THE OPEN UNIVERSITY GEOLOGICAL SOCIETY
GOGLEDD CYMRU - NORTH WALES
BRANCH NEWSLETTER

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Branch Organiser's Bit (September 2005)

August saw a visit to Hibre Island along with the North West branch. This was organised by Wendy Owens (GCy) and Hilary Tatton (NW branch), and was a great success. It attracted a large number of members from all over the area. My thanks go to Wendy and Hilary. Hilary is also organising a S260 and S269 revision day on Sunday 25th September in Chester. If you are worried about the exam and want some expert help there will be tutors on hand. To register please contact Hilary.

Good luck to everyone sitting exams in the next few weeks. I hope the revision goes well. I hope you will have time to spend a day looking at geology in the field during that time. We have Dr Rob Crossley leading a field trip to the Carmel Thrust on the north coast of Anglesey on Sunday 2nd October. Anglesey is geologically very interesting and is well worth the visit.

As I write I am in the process of finalising arrangements for an underground trip to the mine workings at Parys Mountain in November. The date is not fixed yet but it will be a Saturday or Sunday. **If you are interested please ring me a.s.a.p. as there will be limited numbers.** If you can't make Parys mountain in November but would still like the chance there is an option for a second visit early next year (possibly March) so ring and register your interest.

Rachel
GCy Branch Organiser

S260 & S269
REVISION DAY

SUNDAY 25TH SEPT. 2005
STUDY CENTRE
QUEEN'S PARK HIGH SCHOOL
CHESTER
Contact Hilary Tatton on 01244 677787
Email richard_hilary.tatton@virgin.net
For booking details

Borras Sand and Gravel Quarry and Minera Quarry

10 July 2005

The day was led by Dr Jacqui Malpas and Peter Appleton. We met at the Eco Centre at Borras Quarry where we could look at the geology maps of the area. The maps gave an idea of the extent of the glaciation which took place in the area, and the underlying solid geology. We were shown a small portion of the extensive quarry which showed a large number of features associated with glaciation.

In the last Ice Age two major ice sheets met in the Wrexham area - one originating in North and Central Wales (Welsh Ice) and one from the north (Scotland and Lake District) - (Irish Sea Ice). Wrexham is on what was a Delta Terrace. In the area glacial features such as kettle holes can be seen.

The Quarry material is complex and varied. There are two main sequences - an upper sand and gravel sequence and a lower sand sequence. The upper gravels were seen to be predominantly sub-rounded to sub-angular rock types. We identified a large variety of rocks including quartzites, limestones, sandstones, mudstones, granites (from Scotland, the Lake District and Snowdon), coal (from Wales) and chalk. During the retreat of the ice sheet, melt water flowed southward to deposit fluvoglacial sands and lake deposits of silts and clays.

The Granites seen came from Scotland, the Lake District, and Snowdon. These give clues to the direction of the ice source. Other clues came from the fact that both coal and chalk were identified. The coal was found in reasonable quantities and was angular in shape. This indicated that the coal had not come far. In fact it is most likely that the coal was from the Wrexham area. The discovery of Chalk in the quarry was a big surprise. I thought that chalk was only found in Southern England,

OUGS/NWGA
ANGLSEY – CARMEL THRUST
by Rob Crossley

2 October 2005
Contact Rachel Atherton
01942 270152 or email:
cymru@ougs.org

which made no sense at all, as glaciers tended to move from high areas to low, not the other way round. Jaqui explained that the chalk would have come from the Irish Sea. There had been a thin layer of chalk which had been removed by the Irish Sea Ice.

The sands associated with the gravels tended to be coarse to medium grained quartz and rock fragments. The lower units contain less gravels and the sands are finer grained. These are the product of glacial outwash. We saw evidence of erosion, scouring and deposition of material. There were a number of sedimentary features seen in the quarry face. There was cross bedding within the finer sands, and showed evidence of the direction of deposition towards the east.

The afternoon saw us at Minera where Limestone has been quarried for centuries. It is now owned by Lafarge but is now disused. Minera has an interesting industrial heritage as well as geology. The limestone was fed into the Hoffman limekilns which can still be seen, well preserved, on the site. As the afternoon turned out to be warm, our first stop were the Limekilns, where we could look inside and get an idea of the process involved.

A walk across the quarry, led to an unconformity which was exposed during the quarrying. This had been cleaned up by Peter Appleton, Jacqui Malpas and volunteers at the end of 2004. It was good to return and see whether the hard work had paid off. The unconformity can now be easily seen. The underlying rock is of Ordovician of Ashgillian age (443-439 Ma), whilst the overlying rock is Lower Carboniferous of Dinantian (D2) (362-322 Ma) Loggerheads formation and is an angular unconformity. The Devonian and Silurian deposits are missing (81 Ma of Geological History).

