WGCG

AUTUMN 2007 newsletter

Issue No 15

Special feature

Colonsay July 2007

Warwickshire Geological Conservation Group

From the Chair

I look foward to seeing you at Mancetter on 15th September when we will be joined by the Leicester Group and pehaps some professional geologists from the Geological Society of London which celebrates it's 200th anniversary this year. Alan Cook will be leading the morning. Sadly his daughter in law lost a child just prior to giving birth. We offer him our sympathy and also Thelma Gee, our former secretary and treasurer, who recently lost David after a long illness. Thelma hopes to be with us again soon.

The well attended field meeting at Wolston and Ryton in August showed some of the results that Ian and Brian with their work parties had revealed as part of our last conservation project. WGCG has now obtained funding for geological conservation and interpretation at Mancetter Quarry. John Crossling, who founded WGCG when he was the museum geologist, will be directing the work helped by Colin Frodsham who with Ian and Maurice put togeather the sucessful bid to Natural England. Colin with Jim Watts will be assisting John who will also need volunteers to help take this foward sucessfully in a very short timespan.

Maurice our treasurer, as well as organising a highly successful field trip to Colonsay, of which we will hear more at our Christmas meeting, has also assisted John in putting togeather this winter's programme of talks.

WGCG is a member of , and has support from the Geology Trusts and UKRIGS. The UKRIGS education project at Ryton Pools is now live on their website. **www.ukrigs.org.uk** We have joined the new West Midlands Geodiversity Partnership. Attending meetings to further the wider cause of geoconservation is important to realise the aims of WGCG, but takes a lot of time. In addition to purely geological organisations, I also represent WGCGs' interests with the Warwickshire Wildlife Trust and Warwickshire Country Parks.

To keep our programmme of field trips, talks and conservation initiatives WGCG is dependent on voluntary help from members. As well as those on our committees, we have a band of members who help in specific ways. There is much more that we could do with more voluntary help. Perhaps you might be interested in taking our WGCG display to the Liverpool Geologists Association weekend this autumn or to the Godiva Festival in Coventry next summer? Volunteers are repaid expenses. Members will be sent a list of what has been done this year and what we could do in the future. I hope we will be involved in a National Building Stones project funded by English Heritage, monitoring the availability of suitable local stone for repairs of our historical castles and churches and houses. WGCG has recently supported Nigel, Christine and Jim with the Warwick Trail. It would be good to have more of these.

Through Jon Radley the museum continue their support. Hopefully the Warwickshire LGAP (Local Geodiversity Action Plan) will move foward with help from Keith Ambrose of British Geological Survey. This may steer our future activities.

Martyn Bradley

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Cover photos

Left	*Maurice examines folding of phyllites - Kiloran bay*
Top right	*Sylvia and Trish in a flower meadow - Oransay Priory*
Centre	*Tobar Oran statue - Colonsay House*
Centre right	*Birds eggs among the rocks - Lighthouse headland*
Bottom right	*Grahame checks his notes*

Colonsay - July 2007

Introduction

At the AGM in October 2006 Maurice introduced us to the geology of Colonsay, an island he had visited that Summer, and proposed a week long field trip for members to take place in the Summer of 2007.

After many months of preparation by Maurice this dream came to fruition, and on the morning of 12th July members of the WGCG met at the Oban ferry terminal to embark for Colonsay.

Members of the field trip

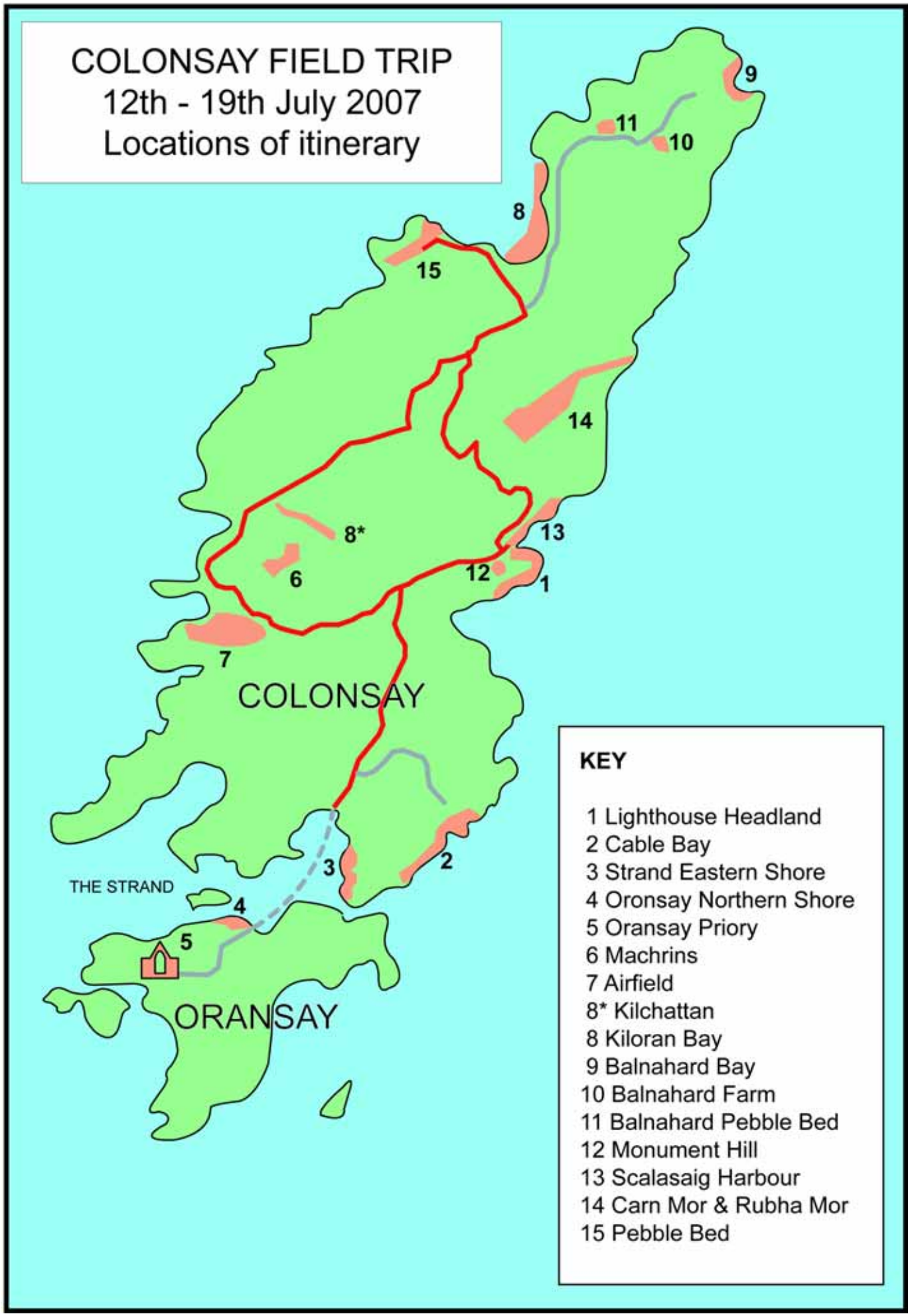
For those not familiar with the island Maurice has prepared a map (page opposite) to help in finding the areas explored by the group. The pages following contain two personal accounts of the trip describing their personal experiences.

