

Conserving Warwickshire's Geological Heritage



WGCG

Hidden wonders
in the landscape
of Warwickshire

In this issue:

Holloway awards

Outreach events

Malham field trip

Local Geological Sites

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WGCG Winter programme



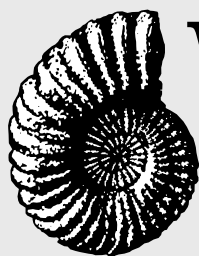
GORDALE SCAR, Malham



BECK HALL, Malham

Newsletter

Autumn 2015 Issue Number 30



WGCG

Hidden wonders
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of Warwickshire

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From the Chair

Brian Ellis

In my Chairman's Notes in the Spring 2015 newsletter I reported some organisational changes the Management Committee was planning. These are coming to fruition. John Hiatt is now Minutes Secretary for the Management Committee, Julie Harrald is Administrative Assistant for the Education Committee, Ben Steer is taking over looking after the website from Jim Passmore, while Jim will become Membership Secretary from January 2016, replacing Bill Shakespeare. Jim is continuing to design the Newsletter. Roger Pinkney has agreed to become Treasurer from October 2016 when Jim Watts retires as a Trustee. Three Trustees retire in September 2015 – Frank Wells (Secretary), Ian Fenwick (Chair of the Education Committee) and Andrew Entwistle. Fortunately they are not giving up their interest in the activities of the Group but you are all well aware of the huge contribution they have made to the success of WGCG. We are grateful also to Bill for getting the new membership system running. I thank them all personally for the amount of support they have given me. So we are looking for successors and the time for election of Trustees is on us. I think the steps outlined above make the work of Trustees responsible for specific activities less demanding and I hope that we can rely on members to be willing to replace them. I am sure we all want the Group to continue to be as active and successful as it is.

The contributions to this Newsletter again reflect our varied activities. Much effort has been expended this year on developing the use we make of Rob Holloway's Bequest. In addition to the account of all the Awards made this year the Outreach Group's report on their activities includes field work with two primary schools financed from the Bequest. It is also good to hear of the experiences of George Guice, one of our own young members, who clearly made good use of the Award we made to him. We wish him well as he moves on in his career. The Group has benefitted from the teaching experience of Norman Dutton and the contacts Barry Dale has with the minerals industry in helping to expand the activities we can undertake as a result of Rob's bequest.

I hope Mu Johnston's account of the field trip to Malham will encourage members who have not yet joined a residential weekend that there is a lot to be gained from them both socially and geologically. We are planning on Anglesey and the South Downs next year. I also hope that Paul Akers account of the role of Local Geological Sites officer will encourage a member to help us out with that job. As ever many thanks to all members who have given up time to help out this year in a variety of ways in a variety of activities. We now have the winter programme of talks and the February 'Open Day' to look forward to. While we are looking forward, next year is the 25th anniversary of the formation of WGCG. So far we have no specific proposals on how we should celebrate this. If you have any ideas about this please pass them on either at a meeting or preferably by email and we will see what we can come up with.

2014 – 15 Holloway Awards

Barry Dale & Brian Ellis

Although perhaps many members did not know or do not remember Rob Holloway most will know that he left the Group a generous bequest. His wish was that we should use the money to encourage children to learn about geology or support young geologists early in their careers. This year has seen a big growth in the number and range of Awards made. The total budget for the year was about £13000. With most of our partners we have committed ourselves to offering Awards for a three year period.

