WGCG

Spring 2008 newsletter

Issue No 15

Special feature

Mancetter Purley Quarry

Warwickshire Geological Conservation Group

From the Chair

We have enjoyed an excellent set of talks this winter. After two very well attended evenings in Kenilworth, we will be back at St. John's museum in Warwick on 19th March to hear about building stones from Dr. Graham Lott of BGS. In April Hugh Jones will be starting a Warwickshire Building stones project. This will feed into an English building stones atlas to be published and funded by English Heritage. Our thanks go to Maurice Rogers his help with these talks and the project.

The launch of the Mancetter project is on Monday 17th March in the Church Hall from 5.30pm. There will be buffet supper, and a short talk from John Crossling. Also displays including the Interpretation boards. Ther local community and interested groups from the Atherstone area have been invited, as well as wider Warwickshire conservation and planning interests. We hope that this project will stimulate the development of leisure and park facilities on these ancient rocks along the length of the Nuneaton Ridge. WGCG members are invited. Offers of help would be appreciated by Ian Fenwick (01926 512531).

The summer programme has been put togeather by Ian Fenwick and the education committee. Your committees are aways pleased to have suggestions both for speakers and field trips and to hear from members who would like to be involved in the running of WGCG.

We will join the Leicester group for a joint trip to Ketton in September. The Stamford group have spearheaded geological conservation work in this impressive quarry. They, as well as other neighbouring groups, welcome our members at their meetings. Details of these and many other events can be found in 'Down to Earth' for which Nigel Harris has arranged a group subscription.

Our congratulations to Jim Passmore who is shortly getting married in Bali. The couple will be living in Coventry, we look foward to seeing them both at our summer meetings.

Martyn Bradley

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Cover photos

Purley quarry *Contractors and volunteers clean the rockfaces*

Colonsay update

Maurice Rogers

Following the WGCG Field Trip to Colonsay in July of last year I have continued the work started by the group. The geology display box, accepted by Mrs MacNeill, on behalf of the Colonsay and Oransay Heritage Trust prior to our departure, has now had all the art work and text completed. The Curry Fund provided a contribution from the Geologists' Association towards the cost of this box. We are still missing one last piece in this jigsaw - the photomicrographs of the three igneous rock specimens. These have been analysed by Clark Friend and a report is now being written up.

A grant from Scottish Natural Heritage assisted in us in securing the services of the two experts who accompanied us on the trip, Richard and Grahame, They have each written a report describing the aspects of the island's geology that most appealed to them. It is interesting to note that both Richard and Grahame seem to have regarded all that they they saw to be of the highest quality, and well worth describing in geological parlance for future research. We all appreciated their input and recognise that it was a great honour to have them help us. In addition, John Gordon, the chief geomorphologist of Scottish Natural Heritage, has supplied an analysis of Colonsay's geomorphology complete with photos along with a literature search of Colonsay's geology.

I have visited the BGS Keyworth and spoken with Mike Styles, Chief Petrologist, and handed over a sample of the Monchiquite (a specific type of Lamprophyre) that Tom Wise (the student who accompanied us and now enjoying the geology course he has selected at Leeds University) brought back from the more northerly dyke. Though this contained relatively large biotite micas and set in a black matrix, it was quite different from the sample that Tom found at Kilchattan further south. Mr Kevin Byrne has graciously sent me another sample, and like Tom's specimen, can be seen to have much larger mica and augite crystals as well as large xenoliths of Glimmer - the German name for a mica schist - which as its name suggests reflects light when viewed with a miner's candle. It was this rock that was of interest to Thomas Pennant who visited the island in 1772 is so unlike normal dykes . Early geologists afforded this rock the name Ouachitite based on similarities with a rock found in the USA, but this name is now not used.

Both the Geologists' Association and Scottish Natural Heritage have warmly welcomed our efforts and this has meant that the WGCG Field Trip has now put Colonsay well on the map in terms of Scottish geological conservation.

Elizabeth and I are planning to return to Colonsay in Summer 2009 and maybe those who attended and anyone else may wish to join us so that we can revisit and enjoy the sites again and extend our researches of the island's wonderful geology besides assisting the islanders finalise the display box.

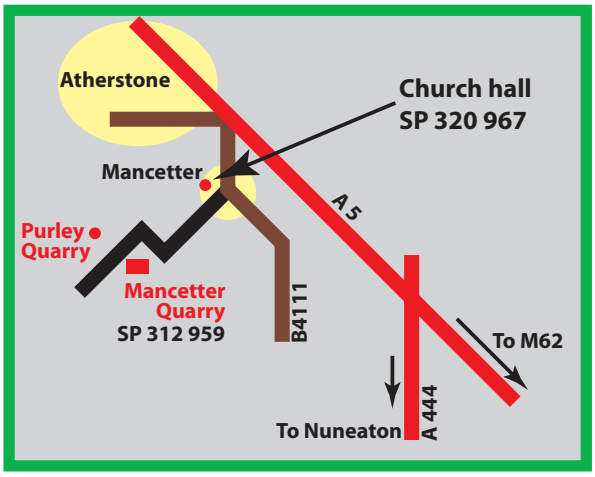
Purley quarry

Introduction

Many of you will have joined John Crossling last September at Purley quarry - Mancetter when we were shown the rock faces in the part of the quarry currently undergoing restoration.

At that time the Mancetter project had just received a grant for the work to commence. This involved the cleaning of the rock faces and production of interpretation boards. Both John and Colin were keen to obtain assistance from volunteers to help with the work.

The following articles provide a graphic account of the hard work needed which enabled the project reach fruition within the tight deadline set by Natural England who provided the funding under Defra's Aggregates Levy Sustainability Fund.