For the WGCG members the trip concluded with the presentation of a “Rock box”, containing a representative sample of specimens from the areas visited, to the islanders. For Maurice however there is still much work to be completed.

The Rock box

The Garvellachs

As the group left Colonsay on the ferry, thinking the trip was over, Grahame was still observing the small islands we passed on the way back to Oban, pointing out the Garvellachs which have been visited in the past by students as part of their studies.


COLONSAY FIELD TRIP
12th - 19th July 2007
Locations of itinerary
COLONSAY
ORANSAY
THE STRAND
KEY
1 Lighthouse Headland
2 Cable Bay
3 Strand Eastern Shore
4 Oronsay Northern Shore
5 Oransay Priory
6 Machrins
7 Airfield
8* Kilchattan
8 Kiloran Bay
9 Balnahard Bay
10 Balnahard Farm
11 Balnahard Pebble Bed
12 Monument Hill
13 Scalasaig Harbour
14 Carn Mor & Rubha Mor
15 Pebble Bed

Island of wonders

Pam Reason

When Maurice Rogers first talked about organising a trip to Colonsay, I thought that the idea of spending a week on a small Scottish island looking at rocks, flowers and birds sounded quite idyllic - and I wasn't far wrong! Just my cup of tea. Not knowing quite what to expect, I packed my camera, binoculars, flower, bird and wildlife books (you notice no geology book!), my wet weather gear and swimming costume - prepared for all eventualities.

The group met up in Oban for the 9am ferry to Scalasaig on Thursday 12th July. Half an hour into the journey, the rain came and drove even the hardiest of us down into the cabin, with thoughts of "Oh dear - a week of this!" However by the time we'd landed, two and a half hours later, the rain had stopped. During the journey we were introduced to Richard Lisle, from Cardiff University, and Grahame Oliver, from St. Andrews University, our expert geologists.

The aim of the week was to collect samples of rocks peculiar to Colonsay for filling a display box, which would be left with the Heritage Group on the island. Photos and text would be added at a later date, hopefully to produce a geology trail.

After unloading our luggage at the Farmhouse and Lodge and lunch, we met up to explore the area to the south of the harbour. The first rocks to be spotted were phyllites (one of the few I'm almost certain I can identify!), followed closely by a dyke. Great discussion about whether it was a lamprophyre dyke or not. This was our first view of the folding, metamorphism and tremendous pressures that the rocks had been subjected to.

Taking notes

But not just rocks - we found four speckled eggs in amongst the pebbles on the beach (terns we decided) and a wonderful array of wild flowers - some I'd never seen before. Sylvia and I had lots of fun with our books trying to identify them.

Working our way around the coast phyllite and rocks with a more sandy composition but all very folded were found. Suddenly it was realised that it was nearly time for dinner and so we all headed inland arriving at The Pantry for our evening meal.

Friday saw us in Cable Bay on the south-east coast. More phyllites and quartzite rocks and even more deformation, this time stretching and shearing, producing mylonites and one of Richard's favourites - boudinage or sausages. I always find that comparisons to food and cooking help with geology! After lunch the sun came out and a scramble along the cliffs revealed more dykes and more wild flowers for Sylvia, Trish and I to marvel at.

Pam takes a photo

Deformation at Cable Bay

On Saturday the tide was right to paddle across to Oronsay to look at the ruins of the 14th century Priory. Sylvia and Trish didn't paddle - they had a lift with Postman Pat! Again the sun came out by lunchtime and a wonderful discovery was made - the Machair - an amazing wild flower meadow peculiar to this part of Scotland. While admiring this beautiful sight, Sylvia managed to disturb a corncrake - and I thought we'd be lucky to hear one! The Priory was very impressive with lots of medieval gravestones and artefacts. After our paddle back, we drove to the west of Colonsay to look at raised cobble beaches hundreds of yards from the sea and made up of pebbles from all over the west of Scotland. The day was rounded off with a Ceilidh, where Trish showed everyone how to do the Gay Gordons.

