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## Chairman's Introduction to 2005

Welcome to another scintillating year of geological offerings from the region's premier provider of earthly entertainments. Within this short issue you will find the first installment of the programme for the year, together with meetings of neighbouring associations who will welcome your presence.

With this Newsletter you will find a green application form for membership for the forthcoming year. There is little formality to be observed, and it is intended to be as simple as possible, i.e.

sign, date, pay and post. Income from your subscription

is our only source of revenue, while postage remains our largest single outgoing. We value your membership, and would not in fact exist without it.

Some of you will find your green form endorsed

with the word FINAL, and this should be explained. We are generous souls and will forgive a lapse of memory once in a while, so if payment is not forthcoming we will not simply cut people off, but seek to remind them gently with newsletters and additional requests for payment. We have to reduce costs for sake of prudent accounting, so when payment has not been received for AT LEAST one calendar year, and typically after four requests, we believe that enough is enough. If your form has FINAL on it, then we very much regret that you will not hear from us again unless you return it.

If you actually wish to resign, please tell us why. I will even refund your postage up to 28p so that you will not be out of pocket from doing so. Feedback is important so that we can improve our offering in the future.

The lecture is now over, so everyone can get up from behind the sofa and look forward to another year of geology, North Wales style. Thank You.



AGM at Robertson Research, photos by Arthur Hudson



## A Voyage Around the Prince Madog, Menai Straits,

Sunday November 7th 2004.

*Clare Dudman  
gives us an  
account of  
Fred Owen's  
Prince Madog  
visit*

*Clare's book:  
WEGENER'S  
JIGSAW, is an  
absorbing account  
of the human and  
scientific sides of  
Alfred Wegener.  
(champion of  
Continental  
Drift) ...do read it  
if you get the  
chance .*

It always seems wrong to me that there should be ducks swimming on the Menai Straits, although apart from the tide dragging the water a little way in and out, and the odd clump of seaweed, it is difficult to tell that this is the sea. It is quiet, calm and therefore an ideal place to anchor a precious piece of research equipment.

After an introduction to the history of the vessel we crossed the pier (first opened by Lloyd George more than a hundred years ago) and onto the ship. The Prince Madog is a chubby-looking vessel, just 35 metres long, yet large enough to deal with places like the north sea for up to ten days at a time. Interesting-looking pieces of equipment bristle from all sides, allowing it to accommodate the requirements of many scientific disciplines, from sampling marine organisms to taking seabed samples, from making high-level acoustic readings of the seabed to testing of geotechnical equipment.

Behind the deck, which houses impressive and versatile cranes, fore and aft, as well as various winches, there is an equally versatile laboratory: one voyage it may be devoted to a class of 20 undergraduates collecting species of marine wild life for a day, the next it may be taking 10 senior scientists on a research cruise collecting samples from the bottom of the seabed for geochemical analysis. It was

immaculate and empty, with impressive stainless steel fridges and water purification units.

The laboratories, one wet, one dry, are insulated against sound and vibration and the human resources are accommodated with similar style. There is a comfortable self-service restaurant (much more democratic these days, someone on the party remarked, remembering the Captain's table on its predecessor), and behind these a series of en-suite cabins, all carpeted and heated, and fitted with settees, tables, telephones, clothes lockers, washbasins and 2 metre berths with lights. All of it pristine and quite inviting, and it was hard to believe it was four years old.

Upstairs was a bank of computers networked to the various instruments aboard, and at the top of all this, like the final layer in a particularly complicated cake, was the bridge.

Although the hull was put together by a team of Romanian women welders, the bridge was designed by a race of Dutch giants: consequently the equipment was well out of reach of a normally sized Welsh female, but it looked highly impressive and everyone there could appreciate the excellent all-round visibility and usefulness of being able to steer from bow or stern.

Before we left we were shown the ship's booking records. The unique and versatile features of the Prince Madog, for instance the quiet slow speed engine option which allows high resolution surveys as well as a comforting reassurance there is something to get you home if the main engine fails, means that the vessel is in constant demand.

The two crews of eight take it in turns to take her out, and given the high standard of the accommodation it must be as much of a pleasure as ten days on the cold and turbulent British seas can be.

With thanks to Fred Owen for arranging the trip and the staff of the Oceanography Department of the University of Wales, Bangor for an interesting tour.



Engine room on the Prince Madog,

photo by Arthur Hudson

## The Geologic Edge of Anglesey

After leaving the Prince Madog Jonathan guided us along the southern geologic border of Anglesey, stopping at four locations between Menai Bridge and Plas Menai on the mainland.

At the first stop, just east of the Britannia Bridge, Jonathan explained the overall geological context of the region. Looking east across the Strait towards the Menai suspension Bridge, the opposite limestone shoreline is flanked by an escarpment, which marks the position of the Dinorwic Fault. This trends NE-SW towards Caernarvon and is the true southern geologic boundary of Anglesey. To the NW of the fault lies the L Carboniferous of the south Anglesey coast.