This acheivment is being celebrated on Monday 17th March in the Church Hall at Mancetter from 5.30pm and WGCG members are invited. There will be buffet supper, and a short talk from John Crossling. plus displays, including the Interpretation boards.

This project is only the latest of many undertaken by the group. On page 14 Ian Fenwick provides an overview of the various sites on which the group has worked.

Purley quarry
Geological Past, Revealed!

John Crossling

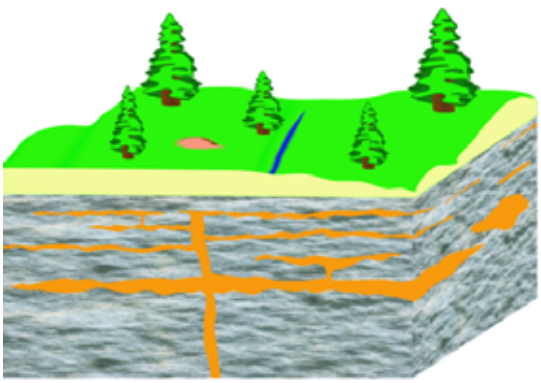
The brief was to produce three interpretation panels describing the geological features of the quarry. But exactly what were the geological features of the quarry? From previous visits a few things were known but not everything!

It was known that the rocks there were shales from the Cambrian period around 530 million years old and that they contained fossil trilobites - a kind of marine woodlouse, well they looks like them! The shales had also been injected by molten rock that had cooled in layers to form what are known as sills.

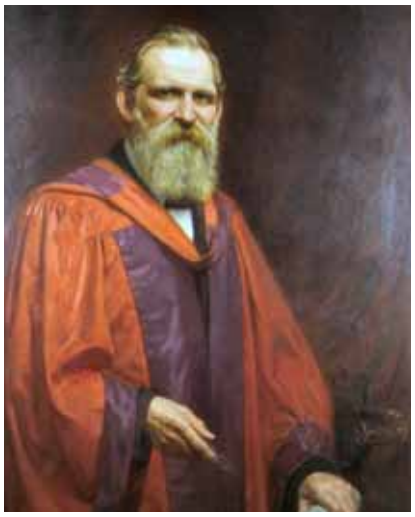
A visit the quarry was needed, with a new eye to decide where the panels would be put and what they would describe. Also to employ the services of a local expert, Alan Cook, who has been studying the fossils for many years and knew about the history of the quarries.

The visit started by looking for the sills which were soon found. There were areas where they seemed to be doing unusual things, like suddenly stopping part way across a face, or just gradually thinning and tapering out and even jumping up through several layers of shale rather than just staying within a layer of shale which is typically what they do.

Where the sill suddenly stopped turned out to be due to the presence of a fault that had been active after the sill had been injected. This resulted in one side of the sill being moved up or down relative to the part on the other side of the fault. The tapering out by contrast seemed to be evidence that that sill had simply run out of pressure and heat and had simply stopped forcing itself through the shale. The jumping up across beds is called a transgression, and transgressive sills have been recorded elsewhere in Warwickshire but had never been identified in Purley before.



The biggest surprise came at the far end of the quarry. A clear fault line was noticed with red and green mineralization picking out the line, but to one side it could be seen that the sill rock had been broken up into angular fragments which had then been stuck together again. For a while this could not be explained, but once the abseilers had done their stuff in cleaning up the face one could finally work out what had happened. There seemed to be another line at a lower angle beyond which the rock was not broken up. This was a second less noticeable fault line and it is believed that the rock between the faults has become fragmented by the huge forces between the two faults when they both moved. Not only had the rock been smashed into was is called a fault breccia, but some surfaces show parallel scratches where the rocks had scraped past each other due to the forces being exerted upon them. These scratches are sometimes know as Slickensides.



Alan Cook informed us that this end of the quarry was much older than the rest; observed by the more weathered surfaces to the quarry faces. He was sure this was an older quarry called the Mawbournes that was lost, and the much later extension works to Purley quarry had broken into to it. It was important because a prominent Victorian Geologist, Professor Charles Lapworth, had worked out the age of the rocks of the Nuneaton ridge based on fossils found here. There had been a lot of geological debate at the time regarding the age of the rocks. They had been classed as Silurian and then Carboniferous but Lapworth, having found Trilobites at the site, published information proving beyond doubt that the rocks were in fact Cambrian. It is now known that they are the most complete set of marine Cambrian rocks in the Country.

An example ofonion skinning

With the discovery on site of all this information there was now plenty to put on the panels and many features to explain. The final result is that four panels have been produced on the site and we have preserved a fifth area with the hope that further funding will be found to enable further features to be explained in an additional panel .

Purley quarry - Site restoration

Colin Frodsham

This important eight-month conservation project began last August and is due to be completed by the 21st March 2008. To cover the cost of the extensive site works, the geological interpretation and signage, it is being funded by Natural England through Defra's Aggregates Levy Sustainability Fund (ALSF). John Crossling, the project leader, is currently finalising the artwork for the display boards and preparing an explanatory leaflet for publication. My part in John's plan was to deal with the logistics on site.

It was no Sunday afternoon picnic clearing the vegetation and undergrowth from the rock faces at Mancetter Quarry. Three stretches of the high imposing rocks exposed at the northern side of the quarry had been selected for conservation and a specialist contractor was engaged in November 2007 to clean the faces. The removal of loose shale and surface detritus that had collected in crevices and along ledges posed a particularly difficult problem. The contractors abseiled down ropes tethered to tree trunks at the top of the cliff, adjusting their height to reach all parts of the exposures to hand clean the rocks. Alternative techniques, like the use of a high-pressure hose or compressed air, were rejected because of the likely damage to the friable layers of the exposed shale strata that we were trying to conserve. After the removal of trees, shrubs and vegetation by the contractors, the accumulated scree and waste at the foot steep rock faces was piled high and had to be cleared.