Sunday dawned warm and sunny and while Tom (a very keen young man waiting to go to study geology at University in October) went in search of the very rare Ouachitite dyke in the middle of the island, and John Gaze who went paddling in his canoe along the west coast, the rest of us went to Kiloran Bay, This, for me, was the most exciting day of the trip. Kiloran Bay is a large, sandy beach with limestone beds and a sill at one end, which we found quite easily.

About two thirds of the way across the bay was an outcrop of rock which had Richard very excited. It was mainly the phyllites we had encountered elsewhere, but incredibly folded starting with folds of less than a centimetre, then several centimetres and then larger still and the whole beach one huge fold. However, then the direction of pressure had changed by 90 degrees, producing a structure that resembled an egg box (cooking again!). This is called superimposed folding. A dyke cut through the outcrop, postdating most of the pressure.

Folding of phyllites

Grahame had wandered off to the far side of the beach to investigate the next wonder. As Jim and I approached, chatting as you do, we both stopped in our tracks, jaws dropping! Grahame was standing by a breccia but nothing like anyone had seen before. It was composed of large chunks of the rock we'd been looking at on the beach (some as big as buckets!). On investigation, the matrix turned out to be a coarse grained very pale granite called syenite. The theory was that a magma chamber had risen under the phyllite beds and smashed them up and the subsequent breccia had cooled down slowly as it had all happened deep underground.

Breccia at Kiloran Bay

At this point, Tom and John Gordon (from Scottish Natural Heritage) arrived to say that they had found the Ouachitite dyke and managed to get a sample. This had huge flakes of mica in - a good one for the box.

After lunch we climbed over the headland to find more breccia and even stranger rocks that had Richard and Grahame scratching their heads! Perhaps an explanation will follow. At the end of the bay we had fun tracing dykes that ran through the phyllite, folded and intersecting one another - quite unlike the way they are shown on the map. Altogether, Sunday was an incredible day.

Monday started very differently - wet and cold. We drove up the "road to hell" - a track that wound its way up and over to Balnahard Bay. We slipped and slithered our way over the rocks on the beach, looking for an ancient gneiss and dykes. Then we clambered up the headland, looking for the junction of the gneiss with a basal conglomerate. Once again it was Grahame that found it, but of course it was not a normal conglomerate! It had been stretched and the pebbles were elongated.

At the other end of the beach there was more phyllite and quartzite, which had been greatly folded. There was also a dyke, folded like a number 5 with a long tail. There seemed to be no end to the strangeness of the rocks. On the way back, Maurice found a sample of Monsonite, a very dense igneous intrusion, composed of mafic minerals and very rare. Another for the box!

Pam takes a photo

Tuesday was another hot, sunny day and we explored the other side of Scalasaig harbour. Right behind our Lodge we found augite diorite, flagstones, phyllite, sandstone and a smaller scale magmatic breccia. Then we climbed up to the monument overlooking the harbour (made of Ross of Mull granite). Here we found limestone metamorphosed to marble.

Round from the beach we went in search of another possible Ouachitite dyke. What we found was a classic example of folding on two scales, which had Richard grinning from ear to ear. After much searching, the dyke was found but I must admit some of us sat and enjoyed the sun and the views and a herd of wild goats! A relaxing day was rounded off with a barbecue in the Farmhouse garden.

Wednesday was the day we were to hand over the display box, now filled with Colonsay rocks. This took place in the tiny Heritage building by the harbour. As Maurice and the islanders spoke, I realised the significance of our week on Colonsay and the interest it had raised in lots of geological groups as well as in the island itself.

Grahame and Richard in discussion

It was a very different field trip to any I'd been on before. Normally the experts or tutors know the area and the rocks in detail. Grahame and Richard had never been to Colonsay before and were as amazed as we were at what we saw. It was great to watch as they looked and thought out loud and then discussed with each other, and finally us, about what might have happened. I felt very privileged to be a part of the group of experts and amateurs who had explored this tiny island and found such an array of rocks and structural features.

On behalf of a group of lovely people, I'd like to thank Maurice for organising the trip and giving me the opportunity to visit such a wonderful place and feel like a "real geologist"!

Curry Fund News

Warwickshire Geological Conservation Group was awarded £300 towards the cost of a geological exhibition/ display box for use on the island of Colonsay by visitors and residents.

(*Extract from GA Magazine September 2007)*

WGCG Meeting - St Johns museum - Wednesday 12th December 2007
Christmas Social
Talk by members of the WGCG Summer field trip to Colonsay

A little known island

David Coates

Several islands of the Hebrides are well-known to geologists and commonly visited for fieldwork: Arran, Islay, Mull, Skye are examples. But Colonsay? Few of us had heard of this small island, let alone knew anything of its geology, before Maurice Rogers' presentation at a WGCG meeting last Autumn. Maurice's pictures of dykes, sills and contorted rock formations, taken on a family holiday, showed that there would be much to of geological interest. The island - just eight miles by three - lies at the very mouth of the Firth of Lorne, on the line of the Great Glen Fault.

Dr. Grahame Oliver

Maurice proposed a trip to explore the geology of the island, mapping the dykes and setting up a "Rock Box" (made by himself) to be left with the islanders. His research on the island had led to contacts with professional geologists who were interested in coming to study the geology, and also with students and amateurs from elsewhere in the UK. Eventually seven of us from WGCG met up with Maurice and Liz on the boat from Oban on the 12th July. We were joined by Lucy, an OU student from Kent, and by Tom, a student from Yorkshire.

Our two professionals were Professor Richard Lisle from Cardiff and Dr. Grahame Oliver from St. Andrews University. Dr. John Gordon from Scottish National Heritage arrived a couple of days later, and the party was completed by Jim McKenzie from the Glasgow Geology society. So our group ranged from 19 to 95 in age, and from raw amateurs to international authority in expertise! Apart from Maurice, Liz and Tom, none of us, amateur or professional, had been to Colonsay before.

