowledge a little!!

Kevin gives talks on the Solar System to 10,000 children each year so an expansion in this talk of his other interest of geology will be rewarding.

This will be followed by an “**Introduction to our events for early 2019** “ , Christmas Lunch and at **2.00 the AGM**.

Next year's subscriptions of £15 per person will be due at the AGM, plus the charge for lunch is £16.00 per person. Cheques are preferred rather than cash if possible. Cheques should be made out to Mid-Week Geology Group. Please remember to complete your Membership Renewal for 2019 which is at the end of this Newsletter and bring it along to the AGM

Thursday 17th January 2019 10.30 Members Day at the Deepdale Centre, Boston Spa

The following talks by Members have been confirmed

- 10.30 – 2018 MWGG Events - John W
Geology of Eigg - Adrian Legg
Supporting Archaeology at Fulford – Michael Wood**
- Lunch**
- Fossils of the Edicaran– Malcolm Barnes
Valley of the Moon – David Leather and Ian Hunter**
- ?**
- 3.30 – Close**

Please send in further offers of short talks to Sheila to fill the outstanding place

Thursday February 14th 2019 10.30 Study Day on Igneous Rocks at the Deepdale Centre

Invited Speaker - Bill Fraser of LGA will lead a study day on Igneous Rocks covering the formation and types of igneous rocks and igneous rock structures in Britain.

During the lunch break, we will have lunch and examine igneous rock samples and photographs provided by members. **PLEASE BRING SAMPLES OF IGNEOUS ROCKS ALONG TO ENHANCE THE DAY**

Wednesday March 13th 10.30 Ingleton Quarry with John Peate – Hanson Principle Geologist

In the afternoon, a short section of the Ingleton Waterfall walk with Paul Kabrna to visit the old Ordovician quarries and slate sources.

Meet at the Ingleton Quarry Site Offices Reception. Please bring your high viz jackets and helmets. To reach the quarry entrance (**Grid Ref SD 708740**) head along the A65 Kendal road to Ingleton. Once in the village turn right onto the B6255 Ribbleshead/Hawes road. Continue around the town and up the hill until you see a quarry entrance on the left. If you reach White Scar Caves you have missed it!

The Hanson Quarry at Ingleton will close in a year or so. This could be a last chance to visit it as a working quarry. It is removing highly folded Ordovician Rocks and crushing them on the site for use as roadstone. Within the Quarry we will see

- SW-dipping, right-way-up beds, vertical to steeply inverted beds, with faulted axial zone of the Skirwith Syncline in between.

- Devonian lamprophyre dyke exposed in the NW face of the quarry with one large sample available for close examination

Tuesday April 16th 10.30 Woolley Edge, Coxley, and Other Local Quarries with Gareth Martin of WYGT

Arrangements: Meet at the Woolley Edge viewpoint car park **SE3055513582**. The viewpoint car park can be accessed at J38 on the M1 (just after/before Woolley Edge Services) and taking the first exit if approaching southbound or the 3rd exit if approaching northbound. Continue uphill along Haigh Lane for 1.5km. At the first junction take the first left onto Woolley Low Moor Lane and the car park is on your left after 450m. Park perpendicular to the road if possible. There is some walking required over short distances only and depending on the weather, the going should be relatively easy though Coxley Woods may be muddy. After the short walk to Woolley Edge Quarry, depending on the number of cars we can possibly ferry people to the two other sites from there.

Outdoor gear (waterproofs, warm clothing, and walking boots) is recommended. Hammers are allowed but as all sites are LGS no hammering to the rock faces please. Bring packed lunch and drinks. There are no toilets on at any of the sites though we can make a detour for these if required. Finish ~3pm

Purpose: This field trip will visit exposures of the fluvial sandstones of the Westphalian Middle Coal Measures, including the Woolley Edge Rock, Thornhill Rock, Horbury Rock and will hopefully provide an appreciation of these different sandstones and the huge river systems they represent.

May 20th - 24th The Geology of Northern Ireland

Residential trip with Ian Enlander of the Department of Environment (NI) Geology visits on Monday, Tuesday, Thursday and Friday

The draft itinerary was issued some time ago. This will be reviewed with Ian, and the final version will be issued two weeks before the event to those attending. Sheila has booked accommodation at the Marine Hotel Ballycastle. **15 Members have booked so far. Another 2 -4 attenders would be most welcome – please apply to Sheila.**

David Parkin is investigating a visit to a gold mine on the “free” Wednesday with a list of other geology sites if attenders wish to make the maximum use of this holiday.

Those attending need to book their own travel arrangements to arrive on Sunday 19th and depart on Saturday 25th May. To minimise costs, sharing of cars on the ferry or from the airport is encouraged. Sheila will shortly contact everyone to see who may be able to provide transport or be put in touch with other attenders who may offer spaces.

Summary Dates for Your Diary

Date	Event	Leader
6 December 2018	Deepdale Centre Christmas lecture & AGM	John Williams
17 January 2019	Deepdale Centre Members Day	John Williams
14 February 2019	Deepdale Centre Study Day Igneous Rocks	Bill Fraser
13 March 2019	Ingleton Quarry & Waterfall Walk Folded Ordovician Rocks	John Peate/ Paul Kabrna
16 April 2019	Woolley Edge, Coxley, and Other Local Quarries Middle Carboniferous Sandstones	Gareth Martin
20th-24th May 2019	Residential Trip to Northern Ireland	Ian Enlander

MWGG Membership Application Renewal for 2019

Subscription: £15 per person

Cheques should be made payable to the “Mid- Week Geology Group”

Name		Next of Kin	
Address			
Email address		Their telephone nos.	
Home telephone no.			
Mobile phone no.			
I consent to you contacting me by: please tick all boxes applicable below			
Email	Home Phone	Mobile	Post
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I give the MWGG permission to use the contact details to which I have consented, for MWGG use only, as detailed in the MWGG’s Privacy Policy			
Signed			

MWGG takes Data Protection seriously, and complies with the requirements of the General Data Protection Regulation. We keep information that you supply on your Membership Application Renewal Form in a spreadsheet to assist in the efficient running of MWGG. The information will be protected and your personal information will not be shared with anyone outside MWGG.