

# **JOHN S. MASON: Curriculum Vitae**

## **QUICK GLANCE QUALIFICATIONS:**

**GCE 'O' LEVELS** - (Malvern Hall School, Solihull, 1974-79): English (A), Mathematics (C), Physics (B), Chemistry (B), Biology (A), Geography (A), Literature (C).

**GCE 'A' LEVELS** - (Solihull Sixth Form College, 1979-81): Geology (A), Chemistry (B).

**HONOURS DEGREE** - (University of Wales, Aberystwyth, 1981-85): Geology (2.2).

**POSTGRADUATE RESEARCH DEGREE** - University of Wales, Aberystwyth: external M.Phil degree awarded 1994. Thesis: A Regional Paragenesis for the Central Wales Orefield.

Full clean Driving Licence.

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## **My working life to date**

Can you live with a relatively low-carbon lifestyle in Central Wales and get enough interesting work to survive? I would say yes – just about – but you must be prepared to diversify, tapping into as many of your skills as possible. As well as professional skills, a degree of self-dependence is highly important: in this context I grow most of my own vegetables, do a fair amount of foraging and catch my own sea-fish on a regular basis. It all helps and it keeps one reasonably fit especially when work is desk-bound.

I have arranged my working life into six categories: 1) scientific interpretation; 2) geological conservation and research; 3) author – non academic books; 4) my involvement with severe weather photography and research; 5) information technology and 6) things from the dim and distant past.

### **1) SCIENTIFIC INTERPRETATION: 2002-PRESENT DAY**

#### **1.1: Dunedin Academic Press: 2012-14**

In early 2012 I was commissioned to write a book with the working title *Introducing Mineralogy*, aimed at first-year undergraduates with no prior knowledge of the subject. Thus, it had to get through a lot of technical material in a very reader-friendly way, something I specialise in. I ended up not only writing the book but also illustrating it. The book was completed in 2014, being published late in that year: so far, reviews have been very positive.

#### **1.2: Snowdonia National Park: 2013-14**

One of the most challenging and interesting projects I have delivered was the Darwin Wall at the new National Park Visitor Centre at Ogwen. The Wall was to commemorate Darwin's 1831 geological traverse of Snowdonia, by inlaying a 25m length of its top with cut and polished tiles of the rocks he would have encountered on his way from Bangor to Barmouth via Cwm Idwal, Ffestiniog and Trawsfynydd. My job was to interpret the likely route and then go out and collect suitably large samples for cutting – in essence this meant collecting 2-3 tonnes of large boulders from numerous localities along the way. I then supervised the cutting, polishing and ordering of the samples and

the wall was completed on-time, the official opening being in the summer of 2013. It was a great teamwork experience, involving myself, a stonemason and a monumental masonry company, plus slate quarrying companies and First Hydro, and I think we all learned a lot off each other in the process. The project then continued into 2014 with the production of an interpretation leaflet: further, more detailed interpretation is in the pipeline.

### **1.3: Aberystwyth University: 2013-present day**

Since Autumn 2013 I have been teaching short courses on the geological evolution of the Welsh landscape for the Department of Lifelong Learning. The courses involve a lecture/Q&A followed by three days of field trips taking in aspects of Welsh geology from the Precambrian to the Quaternary. They are aimed at people of any age with an interest in geology.

### **1.4: Skeptical Science website: 2011-present day**

As a geologist and someone with a strong interest in weather and climate, I saw the invitation from John Cook to join the team of volunteers that runs his award-winning Skeptical Science website as a great opportunity. We are widely regarded as one of the most informative climate change websites in the world: we routinely debunk the wide range of myths (a mixture of pseudoscience and conspiracy-theories) that regularly appear in some sections of the media. The debunkings and related topical blog-posts are all fully referenced back to the peer-reviewed literature, giving readers the opportunity to double-check our writings for themselves. Climate change is deadly serious and I regard it as a privilege to be at the forefront of the battle against the constant stream of anti-science misinformation. Through this experience I have also had the occasional piece published in the Guardian.

### **1.5: Centre for Alternative Technology: 2011-present day**

In 2011 I was commissioned to develop a presentation of the geological history of Mid-Wales for CAT's Living Landscape Festival. The show took the visitors from the formation of the Earth right through to the present day and how the Welsh landscape has evolved and why. Since that time, with CAT's resident Artist and local artist Jane Lloyd Francis, we have been developing an interesting guided trip around the old slate quarry itself, accessed via a short tunnel: the trip combines geology and the arts in a unique fashion that is best experienced rather than described!

### **1.6: Cardiff University: 2010-12**

I teamed up with Prof. Julian Pearce, then of Cardiff University's Department of Earth Sciences, to run a third-year undergraduate residential field-trip in North Wales, involving teaching of the study of ore-deposits (of which there are a great variety in the district). We developed exercises in Coed y Brenin, where there exists a wide range of mineral deposits, and included a further afield day-excursion to the famous old copper-mines of Parys Mountain on Anglesey.