Moving on from the unconformity on the path back to the car park, there is a 3-D fault plane situated in the Lower Carboniferous (Dinantian) Loggerheads formation. It is a NW-SE trending normal fault with a throw of 3-4metres to the Southwest. There is evidence of Slickensides, and in-situ mineralization. The easily identified mineral was Galena (PbS). There was also sphalerite (ZnS), chalcophyrite (CuFeS2), smithsonite and quartz.

Minera also has a varied flora. We spent some time looking at and trying to identify the different species of orchid which florished in the quarry. One was later identified by Lyn Relph as the Common Twayblade (*Listera ovata*).

Rachel Atherton

Based on Field Visit notes by Dr Jacqui Malpas and Peter Appleton.

Minera Quarry Unconformity
(photo Jacqui Malpas)

Announcements

The membership secretary has asked me to remind members that any change of address should be sent to her (Penny Widdison e-mail: p.e.widdison@durham.ac.uk), this will ensure that a single database can be kept as up to date as possible. Please use the Giftaid on the renewal notice for membership – this will enable the OUGS to reclaim some of your tax, and put it to a better use.

Your committee for 2005 is

Branch Organiser	Rachel Atherton	gogledd .cymru@ougs.org 01942 270152 8 Merchants Crescent Lowton, Warrington WA3 2JZ
Committee Member	Sue Hughes	sue.hughes@virgin.net The Barn Cefn Golan Meifod SY22 6DP
Newsletter Editor	Tony James	anthojm7@aol.com 01270 651651 55 Coppice Road Willaston Nantwich CW5 6QD
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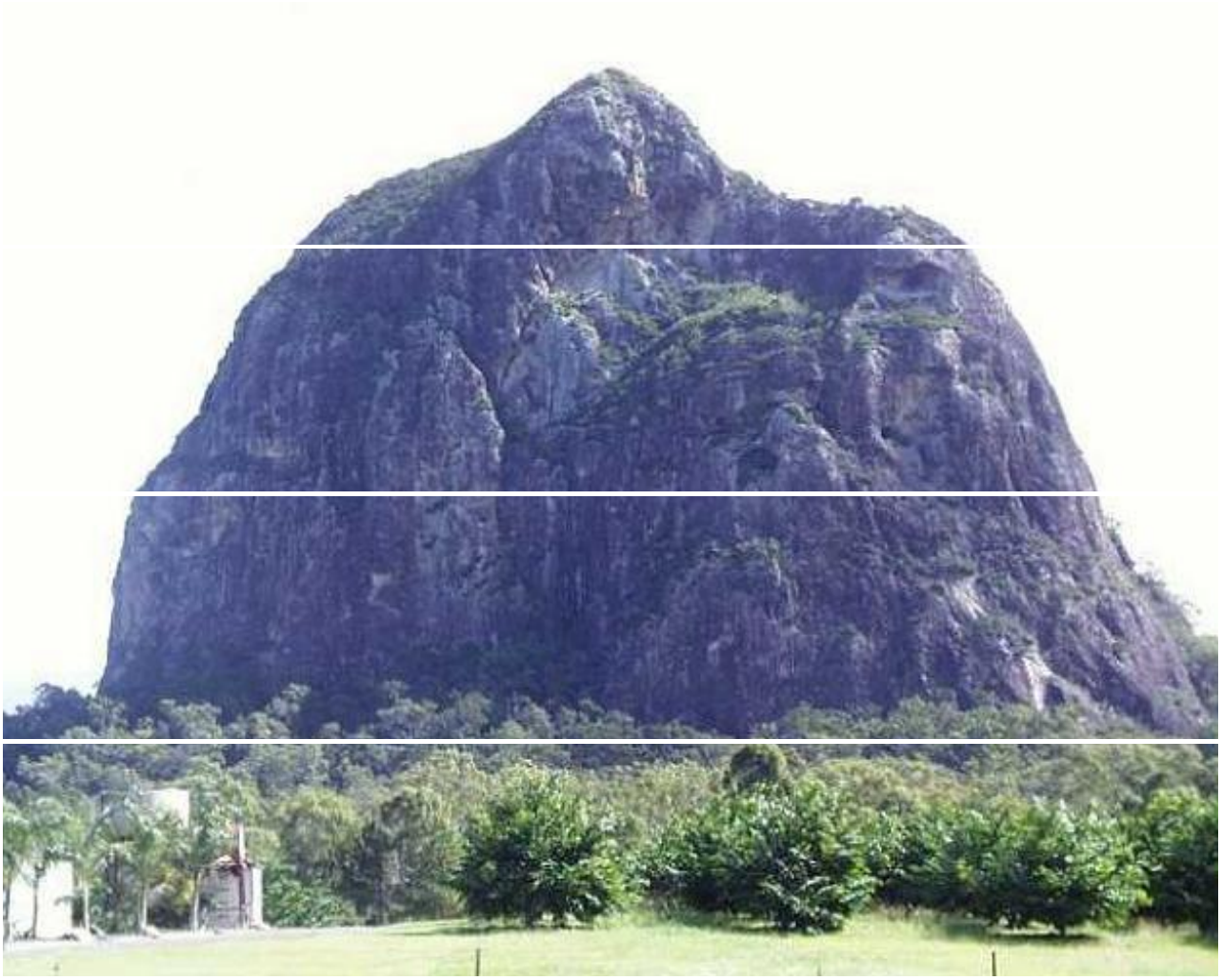
Committee member	Lyn Relph	hazlyn.relph@ukgateway.net

Here is the second half of Sue Hughes' notes on a trip to Australia's Glass Mountains.