An appeal for local volunteers did not go unheeded. A team of councillors, members of local organisations and volunteer groups turned up en mass to hand-clean the lower shale slopes. Tarmac kindly loaned a JCB to remove the scree and vegetation that had collected at the foot of the exposures. The volunteers and Tarmac's JCB driver did a splendid job. Their enthusiasm was contagious and the cleaning and clearing jobs were completed on schedule.

The last part of the operation entailed the use of large earth-moving machines and enormous muck-shift trucks kindly loaned by Tarmac. Over the following week, many thousands of cubic metres of fill were transported from the far side of the quarry to construct a series of bund walls, long safety pits designed to catch falling rocks and drain the foot of the exposures. More fill material was place by a large tracked digger to create a series of approaches to the 3m high bunds and to prepare a flat viewing area where the display boards are to be sighted.

A fencing contractor was engaged to supply and erect wire and post fencing to enclose each exposure. As the works were on schedule, we were able to add a 4th exposure and begin work on the trilobite shales situated by the access road to the quarry.

We would like to acknowledge the enormous help provided by Tarmac's quarry manager, Mike Gale, and also the volunteers who turned up in force. Without their input, it would not have been possible to complete the conservation work on this important geological site. Who said geology wasn't fun!

The Great Rift Valley - Part 2

Maurice Rogers

In part 1 I described travelling down the east face of the Great Rift Valley escarpment just north of Nairobi and noted the contrast between the verdant red soil lands on the highlands and the grey volcanic ash deposits that were covering the floor of the valley. In this chapter our party visits the extreme south of Kenya bordering the neighbouring country of Tanzania .

The Masai Mara and the Ambesoli Game Park Reserves

The road stretched out west and the day started to get hot but not uncomfortably so since, though in the Valley, we were at about 5000 feet above sea level. The flat land were were passing was covered sparsely with tough grasses and stunted acacia trees and, as such, the land was useless to the local people for either pasture or arable crops. On the skyline I could identify by their shape several small volcanoes and locate them on the map that Martyn had given me.

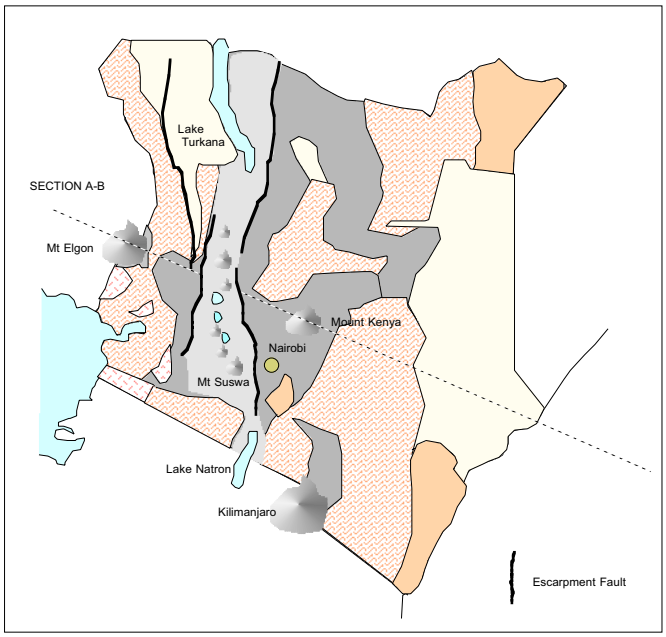
Then in the distance a group of zebras caught our attention - our first sighting of African wild life- but not that of the driver of our matatu[1] whose sole intent was - so it seemed to us - to drive in every rut available for here as elsewhere Kenya's road are mere dirt tracks. And we needed, so he told us, to arrive at nightfall at our lodge on the Masai Mara, and he could therefore ill-afford to drive slowly.

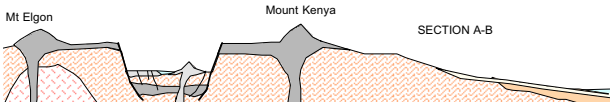
Gradually the soil along the road changed colour to a darker grey and the country became more undulating. Crops were being grown in fields with small huts. By the time we had arrived at Narok[2] - a busy market town - the soil was quite black as was the river that passed through it[3].

Though still a Quaternary volcanic soil, it appeared to be much older and weathered with a mineral richness now leading to larger scale arable crop growing.

Our road now turned south and though still on open grasslands we could see on the skyline stark outcrops of ancient hard rocks. Locally these are called "koppies". They rise some 2000 feet or so and could be seen to be of steeply-bedded metamorphosed sediments - mostly quartzites - and are of PreCambrian age (Approx 1200M yrs BP). At this time ancient seas covered the area in which huge thicknesses of grits, mudstones and greywackes were laid down to be subsequently folded and moulded by giant earth movements and torn upwards into large mountain ranges.

Note 1; Matatu -a local minibus fitted with an observation roof specifically designed for tourists.
Note 2; It was here that Martyn and his wife taught in a school many years ago but since speed was of the essence we passed through it without stopping and had no time to record photos.
Note 3; Hence the name of the town for "Na" is water and "rok" black" in the Masai language]





SIMPLIFIED GEOLOGICAL MAP OF KENYA

- Fresh water and Saline Lakes
- Quaternary Deposits
- Phonolite Quaternary Volcanics
- Andesitic Quaternary Volcanics
- Mesozoic and Tertiary Deposits
- Granites
- PreCambrian Basement

Now we were into the Masai Mara - a gently rolling grassland country and at this time of year it appeared lush due to unseasonable rians. There was an abundant wild life - elephants, zebras, giraffes, antelopes, gazelles, buffalo, ostrich, hartebeest, impala , dik dik - the list seemed endless - all casually grazing on the acacia shrubs and the occasional sausage tree. But still our driver pushed on in our matatu for the pitted road replete with water holes and mud pits was not allowing us to drive at barely more than a walking pace. But I then noted a change - there was a strong content of white quartzite in the road mettle and in the dry river beds I saw what appeared to be rounded blocks of granitic rock. The urge to push on prevented me from securing any samples, for we had to arrive at out lodge before dark.