Two groups of year 6 children from Warwickshire primary schools have been enabled to do a day's geology fieldwork in the hills at Burton Dassett Country Park and you can see more about that in the report on Outreach activities. As part of our partnership with Camborne School of Mines (Exeter University) we have funded visits by secondary school parties to the demonstration mine run by Camborne. In addition to the excitement of going down the mine the students learn some basic geology as well as something about the mining industry. A new project this year has been with the geology department at Leicester University. The department runs an outreach programme on a volunteer basis for their students to get experience outside the university. We have supported two projects. One, run by two undergraduates, has to quote their report, "involved year 3 pupils in two primary schools aiming to increase their awareness of geology to make learning more memorable reinforced through interaction with hand specimens of rocks and fossils and relate them to what they have seen before in museums or even found themselves". The second project was based in a Leicestershire secondary school and is called 'Ediacaran Enigmas', about the Neoproterozoic fossils. The local connection with fossils of that age found in Charnwood Forest makes this a particularly suitable topic in Leicestershire schools. It is an ambitious project involving not only a PhD student but the BGS, providing casts of fossils, and resources from the local education authority's Science, Technology and Mathematics initiative (the so-called STEM subjects are now a government priority for schools). This project will continue into next year.



Dickinsonia tenuis



Charnia



Charnia Holdfast

Most of the rest of the Awards have fallen in to two categories and have been awarded to university students, meeting Rob's 'early career' wishes. Awards have been made to help

subsidise field mapping projects, five at Birmingham University and five at Camborne School of Mines, as part of their undergraduate training. The students are selected by their departments. Currently these Awards are for £200 per student, but are to be reviewed for next year in the light of current costs of fieldwork as reported by the universities.

The second, and more varied, group involves supporting students on work placements in the minerals extractive industry. The awards usually cover a student's travel and subsistence costs as they are normally working away from home during the summer university vacation. The size of the award varies according to the student's individual needs. This year we supported two students with two week placements with British Gypsum and one student with a four week placement with Sibelco UK, a diversified group producing industrial grade silica sands, dolomites, ball clays and china clays. Two MSc students from Camborne School of Mines have undertaken longer placements at British Geological Survey on research topics jointly agreed between BGS and the university. In addition we have given a bursary of £2500 to one of our own members, George Guice, to take a MSc at Camborne. He has recently been awarded a place to read for a PhD at Cardiff University.

The Trustees have been pleased to receive letters from many recipients asking us to pass on their thanks to the Group. Typical is this letter.

I am just emailing to let you know that I graduated from the University of Leicester with First Class Honours. I have now confirmed my attendance at the University of Aberdeen, starting in September, to study for an MSc in Integrated Petroleum Geoscience. I have also just received news today that my application for funding from PESGB was successful, they are fully funding my tuition. I would just like to thank you and everyone at the WGCG for funding my period of work experience at British Gypsum, it helped me greatly. During my time there I learnt a great deal, and it helped to build my confidence in my own ability.

Finally during the year we have made gifts to the Lapworth Institute, Birmingham University, as a contribution to the redevelopment of the museum and to Warwickshire Wildlife Trust as a contribution to the costs of building the Warwickshire Geology Wall at Brandon Marsh.

A major regret of the Trustees is that we have been unsuccessful in having direct input in local secondary schools, despite following up several promising contacts. We are now trying to tackle this problem indirectly. We are talking to the Earth Science Education Unit (ESEU) based at Keele University who have a scheme for training secondary school science teachers with minimum geology background to teach the geology elements of the new National Curriculum. This is done partly through a summer school and ESEU is seeking funding to provide bursaries for teachers. This is an area in which WGCG may be able to help through the Holloway Bequest and it may open up contacts with schools.

We have been very impressed by the quality of students applying for the awards and we hope that you will agree that the Trustees have made good progress in putting Rob's bequest to good use and to meeting his wishes. We are always open to new ideas and contacts if you can help.

Report on Outreach Activities 2015

Brenda Watts, Ben Steer and Peter Hawksworth

The Outreach Group had four outside events this summer. We added Packwood House to our National Trust contacts and put on a display and activities at Compton Verney as part of their Park Life weekend. We planned some new children's activities, which were obviously very popular with the children and their grownups alike. Thanks to a kind donation of numerous dinosaur toys and figures we were able to give them away to children who completed our fossil hunt trails.

