

Mid-Week Geology Group Newsletter April 2017

Welcome to our first Newsletter for 2017. The Team keep busy arranging events each month and thinking “*where else can we visit and with who as leader???*”. Your ideas for locations and leaders would be very welcome as there are so many areas and organisations that you know of and we don’t, so please pass on ideas to make the Programme suit you all. Our events have been well supported as you can see below, with an average of **23** attending in 2017, making our efforts and those of our leaders well worthwhile.

The walk reports that should be written up for our website only require a few comments on the day and a couple of photos, together with a very brief resume of the geology, or else attach a copy of the leaders handout. Please email completed reports to John Williams.

Please note the new email address for John above. Willing volunteers to write these reports, without any pressure, are needed more than ever.

We have implemented a system of reminders 2 weeks before a walk, usually including the leader’s notes for the trip. If you do not get the reminder by a week before please contact your MWGG e-Postboy – it will have been sent. Alan also sends out Down to Earth and other geology group programme events for your added interest. Our new website is in full use so please support it by using it and get us on the front page.

Summary of Recent Walks and Events

DECEMBER 13th Thursday - AGM and Christmas Lecture on ‘Sirius Minerals, the incredible journey’, given by David Warburton of Sirius.

32 Members attended the morning session to listen to David Warburton. Sirius obtained planning approval in June 2015 to develop a new mine just south of Whitby. The company will mine the world’s thickest, most extensive and high grade deposit of polyhalite. Polyhalite is a multinutrient mineral and is used as a fertiliser. Despite the many challenges Sirius has faced, the company is now on the cusp of developing the first potash mine in the UK for 40 years. Worldwide advance orders are in place and construction of the sunken head gear, the 1500m shaft and 23 mile tunnel to Hartlepool will commence next year and take 4 years before production will commence. A huge undertaking which will enhance the local economy and they believe bring many benefits to the area. David also explained the process of formation of polyhalite in the Zechstein Sea explaining the repeated cycles of flooding and evaporation and water depth involved to achieve the thickness of polyhalite they will be excavating.

JANUARY 2017 9th Monday 10.30 - Members Day at Deepdale Centre in Boston Spa.

John Williams started with a multi picture review of the 12 events of the year including our **Annual Residential Holiday** in the Isle of Man, and ended the day with a presentation of the Geology of the **Gower Peninsula** which demonstrated the forces of the Variscan Orogeny 290mya which locally reversed the folding of the earlier South Wales Coalfield great syncline giving east west folds and north south faults.

Judith Lucket gave a talk on the history and geology of **Lundy** being almost totally Tertiary Granite 59 - 52mya with a slightly younger swarm of east west dykes of dolerite and a small amount of metamorphosed sedimentary rocks near the landing area. Judith has been there several times so was fluent in the island history and now closed quarrying industry.

Tony Felski gave an excellent talk on the **Permian Rocks of the Wakefield Area** which sadly we would not be able to visit as a large group.

After lunch we had our general input to “**Our First (or Favorite) Fossil**” which revealed many interesting specimens and stories and was well supported.

David Newman entertained us with many pictures of **Amber and embedded insects** of various types– a different insight of geology

Sheila Wilson gave a talk on the location of **Odysseus’s Island of Ithaca** linking historians, archeologists and geologists showing how geological techniques can help prove or disprove the theories of other research.

A big thanks to all who participated and supplied interesting side shows for the **29** members and friends to peruse.

FEBRUARY 2017 16th Thursday – 10.30. Limestone and its Fossils at Skipton Museum with Ian Hunter and David Leather.

The day started late as the Tornado steam train was giving cheap trips from Skipton to Appleby and the passengers and onlookers had filled all car parks!!

The Annex had been laid out with many and varying samples of Calcium Carbonate (*as we now know it*) from the museum so that the **24** members and friends could have hands on experience during the browsing sessions.

After a short talk by Liz Dawson about Skipton Museum, Ian Hunter worked through the formation of Calcium Carbonate and the many various types of rocks it produced before members had a hands on trial of testing various samples (NOT the museum’s!) with 5% hydrochloric acid. Ian then described the systems for classifying Calcium Carbonate using the Folk and Dunham systems.

After lunch we had a DVD of the quarrying and uses of various types of Calcium Carbonate in South West England.

David took over to explain various fossils we could find in Calcium Carbonate Rocks and left us an exercise to do during our roaming session afterwards. The already full day did not allow the presentation by John of “*Malham Cove – A Case Study*”.

Another day maybe.