The next day started before dawn and we were out on the rolling plain, the land gently falling away in the distance to the hazy skyline some 60 -70 miles distant in neighbouring Tanzania. The beauty and peacefulness of this area was immediately apparent and was only jarred by an insistent intercom message our driver was receiving and soon we were speeding off across the bumpy grass in a direction where we could see a cluster of other matatus were gathering in a circle with all their passengers peering out of the roofs at some nearby object.

This turned out to be a lazy lion with no care in the world lying in the long grass and surrounded by about 15 matatus with all their passengers gleefully clicking their cameras. This was pure voyeurism and represented in my mind one side of the wild life holiday I did not care for.

We spent the day moving slowly here and there and gradually became more adept in recognising and naming the wide range of animals that live on the Masai Mara. Its beauty was haunting and impressed deeply in the mind thoughts of its sensitivity and the need for its careful conservation [4].

Note 4; The local Kikuyu tribesman are induced by the authorities to keep away from this land though their buffalo do on occasions stray on to it and need to be recovered, that is before the lions have had their say in the matter.

All life on this warm sunny day seemed to be so casual, all so deeply African and beautiful. Not today at least was there the interplay of hunter and hunted, predator and prey and nowhere could we see any form of gratuitous violence. It indicated that life in the African grasslands had been sustained over many millions of years, had overcome natural disasters, had revived after ravages of fire and plague, had slowly evolved and developed, had accommodated change and knew no man-made boundries or frontiers and yet was still on this day seemingly heedless and unmoved by the hordes of man beings that clicked away furiously and excitedly.

Back at the lodge we spent the evening -as any typical tourist would- relaxing and enjoying the Kikuyu dancing with their incredible high jumping action and vibrant beat music. But during a walk outside among the gardens I noticed the same granitic rock I had seen earlier within the low walls surrounding the gardens of the lodge -a rock that seemed on closer inspection to be solely of large quartz grains and flecks of mica. This reminded me of the Charnockite I saw in India - an ultra acidic igneous rock of massive strength but here, in Africa, the same rock seemed to be friable and weathered. This was the ancient cratonic basement rock of Africa some possibly 3000 myrs old - so old it can be considered as some of the oldest rock ever formed on Earth. Its leanness in iron explains the absence of a verdant forest cover on the Masai Mara and why the grasslands are so open and gentle.

Our journey in Kenya now took us northwards back to Nairobi and east round toward the Ambesoli Game Reserve. Here under the watchful eye of snowed-covered Kilimanjaro we continued to see Africa's wildlife. And here we perceived that the portrayal of elephants and giraffes in photos and on film in no way represents that which is seen and appreciated in the wild. The graciousness and sensitivity, the awesomeness, the caring and even the fun displayed by these animals are such that they are soon seen as personalities in their own right.

And again, the geology seemed to have a significant part to play for out on the flat grasslands under the lee of Kilimanjaro, I noticed occasional clusters of trees all seemingly in places where there was a localised and intensely red soil. Soon the reason came clear, for within virtually every cluster there occurred huge bombs of red rock. These bombs were tephra- some as big as houses -which were cast up in the air from the mountain and landing here several miles distant. These clusters were common and yet spaced out as islands of verdant growth on the othewise salt-panned grasslands.

Nowhere else need one look to see that all flora, fauna and insect life depends directly on the underlying rock and its weathered soil.

Our journey back to Nairobi after the two days in the Ambesoli Game Park took us over the Kapitu plains on some better roads and again these were across ancient rock landscapes.

Near Kajiado our driver stopped in a lay-by in order to show me the hardcore being used for the road. This was of an intensely white crystalline calcite -not exactly a marble yet harder than any limestone I have seen. Examination at home revealed it to be -as expected -highly pure interlocking crystals of calcite with occasional flecks of graphite and a few largish grains of extremely pure quartz. This stone is of Archaean age and seems to have been an inorganic lime deposit which had in time become heavily metamorphosed. Besides its use as a road stone, this rock is currently being mined in the nearby koppies and calcined to make cement. It did however remind me of the pure white crystalline marble that is commonly found in India and which was used both in the Taj Mahal and the Bahai Lotus Temple, Delhi and indeed, it most likely is the same stone since India and Africa were at one time many millions of years ago part and parcel of the Gondwanaland super-continent. But there seems to be no local use in this stone as a building or decorative stone.

The nearer we came to Nairobi, so we could see yet again a change in the landscape - now more akin to the rolling countryside of the Cotswolds. For here was farming land - western style- with fences and ranch type buildings with surrounding tree plantations and parked 4x4's. The outcrops of light-coloured and banded sedimentary rocks along the road indicated another rock type not seen before - and the geological map of Kenya later showed there to be a small inlier of shallow water sediments lying just south of Nairobi. There must have been in Tertiary times for a short period an extensive lake here in which these deposits were formed.

The geology of Kenya stretches from Archaean times to the present. Jurassic and Cretaceous marine deposits do occur but these are well to the east along the shore line with the Indian Ocean. Eustatic changes in sea level permitted intermittent marine incursions and associated deposits along Africa's eastern seaboard but these are of a type that yield the present barren and uninhabited landscape bordering on Somalia. Equally the northern extremities of Kenya lie within an area of barren alluvial and aeolian soft deposits of a Quaternary age and it is here that Richard and Meave Leakey and their Kenyan associates continue to unearth the fossilized evidence of Man's earliest history.