Professor Richard Lisle

Our first excursion, following the coast south from the Scalasaig ferry terminal, set the tone for the week. There was so much to see, that in nearly four hours we barely covered a quarter of a mile. The rocks along this stretch were phyllites - grey, and slate-like, but folded and stretched in several directions by hundreds of millions of years of earth movements. The professionals were both experts in metamorphism and structural geology and so were in their element; many of the rest of us were doing a crash course in metamorphism and the Pre-Cambrian.

The group visited several parts of the island, examining sites, recording and taking samples. One of the highlights was Kiloran Bay. This had another exposure of phyllites showing multiple folding on different axes, but also had a most impressive example of a "Vent Breccia". This comprised randomly-arranged blocks of phyllite and quartzite in a matrix of coarse-grained syenite, rather than the basaltic lava more typical of such breccias. This caused some speculation as to its origin: vent breccias are associated with eruptions and form near the surface, but the syenite matrix of this one suggested formation at depth.

Kiloran Bay

This was just one of several formations on the island that were not convincingly explained in the literature and which gave our resident experts cause for thought. Indeed, one of the most interesting aspects of the trip for us amateurs was to hear experts like Richard and Graham thinking aloud when confronted with new material for the first time. Many of our field excursions are to localities that are well-recorded and explained, and that tutors have frequently visited before.

Ouachitite with biotite crystals

Maurice had heard of a dyke composed of a rare mineral - ouachitite - crossing the interior of the island. With help from an islander, he and Tom were able to locate and map it, and obtain samples for the islanders' rock box and the BGS. A similar dyke was identified on the East coast, north of the harbour by Graham Oliver and members of the group. Samples of this, showing its spectacularly large biotite crystals, were also recovered for the collection.

Many dykes on the island had been distorted by earth movements since their formation, which came as a shock to those of us who are used to seeing them as purely linear features in classroom mapping exercises. One particularly example, in a cliff at Balnahard Bay in the north of the island, displayed one large and several smaller folds in a 20 metre exposure.

Dyke at Bainahard Bay

Apart from the geology, Colonsay has great natural beauty and a long, if violent, human history with many archaeological sites. Hay meadows are not cut till late in the summer, so wild flowers abound and corncrakes are frequently heard. Some of us were even lucky enough to see one of these ground-nesting birds that are now confined to the Scottish islands.

Picnic at Oransay Priory

The terrain is rocky and undulating; the highest points are the "McPhees" which are the summits exceeding 300 feet and correspond to the Munros elsewhere in Scotland. The population of about 100 are proud of the island and have built up a body of knowledge on its human and natural history.

Rock box presentation

The Rock Box was presented to the islanders by Maurice on our last afternoon, and it is hoped that it will lead to more interest in the geology of the island and, perhaps, the development of some geological trails with leaflets for visitors. We were sad to leave Colonsay; it was such a beautiful place with so much geological interest.

Those of us who went on the trip would like to express our thanks to Maurice for his inspiration, enthusiasm and hard work in researching and organising the trip.

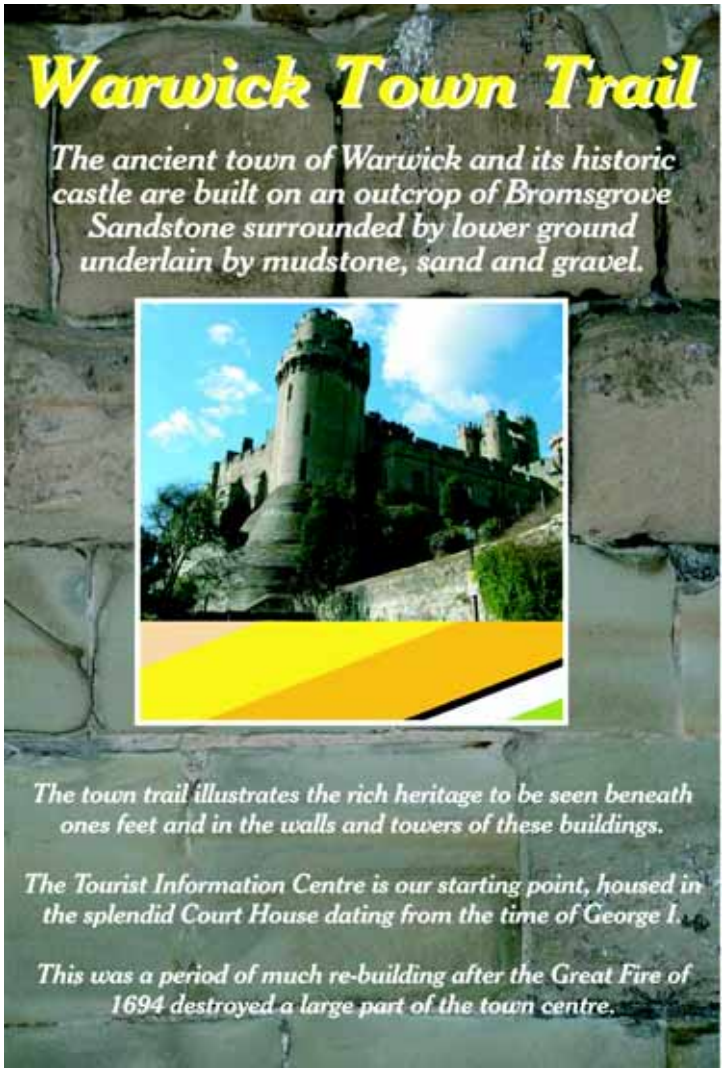
We would also like to record our appreciation and thanks to Maurice's wife Liz for her hard work in organising Maurice, feeding us and generally putting up with us for a week.