The Island itself is comprised of different slivers of recognisable blocks of crust, known as exotic terranes, forming the Mona Complex. They too have a NE-SW orientation. There is no correlation on the Welsh mainland with this formation; the nearest equivalent being in Ireland.

The Menai Strait was formed by glacial melt-water, which cut through the weaker red mudstones of the underlying Basement Beds, thus forming the natural geographic boundary between the Welsh mainland and Anglesey. On the mainland, between Port Dinorwic and Caernarvon, is a sliver of Arvonian (Precambrian) granite faulted against Westphalian (Coal Measures) sandstone in limestone.

Moving on to the second location at Felinheli Marina the L Carboniferous limestone beds were seen (A) to be dipping at ca 20° to 25° to the south; a relic of the Hercynian Orogeny. There was a pinkish tinge to the limestone, which also contained sandy lobes. At the third location, the beach at Dinas, the limestone beds were dipping steeply to the north. The limestone is thought to have been 'drag-folded' into a near vertical structure by movement against the Dinorwic Fault.

A few tens of metres along the beach to the south west of the outcrop (B) there was a

fining-up sequence of sub-horizontal, red Permo-Triassic strata on a poorly sorted conglomerate bed. These are interpreted as scree, debris flow, river and playa lake deposits along the foot of a fossil fault scarp. The succession has generally been considered to be of Upper Carboniferous age, but these relationships indicate that it is more likely to be Lower Permo-Triassic. The unconformable contact with the limestone beds could not be seen.

Jonathan explained that the limestone is 83% dolomite, 14 % silica and 3% calcium carbonate indicating dolomitisation by replacement of calcium with magnesium.

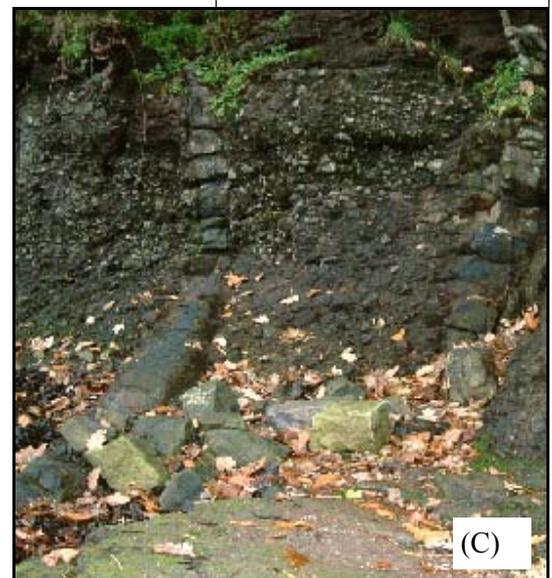
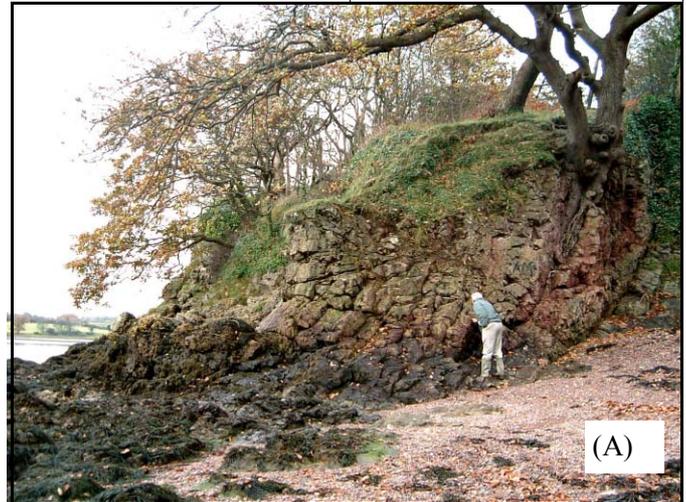
The limestone contained small crinoid ossicles.

The fourth location was at Plas Menai beach, where several Tertiary dykes (C) crosscut horizontal, better-sorted, red Permo-Triassic conglomerate and overlying sandstone beds.

Thanks were expressed to Rob for uncovering these interesting features and planning the route and to Jonathan for leading us in Rob's absence.

*Fred Owen  
summarises  
the afternoon  
field trip*

Photos by Arthur Hudson



## Melange

### New Feature - Caption Competition:

Please send or phone in your caption suggestion for the photo below.



*Fred Owen gives us an update on geological events occurring in the general area:*

### Liverpool Geology Society

LGS: website: [www.livjm.ac.uk/lgs](http://www.livjm.ac.uk/lgs)

**Sat 26 Feb: University of Liverpool Herdman Earth Science Society Symposium**, start 10.00 am, finish 4.00 pm. The theme is 'atoms to asteroid belts' incorporating lectures on progressively larger scales of deformation.