The Leakey family are the world renowned discoverers of Man's earliest fossilized remains. Richard Leakey's biogaphy can be read describing not only these finds but also his battles with the authorities for the conservation of wild life and the fight against the killing of elephants for their tusks in Africa

In Part 3 we are off to Kisumu in the west and to the Lakes Baringo and Bagoria in the heart of the Great Rift Valley itself .

Projects over the last 5 years

Ian Fenwick

Members often ask, with justification, 'what are all these projects that the group is involved with'. To many, WGCG's work on the conservation and public interpretation front must seem very detached so I hope that this piece might shed a little light on this mysterious activity.

It's worth remembering that we are called a Conservation Group. So, from the beginning, a key element of the brief for the Group has been to attempt to conserve important geological exposures and, if possible, provide interpretation of the sites for the general public.

Underpinning all our conservation work is the designation of sites as SSSIs by Natural England (NE) and the selection of RIGS (Regionally Important Geological & Geomorphological Sites) by ourselves in conjunction with NE and the Warwickshire Museum. To date we have scheduled nearly 100 RIGS in addition to the 20 SSSIs in the county.

In 2002 the Group won funding from the Aggregates Levy Sustainability Fund (ALSF) to produce management plans for 3 sites - Edge Hill Quarry, Griff No. 4 Quarry, Wood Farm Quarry and Mancetter (Purley) Quarry - in anticipation of active extraction ceasing. Jane Worrall was employed to carry out this work on our behalf and these plans are now providing the foundations for schemes now coming to fruition.

Jane's project was followed by a successful bid, again to ALSF, to attempt an experimental conserveation of a section in the Quaternary sands, gravels and tills at Wood Farm, near Bubbenhall. Dr. Clark Friend, formerly lecturer at Oxford Brookes University, initiated this work which has been continued by Paul Akers. Additionally, Emma Wightman designed an interpretation panel which has been displayed at the nearby Ryton

Pools Country Park where it is supplemented by impregnated peels of the soft sediments obtained by Paul.

While these projects were under way, a group of members successfully bid for a grant from the Heritage Lottery Fund to install a geological garden at the WWT Parkridge Centre, Brueton Park, Solihull. This has recently been refurbished and comprises a series of panels depicting landscape conditions in 'Warwickshire' at various stages in geological time. The panels were drawn by Adam Stuart-Smith, one of our members, and have been supplemented by large boulders of the main rock types found within the county. A visit to the trail is well worth while.

In 2005, we were again successful in a bid to the ALSF when we were awarded £24000 to conserve a group of important Quaternary sites at Wolston SSSI, Ryton (A45), Ryton Pools and Brandon Marsh. The scheme was initiated by Katie Snape, a Birmingham University graduate, and has been taken to completion by Paul Akers and Ian Fenwick.

Following from this indulgence in the Quaternary, it was felt that we really must turn our attentions to some of the wonderful hard rock exposures, especially those revealed by quarrying on the Nuneaton Ridge. Accordingly early in 2007 we submitted a bid to our old friends, the ALSF, to conserve a section at the old Mancetter (Purley) Quarry which has recently been restored. Additionally, our proposal involved the installation of several interpretation boards and the creation of an exploration area where young and old would be able to hunt for the famous trilobites which are not uncommon in the Stockingford Shales exposed at the site. Fortunately, ALSF looked favourably on the scheme and John Crossling, ably assisted by Colin Frodsham and supported by Tarmac plc, has been piloting the project to completion in March 2008.

Field trip - Charnwood

Led by Keith Ambrose

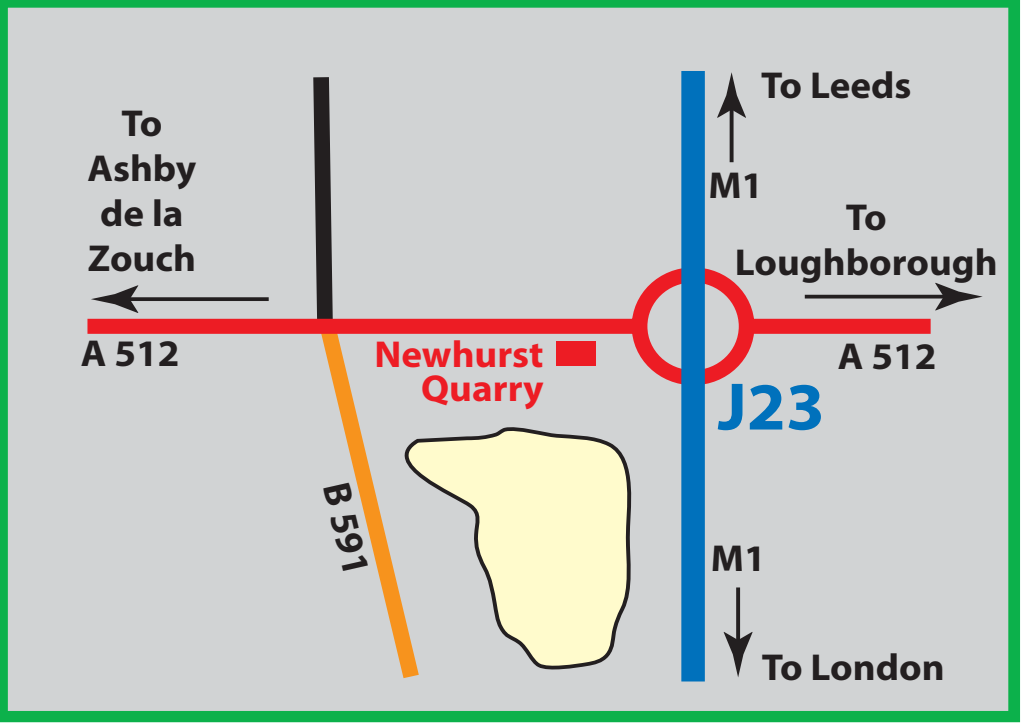
Our Summer field trips begin with a day at Charnwood led by Keith Ambrose from the Leicester group. Starting at Newhurst Quarry in the morning we later move on to Bradgatewhere Charnia Discus, the pedicular fossil was found

Meeting Point
Newhurst Quarry

Ordnance Survey **SK 487 182**

Time

SUNSET
20:15



The ancient rocks of Charnwood are part of the “Crystalline Basement” of Britain as are thos of Warwickshire’s Nuneaton Ridge and the Malverns.