Barbeque at Scalaig Farmhouse

Warwick Town Trail

Nigel Harris and Jim Passmore

☺ Good News ☺ Good News ☺ Good News ☺



Further to the article which appeared in the Spring Newsletter the Warwick Town Trail has now been published, printed by the Warwick District Council. It has been distributed to libraries in South Warwickshire, Warwick Tourist Information Centre, the Warwickshire Museum in Market Square and some to various schools with more to follow.

Having a coloured graphical presentation with a blend of history and geology it should appeal to a wide audience. For WGCG members a copy of the trail is enclosed with his newsletter.

Already good feedback has been received and it is likely to form the basis of various walks around the town with interest shown by local voluntary groups looking for something new to offer their members. The Leamington Society may also be interested in commissioning a new trail for their town as the present one is not in colour and rather dated.

Dr. Jon Radley has kindly produced a 'flyer' for placement at distribution points to advertise its' existence. Our thanks go to WGCG and the Geologists' Association for their support throughout the long process of realisation.

Quaternary sites around Wolston

Moyra Butterworth and Hazel Colliver

On Wednesday 8th August a group of about 20 members, led by Ian Fenwick and Brian Ellis, started the evening on the village green at Wolston to view the recently installed interpretation panel which highlights Professor Fred Shotton's work studying Ice Age deposits in the area. The panel shows 'Heidelberg Man' hunting his prey along the banks of the Bytham River. Ian explained the importance of the area for the Wolstonian sequence of deposits laid down around half a million years ago when a huge river is believed to have flowed from the Stratford area towards Leicester and then across East Anglia. The Bytham River, as it is known, was large and powerful and laid down vast deposits of sand and gravel. Subsequently, Britain entered a severe glaciation and ice sheets covered the Midlands. During the major ice advance the Triassic rocks to the north were eroded and the products later deposited as a stony clay known as Thrussington Till.

With this information the group was now ready and enthusiastic to move to part of the SSSI site at Ryton. Careful instructions were needed to find the site as it lies, well-hidden adjacent to the eastbound carriageway of the A45, opposite the ex-Peugeot plant. Fortunately, Ian's wife, Ann, did a sterling job waiting at the side of the A45 to direct cars into the small access lane. The Peugeot plant stands on the fourth terrace of the River Avon and Brian led us down to a good viewpoint across the Avon valley where two further river terraces could be identified. He explained the Pleistocene sequence found in the Wolston, Brandon, Ryton and Bubbenhall area. At Bubbenhall, where the complete sequence can be seen, thick deposits of the Thrussington till are found on top of the sand and gravels, but this top layer is missing at Ryton.

We scrambled through a bramble-covered area to the RIGS site. Thanks were given by Ian to the members of WGCG who joined the working parties held earlier in 2007. With much hard work they had cleared vegetation growth and loose surface material and exposed a good sized section of the quarry face. Now an amazing cross-section of sands and gravels with three clear layers has been revealed: The basal section of fine reddish sands exhibits cross-bedded structures from deposition in a fluvial environment; The middle sand and gravel layer shows wonderful periglacial involutions where, in very cold conditions, ice lenses developing below would have caused disruption of the sediments. The layer includes reddish sand and gravel units with varying content of pebbles and clay matrix; The top section consists of a looser, paler coloured, gravelly sand containing scattered rounded clasts. The contact between the middle and top layers was quite clear and possibly indicated that the top gravelly sand was laid down by a river which had first cut a flat river bed. Isotopic analysis puts this top unit as probably a fluvial deposit of the Avon Terrace No. 4.

Ian and Brian were keen to put the group to work on an interesting task to analyse the clasts found in each of the three layers in order to establish their origin and nature. We worked in pairs using trowels to prise out ten random samples. This was surprisingly difficult, as the surface had hardened since the face had been exposed. The bottom layer yielded very few clasts, the middle layer was packed with a variety of small clasts, while the top layer contained scattered rounded clasts up to 10 cm. Our sampling showed that the clasts of the top layer were predominantly brown quartzite, reworked glacial Triassic (Bunter) pebbles. Some of these clasts had dark patches of manganese on them. Also in the top layer were some angular flints. The middle layer contained smaller rounded quartz and quartzite pebbles and also angular, broken flints with thick rinds. Additionally, the middle layer yielded some small dark pebbles of volcanic origin, which we felt were basalt. One piece of weathered rhyolite was found. The middle layer contrasted sharply with the basal sandy layer which contained hardly any gravel clasts. Those that were found were Bunter pebbles and some flints.

No immediate conclusions came from our sampling, but a lively discussion followed to try and interpret our cross section - not an easy matter, as even the acknowledged experts have put forward contrasting theories for the area. Which way did the water flow as the river swept across the area? Which way did the glacial meltwater flow? Where did all the flints derive from? And the volcanic material? Do the contrasting layers show evidence of rapid climatic change? The middle layer intrigued us all and despite the midges and the fading light, we puzzled over the swirls and involutions that had been created in such cold conditions about half a million years ago.

Everyone agreed that this had been a very interesting Quaternary site to visit and Ian expressed the hope that another working party could be arranged in the near future. It was felt that further clearance of the face would be beneficial to understanding the site and may help to answer some of the questions raised on this visit.

Burton Dassett Hills Country park

Andrew Harrison - Black Country Geological Society

Field Trip: Saturday February 17th 2007.
Warwick Museum, Warwick and the Burton Dassett Hills Country park.

This was the first fieldtrip I have organised for the Black Country Geological Society since taking on the role of fieldtrip secretary after the sad passing of Andrew Rochelle early last year. Also it would appear this was the first field trip by the Society to Warwickshire.