We also ran two field days for primary schools - Ettington Church of England Primary School and St John's Primary School, Kenilworth. These allowed children to explore the landscape and geology of the Burton Dassett Hills Country Park.

We were supported in the four events by more than twenty members in all and our thanks go to them for all their help. These events can only succeed with your voluntary help.

The only casualty this year was our T Rex who unfortunately exploded due to the enthusiasm of the "man on the pump". Was this the beginning of the next extinction, you must wait till next summer to find out. On the other hand the revitalised trilobite looks set to run and run on its evolved locomotion system.

We hope the images below give you a flavour of this year's activities.



Events as usual were centred on our tent. The events at Packwood and Compton Verney were the first outings for the newly refurbished fossil box which you can see on the front right. This helps visitors to follow the local fossil trail from Cambrian to Ice Age. The model trilobites are front left.

We had the use of the children's activity room at Packwood. Knowing in advance that we would not be allowed to use paints because of the original bare wooden floor, we used crayons and pencils instead. The children created a very colourful "Jurassic Art" collage as part of Packwood's Childrens' Art Activity Week.



Following the success of our Packwood House Jurassic artwork at Compton Verney we created a sea themed panorama, which was gradually built up during the day.



Compton Verney were kind enough to provide us with modelling clay. These pieces were created by our young visitors using their own imagination and creativity. These are some of our favourite models and this activity is a must for next year.

Our Twitter presence came in useful to let us know the modelling and the dinosaur prizes were much appreciated. One Tweet from a happy mother said "Thanks@WGCG_UK. Our son loved visiting your stall(and his dino prize!)".

This year we worked with St John's Primary School Kenilworth and Ettington Church of England Primary School. The sun shone and the children enjoyed the both days. We thought you might like to see two different responses from the pupils. In each school we gave a prize for the most engaging piece of written work following the trip. These are some extracts from the piece we liked best from St.John's.

In that fantastic day, I learnt lots of interesting information on erosion, fossils, quarrying and rocks. At Beacon Tower we studied the bricks and fossils, and learnt about ammonites. Ammonites are the most known fossil, they are the ones that are similar to snail shells. We studied two types of rock. The bottom was the oldest, and always is because it was formed first, and the top was obviously younger. The rock on top was dark grey, hard and tough and had big grains. The rock below was light, chalky white and was soft and crumbly, with small grains.

After the trip we received this letter from the class at Ettington School.

Dear Mr Hawksworth, Mr Dutton and the geology Society,

I am writing on behalf of class 5/6 from Ettington primary school to thank you for our amazing geology trip not long ago. We are incredibly grateful and you have given us an experience with our friends we will never forget.

We all enjoyed every bit of the trip but I personally think hunting for fossils was best. The veins are amazing there and the quarry was awesome! We have learned that you don't need to go far to find fossils and we also learned about the formation of the hills. I and my other classmates would love to go again with our own families.

So myself and my classmates would like to say thank you for this amazing experience we will never forget!

Yours faithfully,
Class 5/6.
Hannah matthew Jorance
Beatrice Emily

Local Geological Sites

Paul Akers

Having been the Group's Local Geological Sites Officer since the beginning of 2010, I feel that now is the time to stand aside and give another Member the opportunity to take over the best job that WGCG has to offer. This article aims to give an idea of what the rôle entails.

Local Geological Sites (LGS) are important sites that underpin and complement Sites of Special Scientific Interest (SSSI). The sites are selected by voluntary local groups according to the following nationally agreed criteria:

- ◆ The value of a site for educational purposes
- ◆ The value of a site for study by Earth scientists
- ◆ The historical and aesthetic value of a site from an Earth science perspective

These sites do not have formal statutory protection in the same way as SSSIs. However, local groups notify local planning authorities of the sites that have been declared in their area and encourage the protection of the site through the planning process. WGCG is the local group responsible for the identification of LGSs in Warwickshire, Coventry and Solihull.