An opportunity to see these hard igneous and pyroclastic rocks and the later Paleozoic cover.

Field trip - Warton

Led by Ian Fenwick

Ian Fenwick shows us examples of Lower Triassic Sedimentation at Roundbury quarry and Stipers Hill

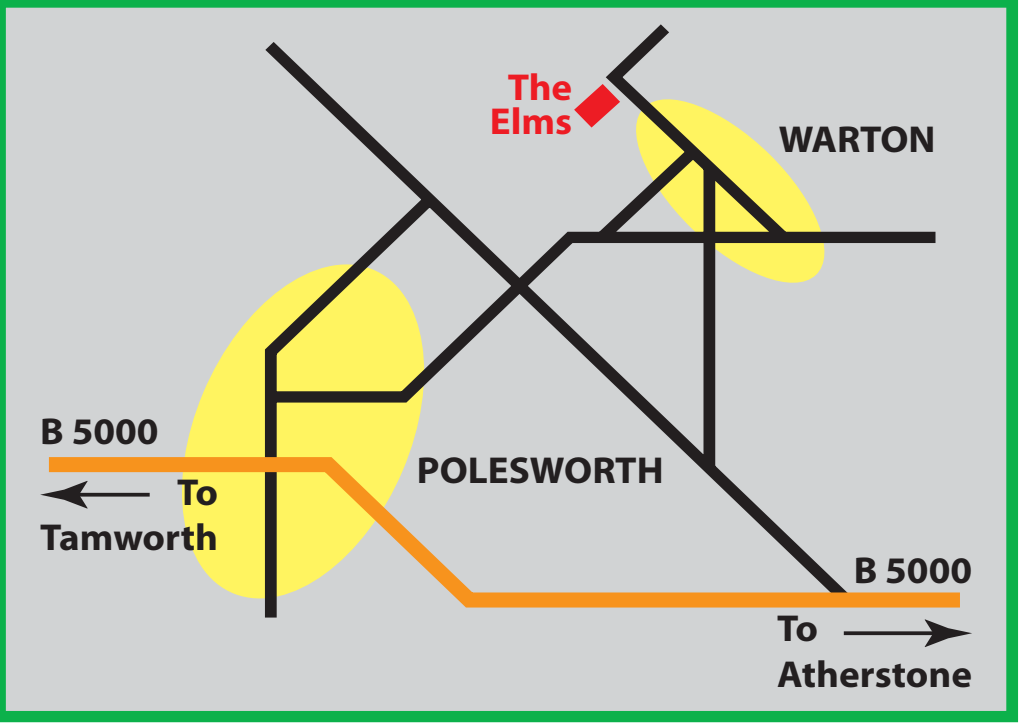
Meeting Point

The Elms - Warton

Ordnance Survey **SK 280 042**

Time

SUNSET
20:58



These sites in North Warwickshire show aspects of the Permo-Trias, icluding “Bunter Pebble Beds” not developed in the South of the county.

Field trip - Maxstoke & Corley

Led by Jon Radley & Martyn Bradley

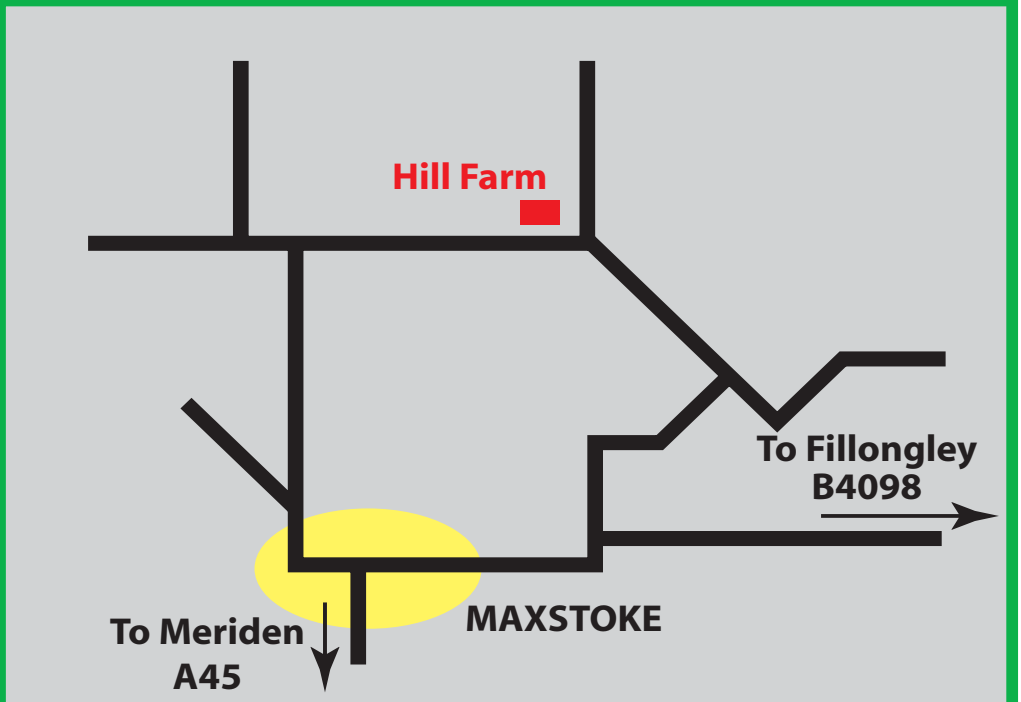
An area of Carboniferous sedimatation with an exposure at Hill Farm plus a chance to see Corley Rocks.