MARCH 2017 14th Tuesday 10.30 - Stones of Halifax with Alison Tymon in the morning and Scarr Wood with David Shore in the afternoon

15 Members and friends stood outside Halifax Town Hall on a drizzly morning and were glad to get inside to tour of the interior of the Town Hall (the first part of a 3 part visit to Halifax) . This was designed by Sir Charles Barry and sculpted by John Thomas both of House of Parliament fame. Such was the elevated status of Halifax in 1863 – one of the richest towns in Britain at the time along with Bradford. Susan Hanson described the main hall and Mayor’s parlor to us and Andy Barraclough, stonemason explained the renovation works he had undertaken as demonstrated by photographs he brought with him. Alison identified the various marbles which were used most of which were from Devon. Alison has produced a separate report for the benefit of tour guides of the Town Hall which has been sent to members under separate cover including reference to the ornate Gents toilet that all were keen to visit. The magnificent exterior classed as “North Italian Cinquecento” style, was built in 3 years using 24,000 tones stone from Ringby Quarries nearby at Swalesmoor at a total cost of £50,126.

Alison and Barry then escorted us through the now sunny street of Halifax showing us the ornate carvings of very fine grained local sandstones and many varieties of architectural styles and igneous rocks from around the world which adorned shops and banks. The best example of rock variation in Yorkshire according to Alison.

After lunch a reduced number met at Albert Promenade with David Shore who explained the local geology looking down into the Calder Valley comprising the top strata of the Coal Measures before the Rough Rock we were standing on which was also exposed on the neighboring hill tops. David also explained the local history including the Wainhouse Tower – *The best folly in Yorkshire*. Scar Wood is a 200m long 17m high edge exposure of Namurian Rough being the top of the Millstone Grit.

The exposure contains exceptionally well preserved cross bedding which enabled the direction of palaeocurrents to be measured and some fossils were seen.

APRIL 2017 –12th Wednesday 10.30 - Meal Bank Quarry Ingleton , Ribbleshead Quarry with David Johnston and The stones and fossils of Ribbleshead Viaduct

16 Members and friends met on a drizzly morning at Ingleton at the entrance to Mealbank Quarry – now owned by Craven DC and demarked a SSI for its unique geology. David described the history of the Hoffman Kiln and the Quarry before moving on through the now mostly dilapidated quarry buildings. The Danny Bridge and below that the Garsdale Lms beds of the Great Scar Limestone dipped at about 30 deg to the south and this was the rock quarried and exported both as rock and as lime produced in the kiln. Within this were a 600mm limey conglomerate bed and uniquely – a coal bed which had been formed during a fluctuation in sea level. This had produced the mineral jarosite which showed as a yellow deposit. On our return some members had a detailed examination of the now badly failed Kiln and some decided to visit Langcliffe on their return journey as a reminder of what it would have looked like.

The drizzle was now clearing and broke into sunshine as we had our picnic at Ribbleshead. At Ribbleshead Quarry we saw the “Wall” which had been constructed mimicking the shape of the Ingleborough ridge with its sequence of Ordovician and Silurian rocks and Great Scar limestone beneath out feet and the Yordale Series and Gritstone cap forming the mountain. The Yordale Sequence of 6 limestone/shale/sandstone beds was 300m thick and took 5my to be deposited. In the quarry David pointed out a disconformity surface of Danny Bridge Limestone showing weathering of several thousand years 330mya.

To end this three part day John Williams explained the history of the Settle Carlisle Line linking it to the Ingleton Viaduct we had seen earlier, the construction of the viaduct and its associated township, the materials used and the where they had originated. The limestone was from two quarries at the foot of Whernside in the Hardraw Scar and Simonstone Limestone which contain many fossils. The piers were examined and many fine examples of crinoids, corals and brachiopods were found.

See our Website www.mwgggyorkshire.org.uk for detailed reports and pictures.