The weather was rather cold and grey as around ten of us met on Saturday morning outside the Warwickshire Museum, in the centre of Warwick at 10:00 a.m.. There we were met by Jon Radley - museum curator and member of the Warwickshire Geological Conservation Group who was our guide for the morning. After a quick introduction Jon explained how the morning would be split into three parts starting with a look round the Museum, followed by a walk round the centre of Warwick and finally on to the Burton Dassett Hills Country Park.

Jon went on to described the geology of Warwickshire and how in general the geology in the north of the county differs from that in the south and east The youngest strata, of Lower and Middle Jurassic age, occur in the southern part of the county and the older strata of Precambrian to Triassic age occurs further north. The central and northern part of Warwickshire is divided into three structural areas, comprising the centrally located, fault bounded structural block of the Warwickshire Coalfield which is bounded to the east and west by the Hinkley and Knowle basins. These structures were formed by extensional tectonic activity during the late Permian and possibly early Triassic. Strata of Precambrian to Permian age make up the surface geology of the Coalfield whilst the two basins are dominated by Bromsgrove Sandstone and Mercia Mudstone of Triassic age. Southern and eastern Warwickshire is characterised by scarplands underlain partly by Lower Jurassic clays, mudstones and ironstones. Warwickshire's solid geology is extensively overlain by younger deposits of Quaternary age. The fossilised remains of a wide variety of plants and animals have been discovered in the various strata that make up Warwickshire. These include rhynchosaurs, plants and other continental fossils in the Triassic rocks; marine reptiles, cephalopods and other invertebrates from the Jurassic strata and mammoth, woolly rhino, giant elk and Ox of Pleistocene age.

Warwick itself sits on a hill of Bromsgrove Sandstone at the southern tip of the Warwickshire Coalfield. To the west of the centre of Warwick, in the direction of the racecourse, the ground slopes down towards and crosses the Warwick Fault and the geology changes from Bromsgrove Sandstone to Mercia Mudstone. To the south and east of central Warwick the ground slopes away towards the River Avon where the Mercia Mudstone is overlain by River Terrace Deposits.

Movements along the Warwick fault still occur at the present day. The last recorded event occurred on 23rd September 2001 at 05:25 BST, measuring 4.2 on the Richter Scale, and occurred almost exactly one year before the Dudley earthquake of 2002.

After the introduction to geology at the Museum, Jon gave us a tour of the urban geology of the centre of Warwick. The Museum, originally the old Warwick market hall which has housed the modern geology gallery for some 30 years, and the impressive Warwick West Gate are surviving examples of the oldest of Warwick's buildings that have been constructed from Bromsgrove Sandstone. At the West Gate we were shown that this formation is very close to the surface, appearing in places below the construction as outcropping cross-bedded sandstone. The Bromsgrove Sandstone is no longer quarried locally and nowadays building restoration relies very much on imported stone from places such as Grinshill in Shropshire. Dotted around the streets and pavements of the city centre are arrangements of quartzite cobbles that originated from Bunter Pebble Beds, laid down by rivers during the Triassic. Our tour of central Warwick ended at the Shire Hall; the outside of which is faced by slabs of mottled red-brown ironstone. Closer inspection revealed fossilised crustacean and worm burrows, nest of brachiopods and pieces of wood. This oolitic ironstone is the famous Marlstone, belonging to the Jurassic Middle Lias, and was quarried from Edge Hill to the south of Warwick, as 'Hornton Stone'. It is believed to be partly the product of eroded lateritic soils being washed into shallow tropical Jurassic seas.

For the final part of the fieldtrip Jon took us to The Burton Dassett Hills Country Park where the Marlstone is still exposed. The country park is approximately 15 km south of Warwick just off junction 12 of the M40. The hills stand about 150 m high and were extensively quarried for ironstone before the First World War. Today they are an area of conservation and very popular with the public as a place to enjoy the outdoors. From the summit of Windmill Hill, at the northern end of the country park, Jon showed us what remained of the former ironstone quarries and how the ironstone forms a cap to parts of the Burton Dassett Hills. Out to the west the ground falls steeply away, into a low lying vale of Jurassic Lower Lias clays before rising again in the distance to form Edge Hill, another ironstone outcrop. From here, into the grey haze, it was pointed out that we could see not only the battlefield from the Civil War but also the transition from Lower Lias clays to Middle Lias silts, clays and ironstones. This transition represents a shallowing upwards sequence, from a deep to shallow sea, resulting from tectonic uplift of the sea bed during the Early Jurassic. Deep-water Upper Lias clays overlying the ironstones, in the southern part of the Burton Dassett range, show that the sea deepened once again, before shallowing-up into another set of iron-rich strata - the Middle Jurassic Northampton Sand. Within these shallowing upward sequences not only does the nature of the rocks change but also the fossil assemblages contained within them.

We departed from the Burton Dassett Hills Country Park around 13:00 at the end of a very interesting and successful first trip to Warwickshire. On behalf of the society I would like to thank Jon Radley for being our guide for the morning and hope that this will be the beginning of more trips to look at Warwickshire geology.

Cross Hands quarry

John Bell

On 25th July a visit was led by John Crossling to view the rocks and fossils at the quarry in southern Warwickshire. 170 million years ago during the Jurassic period this site was part of a tropical sea. Sea urchins, corals, molluscs, sea snails and many other creatures lived in a warm shallow sea not far from land.

A rock face has been preserved as a SSSI within the quarry and clearly shows two rock types, layered one on top of the other.

The upper half consists of Chipping Norton limestone. The lower half consists of Clypeus Grit- soft limestone beds containing many fossils.

The group of 10 persons attending were able to view and collect fossils relatively easily including, Brachiopods,Bivalve Molluscs, Echinoids and two examples of a large sea urchin known as Clypeus.

Due to the classic exposures and fossils many school parties have visited the site over the years. The quarry itself is now used as a land fill site and stopped being a working stone quarry in the 1970s.