Meeting Point
Hill Farm - Maxstoke

Ordnance Survey **SP 241 881**

Time

SUNSET
21:32



The trip will demonstrate the sedimentary structures, fabrics and significance of sandstones and pebble beds within the Upper Carboniferous Mercia Formation at these recently developed RIGGS sites. Derived Silurian Brachiopds may be found in the pebbles washed in from neighbouring uplands.

The Red Sandstones have been used in a number of the older buildings in Coventry.

Field trip - Nuneaton

Led by Peter Homer

A Quarrymans Walk along the Nuneaton Ridge in which Peter Homer explains the reasons for the numerous quarrys in the area.

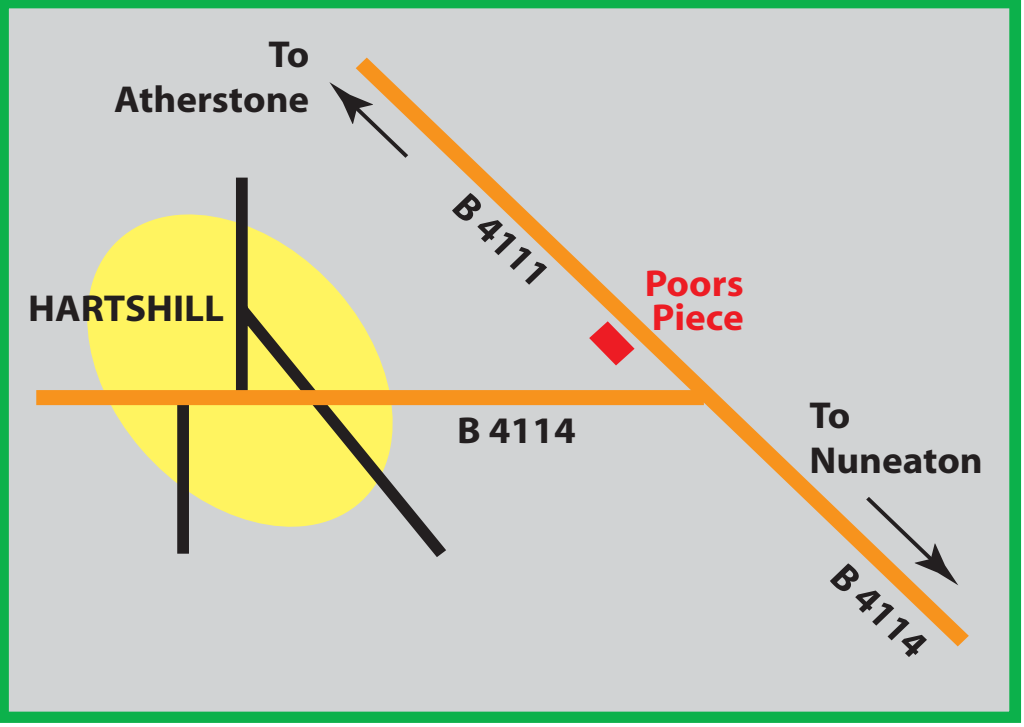
Meeting Point

Poor's Piece - Car park

OS Ordnance Survey **SP 339 933**

Time

SUNSET
21:30



Starting from one of our conservation sites we will follow a part of the route illustrated in the “Quarrymans Trail” produced by Coventry Groundworks. This publication describes the history of the area.

Field trip - Withybrook

Led by Brian Ellis

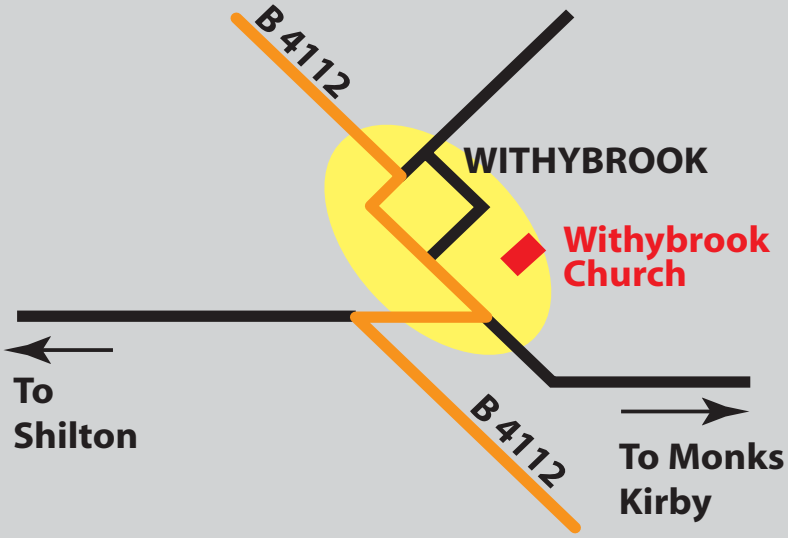
The Quaternary landscape and settlement around Withybrook is shown to us by Brian Ellis.

Meeting Point
Withybrook Church

Ordnance Survey **SP 435 842**

Time

SUNSET
20:36



Field trip - Ketton

Led by John Hudson

This Saturday joint visit to Ketton Quarry with the Leicester group is hosted by Dr. John Hudson.