There is now a documented system which covers all aspects including the procedures for identifying, evaluating, selecting and notifying new sites, condition monitoring existing sites, de-selection and revision of sites and the record keeping procedures.

All of the records of our 89 sites are now fully computerised so there is no paperwork involved. For each site the information held includes a description of the location, geology present, the criteria satisfied for selection and past condition monitoring. In order to maintain the records you only need a rudimentary knowledge of Microsoft Office or one of the free equivalents such as Open Office.

We also supply information to Warwickshire County Council so that information about each site is entered onto the Geographical Information System (GIS). This is important as its existence is flagged up if a Planning Application is made in the locality.

We aim to visit each site at least once every five years in order to assess the condition of the exposure. I have had superb support in carrying out this exercise with about 30 different members helping with visits and sending me reports and photographs. I'm sure that the next LGS Officer will be as well supported.

Suggestions for new sites come both from members and from outside WGCG. The Conservation Committee (CC) selects which sites should be evaluated and by whom. A proposal to designate is then considered by a panel comprising the Chairman of WGCG and the Conservation Committee, the Keeper of Geology at the Warwickshire Museum, the representative of Natural England and the LGS Officer. Since 2010 we have selected six new sites.

If you feel that this rôle could be for you and you need more information, please contact me on the WGCG email address: WarwickshireGCG@gmail.com.

Information on all of the sites can be found on-line by following the link on the home page of the WGCG website.

Malham Fieldtrip May 2015

Mu. Johnston

This report describes a WGCG field trip from the point of view of a newcomer to the Group, and illustrates the emphasis of our Group on continuing education. My geological knowledge rests on the informative, introductory course given by WGCG and this was a chance to observe the real thing. There were 20 members on this trip and we received plenty of material beforehand. We were given full information on the accommodation by Fred Turner, together with the programme proposed by Tony Waltham (formerly of Nottingham Trent University) and an expert on this area. Ian Fenwick sent full details with maps, meeting points, and geological information about the area.

We all met at our comfortable stone built hotel, Beck Hall (front cover) in the village of Malham, to be ready for a 2pm start. Already the dramatic nature of the landscape was evident and our first walk (6 km.) direct from the hotel was a classic introduction to the features of 'karst' that were to become familiar to us over the weekend.



Cawden Reef Knoll

First observed were the Cawden reefs, rounded limestone hills, remnants of a knoll reef of Carboniferous age deposited against the sub-marine cliff formed by the scarp of the mid-Craven fault. Features of limestone were discussed such as the ability of water to percolate through limestone causing, in some cases caves, and to emerge at the boundary with a harder bedrock and often some miles away.

We progressed to Gordale Scar on the line of the mid-Craven fault where a dramatic ravine has been eroded to its present form by meltwater during the last ice age. Glacial movements and their effects were described by our leader throughout the weekend. The group approached the ravine alongside Martin's Beck. One interest here was the formation of tufa, a cream deposit of new limestone, caused when rain water dissolves the limestone (calcium carbonate) to form calcium hydrogen carbonate. When this meets algae in the stream the green plants remove carbon dioxide and water in the photosynthetic process causing calcium carbonate to precipitate out round the algae. The algae are then cut off from light and die forming a light porous form of limestone - 'tufa' which may be used in building. The group progressed into the ravine where we could see the awesome size of the Scar with its two waterfalls.



Goredale Scar



Martin's Beck

The second part of the walk took us to the top of Malham Cove where we encountered a limestone pavement which was rather wet by this time. The Cove stands 260 feet high and the group divided according to agility to descend (note an alternative route is always available.) At the bottom we could admire the majesty of the cliff face. The water from the tarn on the plateau above percolates through the limestone and does not come out at the base of the cliff but continues underground through the valley limestone until an impermeable substrate is found at Airehead, where it emerges.