The Great Rift Valley of Africa

Maurice apologises but the concluding part of his article is now held over until the Spring 2008 issue.

WGCG Meeting - St Johns museum - Wednesday 20th February 2008
The Great Rift Valley of East Africa
Talk by Dr Nick Rogers - Open University

Field trip - Mancetter quarry

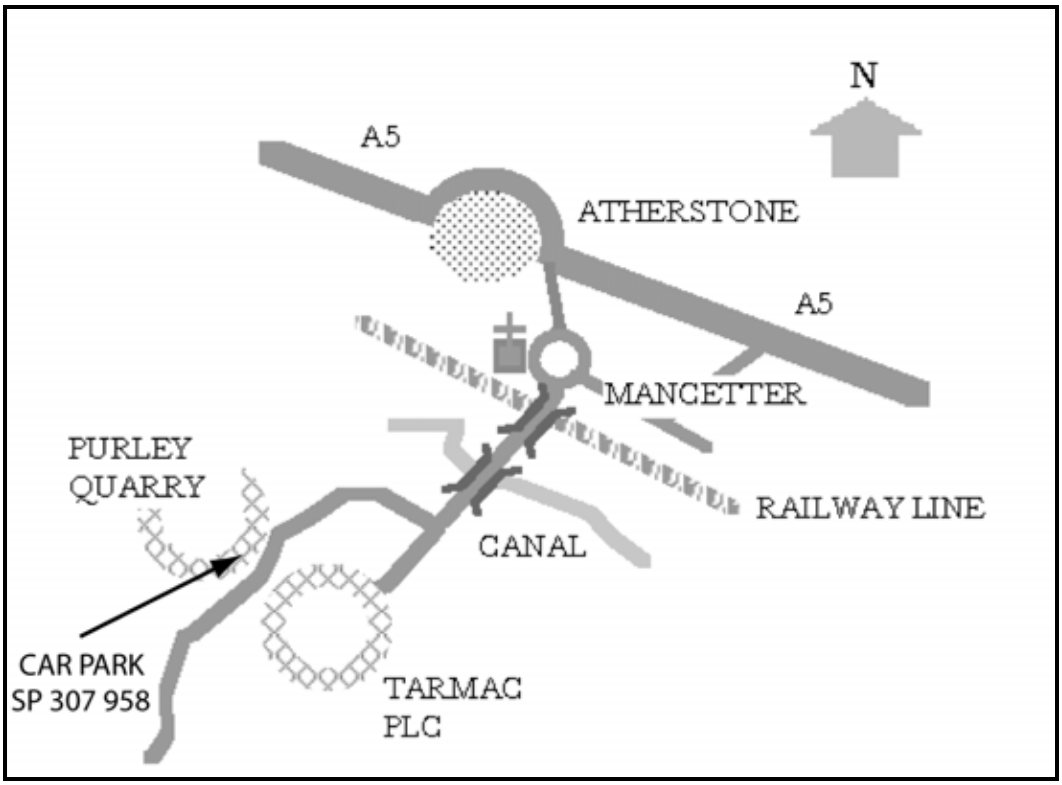
Led by Alan Cook

Saturday 15th September 2007 10am - 1pm - Day trip
Meet at Tarmac Quarry, Mancetter
Parking at the entrance to Purley Quarry. Grid ref SP 307 958

Restoration at Mancetter Quarry

Trilobite from the quarry

This is a joint trip held with the Leicester Literary and Philosophical Society. The afternoon follows on with a walk around the Moorwood Trail. See page 21 for details.



VOLUNTEER SUPPORT NEEDED

for the MANCETTER (PURLEY) PROJECT

Working with Tarmac Plc, the WGCG has secured for funding from Natural England to carry out conservation work to three areas of the reinstated part of Mancetter Quarry, near Atherstone. The grant will be used to prepare the site, provide fencing, display boards and information leaflets interpreting the outstanding geology of the quarry and surrounding countryside.

The success of the new project will be dependent on help from volunteers to carry out the many small assignments associated with the running of a project of this size — site clearance, dealing with suppliers and contractors, production of leaflets and brochures linking the project to various trails and assistance with general administration.

You do not have to be a geologist to join the team! Help with each of these small tasks will contribute towards the creation of three geological viewing platforms that will considerably enhance the area's facilities and help to attract more visitors, especially children, to view the rocks and the great Trilobite exposure at this North Warwickshire quarry. Can you help?

This is an exciting new project in an area of the County that deserves more of our attention. Please can you spare some time, no matter how limited, to join our project team, your support to protect and conserve the quarry's striking geology would be greatly appreciated.

If you can help and want to join our project team. You would be most welcome. Would you please contact:

either

Colin Frodsham
Telephone: 0121 711 8095
e-mail: frodshams@home77.wanadoo.co.uk

or

the Mancetter project leader, John Crossling
Telephone: 01926 613245,
e-mail: johncrossling@tiscal.co.uk .