Tibrogargan (above right) is composed of rhyolite. The trachyte and rhyolite rocks of the plugs have a higher silica content than basalt, producing light-coloured, resistant rocks. Some of the plugs have developed overhangs and caves near their summits. Several of the mountains (including Beerwah, Ngungun and Coonowrin) show vertical columns formed when the original magma cooled and contracted.

Aboriginal association with the area is reflected in the names of the peaks and in legends. To the Kabi Aborigines, the mountains are the petrified forms of a family fleeing the incoming tide and they believed that the spirits of the dead resided on the mountains. Of all the wonderful sights in our three week traverse of the East Coast, the stunning Glasshouse Mountains definitely made a lasting impression.

Sue Hughes
(photos courtesy of Sue Hughes)

UNDERGROUND TRIP TO
PARYS MOUNTAIN

Please contact Rachel Atherton on
01942 270152 or email to
gogledd.cymru@ougs.org
if you wish to book a place

The trip will be somewhat more strenuous than usual and will involve some bending and squeezing… sounds interesting. We are aiming for either 5/6th of November 2005. With possible second trip in March 2006.

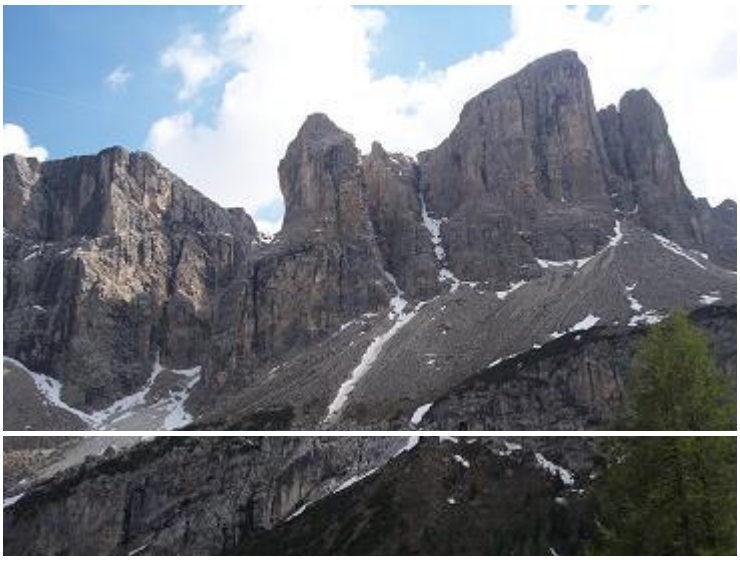
I have been asked to print an updated version of the insurance requirements for field trips. Please take careful note of the exact wording and consider it for your own insurance.

"**Each person attending a field meeting does so on the understanding that he/she attends at his/her own risk.** The OUGS has Public Liability Insurance Cover for field and indoor meetings, but Personal Accident Cover and Personal Liability Cover remain the responsibility and personal choice of the participant.
There may be an element of appropriate cover included in house insurance or in travel insurance: although OUGS activities are not particularly dangerous members are advised to check whether exclusions apply to activities in which they plan to participate in case they wish to arrange further cover. An annual travel insurance may be the best solution for any member who regularly attends field events: this again is a matter of personal choice.
Please note however that **all members participating in overseas events will be required to have travel insurance for the duration of the event**: this is so that participants are covered for Medical, Repatriation and Personal Liability expenses. The Personal Accident element remains the personal choice of the member and again members are advised to check exclusions so that they can make an informed decision about the cover they want."

Field trip list:-

25th September - S260/S269 – Revision day – contact Hilary Tatton on 01244 677787
2nd October - Carmel Thrust fault – Rob Crossley – Contact Rachel Atherton 01942 270152
5/6th November - Parys Mountain Underground – Local guide - Contact Rachel Atherton 01942 270152.
21st September – Talk on Huygens probe – NWGA at NEWI Nick Whitehead Lecture Theatre – contact Derek Jones on 01978 293098

For anyone who may be interested I strongly recommend obtaining a copy of a recent Scientific American Special Issue focussing on Geomagnetism. There are several articles concerning core/mantle; inner/outer core boundaries, and connections between events at these boundaries linked to superplume and pole reversal events. You might be able to order a copy online (and download).



The Dolomites near Val Gardena (photo Tony James)