Malham Cove

We walked back to the hotel rather tired and wet to our comfortable warm rooms. Later it was an easy stroll to the village and, as there were only 2 pubs, supper was sociable as well as welcome.

On Saturday some changes were needed to the schedule due to the rain of the previous day. There was nothing Spartan about the breakfast and after a prompt start drivers were appointed to cut down parking places at the sites.



Ribble valley drumlin

This was for me a day of new words, but explanations were given and they had become familiar by the end of the next two days. The first of these was 'drumlins', a collection of small oval hills, described as being like a 'basket of eggs', made of till which had been left by the retreating glacier.

Next we visited a working quarry from which 'greywacke' a hard stone used in road building was being extracted from the Lower Palaeozoic basement rock of the valley. Other commercially useful materials such as slate and pavers have been quarried in this area and these sites offer man-made cross sections useful to observe discontinuities in time between adjacent the rock strata. These are called 'unconformities' several of which were observed during the day.



Arcow Quarry

Next was a drive to Kingsdale, a valley, with the lower slopes of Wherside to one side and Ingleborough visible in the distance. The valley and Ingleborough descend to the Craven fault lines. The North and the much larger South Craven faults run across the whole area of the field trip and were shown on the geological maps that we were given. These and glacial action have led to many of the features that we visited. We walked along the valley observing the Raven Ray moraine left by the retreating glacier and clearly not limestone by the vegetation. Ahead the valley apparently came to a halt where the moraine covered the floor but the river flowed round its edge in a loop. Here the side of the hill had been cut to level the path and this revealed an unconformity in the layers of rock which could be seen at close range.



Kingsdale Valley



Raven Ray Moraine

Below the bend of the river a waterfall, the Thornton Force, emerged, swelled by yesterday's rain. This was scenic spot to eat a packed lunch before turning off to the road and back to the cars.

There were still two visits on the plan. The first involved a steep clamber up the side of the hill with some loss of dignity and unconventional assistance being given. Near the top we observed corrugations on the underside of an overhanging outcrop. These were sole structures in the 'turbidites' caused by the turbidity of the sedimentary particles in the currents of sea water. The density of the turbid water is greater than sea water and so flows like a river or avalanche, scouring the lowest surface.



Thornton Force



Sole structures in turbidites



Foredale Quarry

Lastly we went to a the disused Foredale quarry where the cut face exposed a clear view of a classic unconformity where the Carboniferous Limestone had been deposited millions of years later onto the Lower Palaeozoic rock which, due to earth movements, lies at right angles to the strata above. It was optional to climb up, but some retired for a welcome warm and tidy.

This evening the hotel had imported a chef to prepare the now traditional three Course Dinner for all participants which was most welcome.

Day three saw us alongside the third of the Three Peaks – Penyghent - with a more level stroll alongside Penyghent Ghyll. From here we diverted up the side of the hill along a stream where the surrounding rocks were Yoredale Limestone a much darker limestone compared with the White Scar Limestone seen previously. Here the stream emerged from a gully and as we scrambled along it we could pick up fossils including brachiopods and sponges. Clusters of brachiopods could be seen along the under surface of the rocks.



Penyghent Ghyll

Finally we made for the oddest sounding geological feature, the 'erratics' at Norber Scar, situated along a narrow road above Austwick. It was another scramble up the side of the hill, observing an interesting unconformity both on the way up and the way down. However at the top the erratics were definitely the most striking feature of our trip. The field was covered by large greywacke boulders apparently standing like statues on a plinth of limestone. Tony's explanation was that the glacial movement had swept the boulders along leaving them on the bare limestone at the top of the hill. The surrounding limestone subsequently eroded and was then covered by grass leaving the limestone under the boulders to become a supporting column.

The example in this photograph is the classic one used in many publications. Regrettably it has been vandalised tipping the erratic causing the top slab to slide down to the floor.