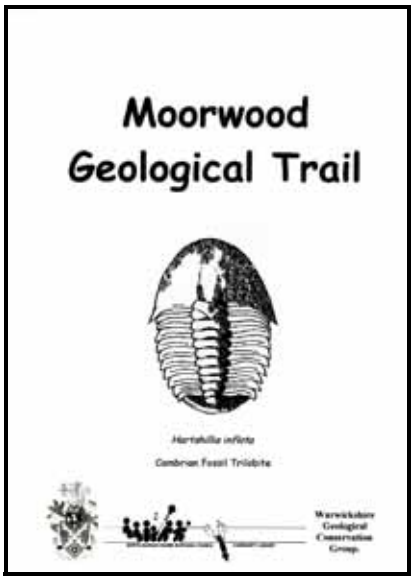
Field trip - Moorwood Trail

Led by Martyn Bradley

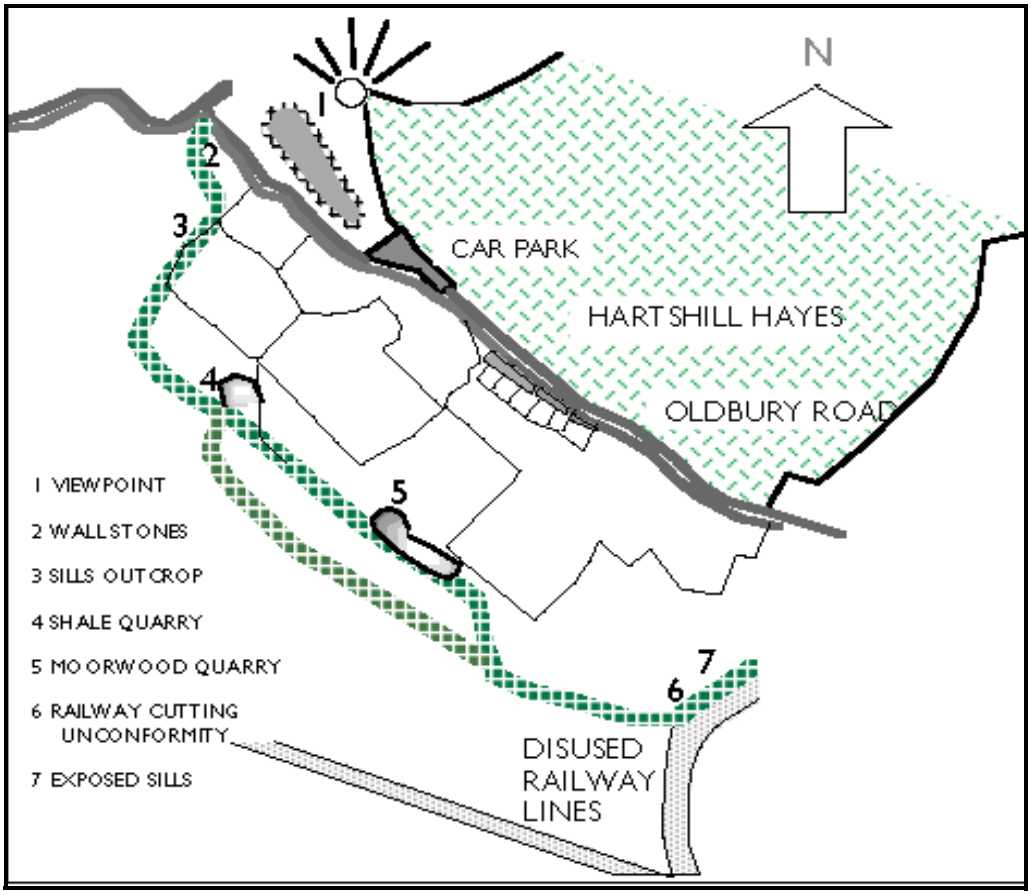
Saturday 15th September 2007 2pm - 4pm - Day trip
Meet at Hartshill Hayes Country Park car park - Grid ref SP 318 943

A walk of 30 mins from Mancetter Quarry (bring packed lunch).

For a copy of this trail see:
www.northwarks.gov.uk/clownloads/Moorwood_Trail_1.pdf



The scenery on and around the trail reflects the characters of the different rock formations. These were originally laid down as sands and muds on the floors of ancient seas. Over time, these sediments have been changed to sandstone and shales. Occasionally the remains of ancient sea creatures such as trilobites are found in these rocks.



Field trip - South Shropshire

Led by Martyn Bradley

Saturday 22nd and Sunday 23rd September 2007

A chance to explore Clee Hill, Caer Caradoc, Long Mynd and Stiperstones.

Saturday:

Starting just east of Clee Hill with a short walk to see Dudstone Sill, then on to Nordybank for a 2km walk. Stopping at Wenlock Edge for a picnic we then move on for a walk over Caer Caradoc. During the day we will see rocks aged some 300 (Carboniferous) to 600 (Pre Cambrian) million years old, now tilted, faulted and eroded into hills and scarplands.

Sunday:

We have a 3km walk round the flanks of the Long Mynd, then a drive over the Long Mynd to the Stiperstones for a 2km walk. For lunch either a picnic with mineral collecting at Snailbeach or a pub lunch in Stiperstones village. We will then visit either a fossil collecting site near Craven Arms or the Onny River Geological Trail

Contact Martyn at the Centre for Lifelong Learning for booking details and of each days programme. See opposite for contact details.

Clee Hill

Caer Caradoc

WGCG Program of meetings 2007-2008

Meetings are held at the rear of St. Johns Museum Warwick
Meet 7.15pm for coffee, 7.30pm start

Wednesday 10th October 2007
AGM followed by
Jurassic sea monsters and sea levels: a new look at Southam Quarry
Talk by Dr. Jon Radley, keeper of geology, Warwickshire Museum

Wednesday 14th November 2007
The Rev. Peter Brodie - founder of the museums collection
Talk by John Crossling - former keeper of geology, Warwickshire Museum

Wednesday 12th December 2007
Christmas Social
Talk by members of the WGCG Summer field trip to Colosay

Wednesday 23rd January 2008
Geology of Waterfalls, Gorges and Canyons
Talk by Brian Ellis

Wednesday 20th February 2008
The Great Rift Valley of East Africa
Talk by Dr. Nick Rogers - Open University

Wednesday 19th March 2008
Identification, Matching and Sources of Stone supply
for the Conservation and Repair of Stone Buildings
Talk by Dr. Graham Lott, BGS, Keyworth