OUR FUTURE EVENTS

MAY 2017 8th to 12th- Residential Field Trip to the Eden Valley

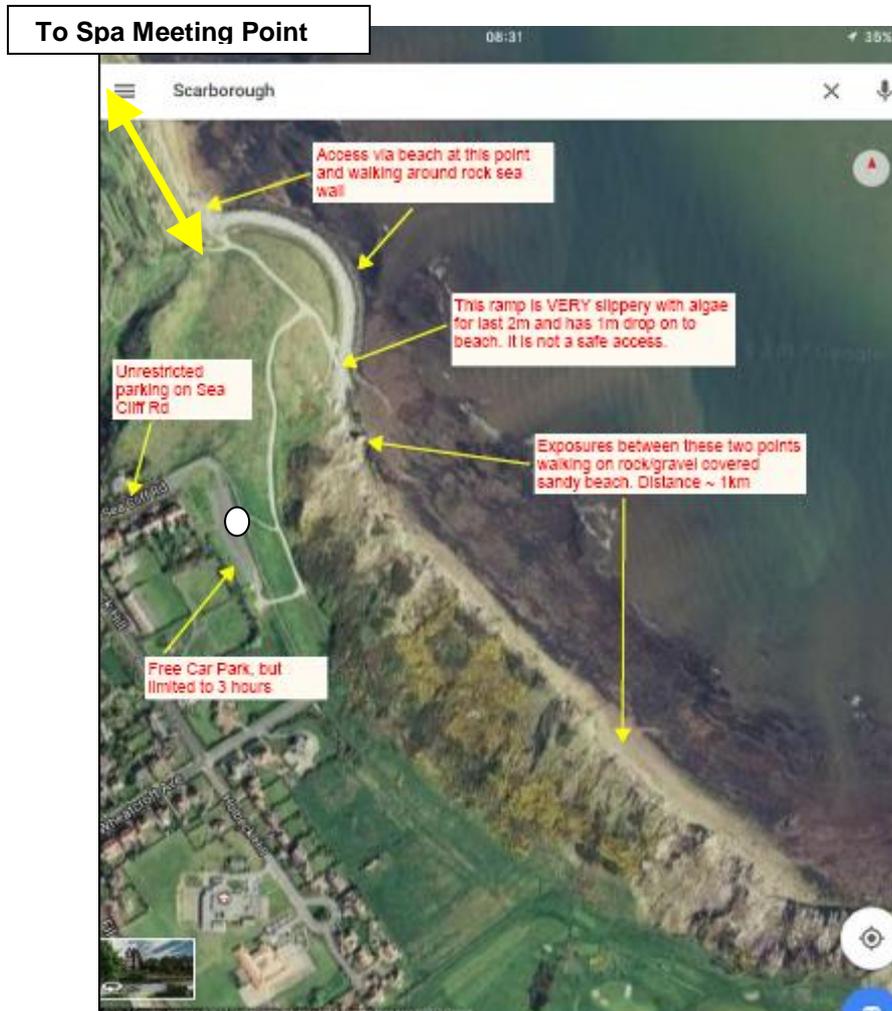
This has been arranged in the Eden Valley based at the Edenhall Hotel near Penrith and has 19 attendees, plus several additional day attendees.

Our itinerary and combined notes have been compiled by David Leather and Ian Hunter and will be issued to attendees on the evening of 8th May. The first day joining notes, details of the Monday walk, and hotel directions will be issued by e mail to attendees two weeks earlier.

The outline itinerary is

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| Monday | Kirby Stephen Carboniferous and Permian Rocks with Bill Fraser. |
| Tuesday | Ordovician/Silurian inlier of Dufton and Knock Pikes with David and Ian This will be followed by a social visit to Dufton geology Museum and Winery. |
| Wednesday | Armathwaite Permian Sandstone and Dyke. Afternoon free. |
| Thursday | Igneous, Metamorphic and Sedimentary Rocks at Shap with Ian and David. |
| Friday | Birskhead Gypsum Mine – an underground visit with Peter Firby (Manager) |

JUNE 28th Wednesday 10.30 – South Bay Scarborough with Tony Felski
Meet at Meeting Point at south end of Spa, at the northern end of the semi circle, as shown below



The geology is complex, but is very interesting as South Bay is a sequence of Middle / Upper Jurassic marine/ deltaic/ marine exposures.

Paid parking is available at the Spa about 500m to the north from where there is a flat walk along a promenade to the semi circle. Alternately use the Park and Ride and step off at the Rotunda and walk along the prom to the Spa. There is also parking at Sea Road above the bay. The path from this car park down to the semi circle is wide and well made, but it is very steep in places - especially on the way back up!

We shall access the beach from the north end of the semi circle and then walk around alongside the rock armour. Some of the way is sandy, but most is rock, some covered with seaweed. It is not particularly slippery, but care is need as the seaweed can cover clefts and gullies in the rock surface which can cause one to lose their footing. Once around the rock armour the going is fairly easy.

Stout waterproof boots and at least one walking pole are recommended.

Bring a picnic to have on the beach.