Norber Erratics

After this there was an optional visit to a limestone kiln, but as many of the group were leaving at this point, we gathered to thank Tony for his interesting and inspiring programme. I had not been to this area before, so all the sites were new to me. However I hope this report will show that there is a great deal for any member to gain by joining a fieldtrip. I would like to thank all the drivers for getting us to the sites and Ian Fenwick for his general organisation.

Photos were provided by Mike Allan, Brian Ellis and Ian Fenwick

Habitat Wall - Bruton Park



Habitat Wall at the WWT Parkridge Centre in Bruton Park

Brian Ellis

Lucy Hartley was a great help in building the Warwickshire Geology Wall at Brandon Marsh. Partly encouraged by that experience she has since built this 'Habitat Wall' at the WWT Parkridge Centre in Bruton Park in Solihull, where we already have a geology display. Lucy says

"I only had the confidence to take it on because of my experience with the Geological wall and watching how it was done".

To Cardiff via Cornwall, Ontario and Lapland - A thank you to the Holloway Award

George Guice

In September 2014, I started studying a masters in Mining Geology at Camborne School of Mines, University of Exeter, after being awarded £2,500 from WGCG. In September 2015, I will start a PhD at Cardiff University- something achieved as a direct result of the Holloway Award. This article gives a brief account of selected experiences in the last 12 months. As I cannot hope to describe the plethora of learning experiences in this article, I will focus on key trips to Canada and Finland.



Kidd Mine at a depth of 2km

In April, as part of the taught MSc course, I spent 2 weeks visiting mines and geological sites of interest in Ontario, Canada. Containing world-class nickel, copper, gold, silver and Platinum-Group Element (PGE) deposits, Ontario is something of a mecca for budding economic geologists. After an 8 hour drive from Toronto to Timmins, our first excursion took us to Kidd Mine- a copper/zinc operation. This mine is notable for a number of reasons, not least of all the fact that (due in part to latitude) the lowermost level is the closest

point to the centre of the Earth accessible to humans! Descending to this depth (3.5km below surface) requires two cages, with the first 2km long and the second 1.5km long. Observing the rock rush past as you descend to this depth is a truly unforgettable experience. Amazingly, trucks the size of small coaches operate within the excavations at these depths. Ascent to the surface was equally interesting, as we drove up the world's longest continuous 'decline'- all 22km of it.

After visiting the equally impressive Young Davidson gold mine, we headed to Sudbury, where we would spend the majority of the trip. En-route, we visited Cobalt, a town born from extensive silver mining throughout much of the 20th century. After the mineral deposits were discovered during the construction the northern Ontario railway in 1903, Cobalt grew from a rural landscape to a town of 10,000 in 3 years. Unregulated mining in the boom years resulted in a number social and environmental problems- an interesting insight into the effects of mining. Additional to visiting 3 operating nickel mines in Sudbury, we visited a physics experiment, named SNOLAB, located 2km underground in an operating mine. Being a clean lab, a shower is required on entry to the facility, which is home to the deepest flushing toilet in the world!

Akin to the research at the large hadron collider in Switzerland, much of the research at SNOLAB studies neutrinos. However, instead of attempting to create the particles, as in Switzerland, the research at SNOLAB attempts to measure naturally occurring particles. Geologically, Sudbury is home to the largest concentration of nickel on Earth. The nickel, PGE, gold and silver ores are believed to be associated with the impact of a 10km diameter meteorite 1.85 billion years ago. A guided tour, provided by Laurentian University, gave a



Nickel Rim South Mine Workshop at a depth of 1.5km

superb insight into a unique and varied geology. Finally, as a bonus, the trip culminated with a stop at Niagara Falls, before flying back to the UK for summer exams.