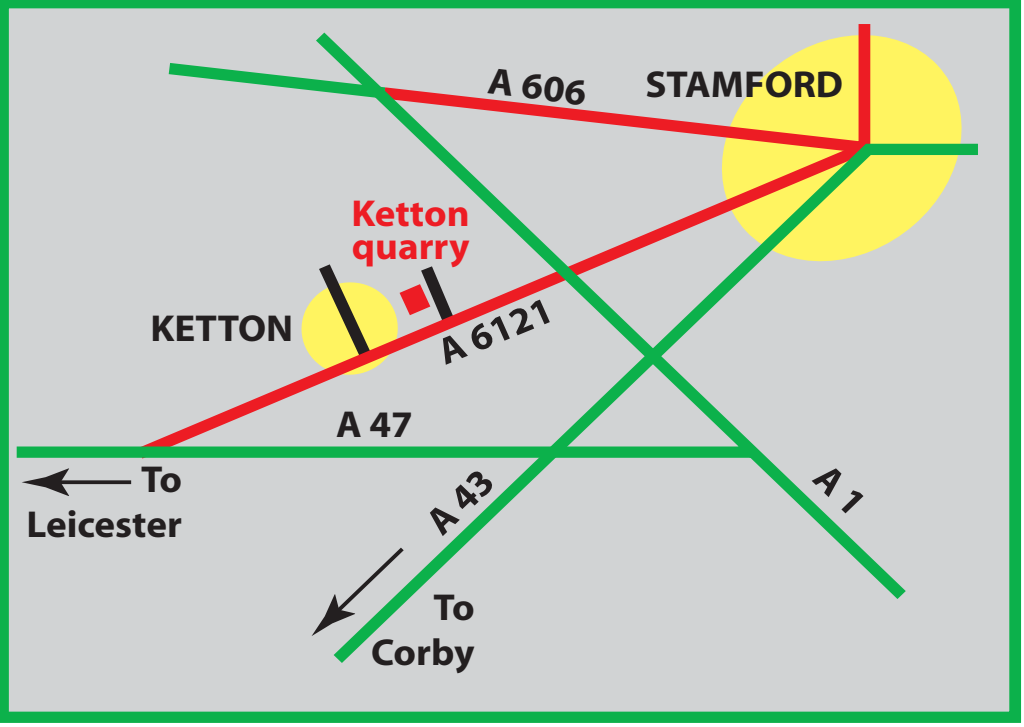
Meeting Point

Ketton Quarry - Pit Lane

Ordnance Survey **SK 982 054**

Time (TBC)

SUNSET
19:26



This large quarry contains oolitic limestone from the middle Jurassic Period with the plant and bivalve rich esterine series.

A conservation area developed by Alan Dean and the Stamford Society. The nearby Stamford Town Trail illustrates the diverse array of these Lincolnshire limestones.

Field trip - Derbyshire peaks

Led by Brian Ellis & Ian Fenwick

Based in Bakewell this weekend field trip has proved extremely popular, becoming fully subscribed within a few days of being launched to WGCG members .

3 Day Weekend

Members will explore the contrasting landscapes developed on the Carboniferous limestones and igneous rocks (Dinantian) and the shales and gritstones (Namurian) typical of the Peak District.

The group will be looking particularly at how the geological history of the area is reflected in the current distribution of rocks and what the rocks tell us about the environmental conditions in which they were formed.

The rocks, minerals and water of the area have long been exploited and the ways in which this has affected the settlement and industrial history of the area through quarrying, mining and manufacturing will be examined.

The maximum limit for this trip is 20 persons, however Chris Hodgson can take your details for a waiting list and, in the unlikely event of a cancellation and a place becoming available, will make contact to offer you the opportunity of participating.

Chris can be contacted by phone on (01926) 511097 or by e-mail at **cvhodgson@hotmail.com**

WGCG Program summary
Field trips and meetings 2008

Day field trip - Saturday 19th April
Charnwood with Keith Ambrose ..... See page 16

Evening field trip - Wednesday 14th May
Warton with Ian Fenwick ..... See page 17

Evening field trip - Wednesday 11th June
Maxstoke and Corley with Jon Radley and Martyn Bradley .... See page 18

Evening field trip - Wednesday 9th July
Nuneaton with Peter Homer ..... See page 19

Evening field trip - Wednesday 13th August
Withybrook with Brian Ellis ..... See page 20

Day field trip - Saturday 13th September
Ketton with John Hudson ..... See page 21

Weekend field trip - Friday 19th September
Derbeyshire with Brian Ellis and Ian Fenwick ..... See page 22

Evening meeting - Wednesday 8th October
AGM and field trip displays ..... Details to follow in Autumn newsletter

Evening meeting - Wednesday 12th November
Trilobites with Alan Cook..... Details to follow in Autumn newsletter

Evening meeting - Wednesday 10th December
Christmas soiree & displays..... Details to follow in Autumn newsletter

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Earth Science and Geology

Summer Term

THE MAPS THAT CHANGED THE WORLD

Tutor Martyn Bradley

Modern Warwickshire landscapes reflect underlying rocks and structures formed in very different ancient environments: Volcanoes, tropical swamps, deserts, a marine Jurassic Park and the Ice Age. Interpret and visit local scenery with geological eyes and geological maps. Six classes plus four field visits.

Courses start on Monday 21st April
Day Course :10.30-12.30 Jephson Studio, Jephson Gardens, Leamington Spa
Evening Course : 7-9pm Lifelong Learning Building, Westwood

Lecture sessions will include
William Smith and the History of Geological Mapping.
'Strata Smith' and mapping techniques ancient and modern.
Visits and field trips

1. Geological transect on the 'Chiltern Line' to London followed by a visit to see William Smith's map in the appartments of the Geological Society in Picadilly and a building stones walk.
2. Saturday visit at the British Geological Survey in Keyworth, Nottingham.
3. Practical mapping day on the Dassett Hills

See www.warwick.ac.uk/cll
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