**8 March: 'Neanderthals and Island Dwarfs'**, Distinguished Visitor's talk by Prof Peter Wheeler

**3 April: Field trip to Cwm Graianog, Nant Ffrancon** with Joe Crossley

**w/e of 21/22 May: Field excursion to Quaternary sites of Anglesey**, leaders are Arnold Jones and Dave Williams

**12 June: Field trip to Mam Tor** with Chris Arkwright

**19 June: Field visit to Knutsford's Building Stones and Cobbles**, with our very own Fred Owen

Contact for all LGS events: Joe Crossley at [lgsjoecrossley@hotmail.com](mailto:lgsjoecrossley@hotmail.com) or 0151 426 1324

### Manchester Geology Association

MGA: website: [www.mangeolassoc.org.uk](http://www.mangeolassoc.org.uk)

**Sat 19 March: Afternoon seminar, 1.30 to 5.00 pm 'Living with Volcanoes'**, four talks by Prof Steve Self, Dr Peter Kokelaar, Dr Jurgen Neuberger and Prof Harry Pinkerton.

Contact: Jim Spencer: 0161 434 7977 or [jim.spencer@thales-is.com](mailto:jim.spencer@thales-is.com)

**W/e 8-10 April: Field weekend in Whitby** with Dr Joe Macquaker, a sedimentologist at Man Uni. (Joe gave a talk to NWGA ca 3 yrs ago)  
Contact: Jane Michael: 0161 366 0595 or [jane.michael1@tesco.net](mailto:jane.michael1@tesco.net)

Example caption for you to improve upon: Never mind the late Ordovician Conwy Castle sandstone turbidites, look at those flying pigs...

AGM & post-AGM field trip, photos by Arthur Hudson



## Event Details

**March 23rd Wed, Conwy, 7.30 am, Graptolites, muds and trapped bubbles: new insights into the copper deposit at Parys Mountain, Anglesey.** A talk by Anna Jones and Jan Zalasiewicz, Department of Geology, University of Leicester.

The copper mine at Parys Mountain, Anglesey was once the world's largest, and it has been intensively studied for over two centuries. Yet, the geology remains deeply enigmatic, and much of the complex structure and stratigraphy still requires to be elucidated.

In this talk, we examine the enclosing mudrocks with their contained fossils, and integrate this with analysis of the deposit itself. This has shed new light upon the structural, sedimentological and palaeogeographic setting of Parys Mountain, and on the mineralization process.

This is a great chance to hear an entertaining talk about up-to-date thinking on Parys Mountain and the origin of the copper.

**April 13th Wed, NEWI Wrexham, 7.30 am, Tsunami—with special reference to the Indian Ocean event,** talk by British Geological Survey scientist Dr David Tappin, explains the geological context of the recent tsunami disaster.

**April 29th Friday, Brymbo Social Club, Wrexham, 5.30 pm, Brymbo steelworks and Carboniferous coal mine reclamation themed meeting,** with Colin Davis and Howard Falcon-Lang.

The proposal is to start about 5.30pm with a talk by Colin Davies on the history of the steelworks, then a (free) hot-pot supper . Howard, from Bristol University, will talk after supper - he's suggested a title something like 'Wrexham's fossil rain-forests' or 'Wrexham's ancient tropical paradise' .

This is a joint meeting with the Brymbo Heritage Committee. Those of you that have heard Colin or Howard speak will know this is an evening not to be missed. There will also be a great deal of historical and fossil material on show.

Please note time, day and venue.

**Parys Mountain:** By way of background to our first talk of the season (in descending order): the modern shaft head, the old mine workings and acid lake (windmill stump for scale), old cars are dumped in the pit floor, the metal in cars that get flooded is completely dissolved away (including entire engine blocks), leaving only rubber, plastic and glass.....



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**NORTH WALES GEOLOGY DIARY:**


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**Visit our  
 website:  
 www.  
 ampyx.org.uk  
 /cdgc**

**March 19th Sat, NEWI Wrexham, 9.00 am, Wrexham Science Fair**, this year our stand will be called “**Ice and Fire**”, giving us the opportunity to demonstrate materials pertinent to the Ice Age and to Steel Manufacture at Brymbo. Please do contact us if you have any samples/photos etc. or you would like to help. Set-up 8.00 to 9.30 am, public arrive from 9.45. Finish at 5.00 pm.

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**May 18th Wed, Conwy, 7.30 am, Tenerife volcano**, talk by Will Jones

**June 12th Sun, Glyn Cerriog, All day, field trip**, with leader to be announced.

**July 16th Sat, Castleton, All day, field trip to Mam Tor area**, with Ken Howarth

**September 21st Wed, NEWI Wrexham, 7.30 am, The Huygens Probe encounter with Titan**, talk by Dr Andrew Ball, Open University.

Planned summer evening field trips:

**Limestone landscapes of Llandulas, Colwyn Bay area**

**Ice age waterfalls of the Conwy Mountain area**

Details to follow later