Following exams, the MSc culminates in producing a dissertation, which can focus on any geological or mining topic. After contacting the Geological Survey of Finland, I chose to undertake an academic project and study an enigmatic PGE deposit in northern Finland. Previously unstudied, the Sotkavaara Intrusion and associated mineralisation has provided an exciting research opportunity, which has further fuelled my desire to pursue an academic career. After travelling to Rovaniemi, Lapland (the home of Santa Claus), I spent 4 weeks logging cores, conducting optical microscopy and studying geochemical data. Additional to the exciting geological challenges encountered at the Geological Survey of Finland, 24-hour



Midnight Sun - Rovaniemi

daylight in Rovaniemi, located a few kilometres south of the Arctic Circle, provided an opportunity to observe the midnight sun within the Lapland woodland- a superb experience. Subsequently, I spent 2 successful weeks using the lab facilities at the Survey's Helsinki office.

My sincerest thanks go to WCGG, without whom, none of this would have been possible.

What's Under Your Feet

– a Gateway to Geology

Ian Fenwick

As you will probably be aware, our benefactor, Rob Holloway, spent most of his leisure hours visiting sites of geological interest and built up a large collection of rocks, fossils and minerals. When Open Studies teaching closed at Warwick University, much of the collection



Organised storage of the collection in the office

built up by Martyn Bradley was passed on to the Group. With further donations from members, especially of minerals from Colin Frodsham, we now have a resource of considerable worth. To accession and catalogue some 700 specimens has taken a small but very willing band of volunteers a good two years!

With such an asset available to us, we have been keen to use it as the basis for an event to sing the praises (and interest) of geology. Initially, the idea was to target just you, our members, but Topsy came in to play. Now the planning group has settled on an event aimed at, not just the membership, but also the general public and especially children.

Scheduled for Kenilworth on **Saturday 20th February 2015**, we have booked a very central location – the new **Senior Citizens Club** in Abbey End car park. This provides us with a large room, catering facilities, and ample parking hard nearby (for directions see map on back page).

So, how do we reach out to both younger and the older among us? To begin, we hope to journey from geology at the global scale, through William Smith & his map of England & Wales to our local geology – all very condensed, you'll be glad to know! Then we plan a timeline through English geology built around rock specimens, fossils and sedimentary structures and illustrations. To involve the mineral collection, there will be an expanded version of the popular 'matching game' of common objects and the minerals from which they are made; this has been very successful at our events at Upton House, Packwood & Compton Verney. Then the children will have an extensive corner with various games backed with a display showcasing our work with schools over the past couple of years.

We shall need all the help we can muster so, if you would like to assist for an hour or two, perhaps you would let Julie Harald, our support administrator know via her email

julieharrald@gmail.com

We have support from around a dozen 'geologists' so there's no need to fear that you'll be 'caught out'!!!

WGCG Winter talks programme 2015 - 2016

*All meetings are on Wednesdays
Meet at 7.00pm for coffee before a 7.30pm start.*

*Venue: St Francis Church Hall, Warwick Road (Kenilworth main street),
Kenilworth, CV8 1HL (See map on back cover)*

Enquiries: Ian Fenwick 01926-512531

Emergency phone on the day of an event: 07527-204184

16 September: Prof Fergus Gibb (Sheffield):

The nuclear waste problem: Geology has a better answer

21 October: AGM

It is hoped that George Guice (Hollaway Award holder) will be available to talk about his experiences in Canada & Finland

18 November: Dr Noel Worley (formerly chief geologist, British Gypsum)

The Genesis and Evolution of Sulphate Evaporites

9 December: Christmas Social (N.B. this is the second Wednesday)

with short a talk by one of our members

20 January: Prof. David Siveter (Leicester):

Exceptionally preserved Cambrian fossils of the Chengjiang Lagerstätte, China: the flowering of early animal life

17 February: Dr Paul Olver (Hereford & Worcester EHT):

Minerals, Magmas & Man

16 March: Prof. Sarah Davies (Leicester):

Rivers, lakes, swamps and seas: exploring an early Carboniferous environment

20 April : Luke Swain CGeol , Senior Asset Engineer (Geotechnics) — Network Rail:

The Jurassic geology and the Harbury landslip