JULY 20th Thursday – Meet Peter Appleton – local guide - at 10.30 at Cleveland Ironstone Mining Museum, Deepdale, Mill Lane, Skinningrove, TS13 4AP

Follow the brown directional signs, Skinningrove is reached from the A174 between Loftus and Carlin Howe. In the village, turn right after the narrow bridge. The museum has ample free parking.

Cleveland Ironstone Mining Museum is located on the site of the former Loftus ironstone mine. Some of the external buildings, the haulage drifts and underground tunnels, still remain to this day. Between 1865 and 1958, over 500 men and boys were employed here, making this, Loftus Mine, the third largest mine in Cleveland. Following a short film Peter will take us through the history, plans and artefacts, and lead us on a tour of the museum

After lunch at the Museum we meet at the car park at **Margrove Park Old Shale Tip (GR - NZ 652 156)** – about 3 miles from the Museum- where Peter Appleton will take us on a **Heritage Walk – Valley of Industry** - a 3 mile (2.5hr) walk to show us the traditional industries of the area of Iron Works, Brick Works and Alum that all relied on the local geology. This will be a preliminary excursion before we have a full day on Alum Mining and Production in this area next year.

AUGUST 15th Tuesday- Anston Stones Wood with Tony Felski.

Meet at the car park of North Anston Parish Hall at 10.30

From Junction 31 of M1 take the A57 east for 4 miles then turn left to North Anston on B6060 and soon find The Parish Hall, Ryton Rd, North Anston S25 4DL

The exposures we will see were deposited in the Permian some 255Ma ago. At the end of the Carboniferous about 290 Ma ago what would become the British Isles had moved from the Equator north to the sub tropics where the land was subject to dry arid conditions, uplift and erosion for next 35Ma. The resulting landscape of desert and patches of bare rock was subsequently flooded by the Zechstein Sea. The resultant evaporation, concentration, dilution and variation in size and chemistry of the Zechstein Sea created the Magnesium Limestone rocks we will see during the day.

Anston Stones Wood was not used for large scale quarrying, but locally there were several very large quarries from where the stone for the rebuilding of the Houses of Parliament in 1840 was extracted. Unfortunately some of this stone was not of the highest quality hence the need for its replacement during the present time.

SEPTEMBER 6th Wednesday - The Wolds with leader Richard Myerscough

Meet at the village of Warter at 10.30, (located 4 miles east of Pocklington and 18 miles from York)

Travel along the B1246 and park in the village car park, (turn right at the war memorial opposite Wolds Heritage Centre but please DO NOT PARK in village).

GR - SE 848 478. The Heritage Centre is the converted St James Church which has an Anglo-Saxon/Norse cross shaft dating from before AD 900 standing under the Norman tower arch.

A trip looking at the relationship between geology and land landscape in the area around Nunburnholme and Warter. The rocks are poorly exposed but there will be an opportunity to study the Chalk and rocks of the Lower Jurassic and Upper Triassic in situ and as building stones. This is a little studied area and was last fully surveyed in the C19. Recently Richard has been involved in resurveying the rocks and structures; whilst archaeologists have been working on the prehistoric landscapes.

Please bring a hard hat if possible

OCTOBER 25th Wednesday 10.30 – The Stones and Springs of Harrogate with Anne Hopkins and Jeremy Freeman

Meet opposite the train station at Queen Victoria Statue – complete with flowers and benches. Street parking is very limited but there are several multi story car parks adjacent.

The purpose of the visit is to appreciate the building stones of Harrogate, including a guided tour of the Royal Hall, and a visit to the Royal Pump Room (£3 charge). After lunch we shall visit several springs in the Valley Gardens, noting the different minerals dissolved in the water. Anne and Jeremy will explain the geology and formations which result in so many springs with so many “flavours”!

Bring a picnic or use one of the many cafes we pass en route

NOVEMBER 14th Tuesday – 10.30 at National Mining Museum

Meet Andy Smith the Mine Manager for a 'Drift Walk' with explanation of coal measure exposures, samples and mining techniques. P

Use the on -site café for lunch or bring a picnic.

After lunch at 2.00 we shall take a short walk to inspect a good surface exposure of a coal seam (one of the Flocktons) and also possibly the Tankerley Ironstone.

DECEMBER 14th Thursday – AGM

Meet at 10.30 for coffee at Bridge Inn, Walshford , Wetherby LS22 5HS As always, all are welcome.

Our Christmas Lecture will be given by Dr. Liam Herringshaw (Hull University) who will speak to us on:

Miners, gardeners, engineers: how burrowing critters changed the world.

This will be followed by an introduction to our trip in May 2018, Christmas Lunch and AGM