### **1.7: Spirit of the Miners: 2006-07**

I was involved in a variety of interpretation projects commissioned by Spirit of the Miners - the Ceredigion Uplands Regeneration Initiative. The initiative was managed by Ceredigion County Council and funded by the Welsh Assembly Government, the European Objective 1 programme and the Countryside Council for Wales. My input comprised a) writing and illustrating a bilingual colour booklet on the mines and minerals of the area and b) the design, writing and layout of 6 bilingual interpretation panels, for projects involving Central Wales RIGS, Trefeurig Community Council, CADW, CCW and the Welsh Mines Preservation Trust. The panels are sited at the following mines: Cwmystwyth, Cwmsymlog, Cwmrheidol and at the remains of the Pont Ceunant Generating Station near Frongoch.

## **1.8: National Museum of Wales: 2004-05**

A *Mineralogy of Wales* – a listing of all the different minerals to be found in the country with localities, descriptions and references, was first published as a book in 1994. By 2003, so many new discoveries had been made, many through the MINESCAN project (see 2.3), that it was felt that an update was due. I co-wrote the second edition, with prime responsibility for dealing with the ore-minerals. The fully revised version, with lots of new data, was published not as a book but as a website within the National Museum's main website. The results of this major project may be seen at [http://www.museumwales.ac.uk/en/mineralogy\\_of\\_wales/](http://www.museumwales.ac.uk/en/mineralogy_of_wales/).

In 2001, whilst working at the Museum on other things (see 2.3) I wrote and co-produced a bilingual colour booklet, "Mineral Treasures of Wales". This gave readers an introduction to Wales' diversity of mineral deposits.

## **1.9: Forest Enterprise: 2002-04 and guided trips to present day**

The possibility of a geological trail incorporating several GCR sites (see 2.3) in Coed Y Brenin (NE of Dolgellau) was conceived in the late 1990s. In 2002-2003 I designed and wrote the trail guide and interpretation panels: the trail officially opened in May 2004. This was, I believe, the first geological trail in any Forest Enterprise woodland. The trail looks at various mineral deposits related to volcanism in early Ordovician times and includes the well-known Coed Y Brenin porphyry-copper deposit, discovered by Riofinex Ltd in the 1960s. Part of the work involved excavating an exposure of the "ore-zone" of this deposit. The trail has since been modified a little with new footpaths created to make the route as circular as possible: its current name is the Volcano Trail. I have taken many groups (such as members of the Open University Geological Society) around the trail and to other nearby localities in the years since the trail opened.

## **2) GEOLOGICAL CONSERVATION/RESEARCH: 1996-PRESENT DAY**

### **2.1: Welsh RIGS groups: 2005-2009**

From 2005-2009 I worked with groups in Gwynedd, Clwyd, Pembrokeshire and Central Wales inputting site data into RIGS documentation. RIGS stands for Regionally Important Geological Sites, which are localities of educational or research value. Part of a team of specialist geologists, the sites I covered in these areas are flagged-up for their mineralogical and/or metallogenic features. Documentation is held on a central database and is also passed on to the relevant Planning Authorities.

### **2.2: RML Ltd/Symonds Group/CCW/Dulas Ltd: 1997-present day**

In 1997, I was commissioned by RML (Richards, Moorehead and Laing) to undertake a field-survey, and provide a database and report, on a number of disused metal mines in the SW Shropshire Orefield, as part of a feasibility study into their partial reclamation. The work, in the MINESCAN idiom (see 2.3), involved assessment and delineation of any areas of mineralogical importance at the sites specified. The association with RML went back to the late 1980s/early 1990s, when a number of minesite rehabilitation projects were done in Central Wales and I advised on mineralogical aspects of several such sites.

In 1999, I was contracted by Symonds to undertake the mineralogical assessment of features exposed in a working quarry in Charnwood Forest, Leicestershire. The work involved the rope-access inspection of a 60m rock-face, collection of samples, assessment and compilation of a report. The aim of the work was to determine whether features examined in the face were of sufficient scientific interest to warrant being made accessible as part of the afteruse plan upon closure of the quarry.

In 2010 I surveyed working quarries in South Wales for then Countryside Council for Wales (CCW), in order to establish a practical plan to conserve features of geological importance upon their eventual closure. I have also advised this body, now part of Natural Resources Wales, on numerous minor issues regarding sites of scientific importance.

In 2011 I worked as a consultant to Dulas Ltd on the site of a proposed windfarm at Nant-y-moch, near Aberystwyth. The work involved mapping out, documenting and photographing areas of regional and national geological importance, so that any future construction work, including road-building and quarrying to obtain aggregate, would avoid damage or disturbance to them.

### **2.3: National Museum of Wales: 1996-present day**

My association with the Department of Geology, National Museum of Wales, Cardiff, goes back many years, but this was the first time I became professionally involved. Early 1996 saw the initiation of the MINESCAN project, for which I was taken on as a consultant. The work began with a three-month desktop study in order to rationalise various and varied listings of disused Welsh metal mines. This proved to be a good plan as some listed grid references plotted out in the middle of the Irish Sea.

Simultaneously, a set of weighted criteria were developed, against which the mineralogical and/or metallogenic interest of the mine sites could be assessed in the field, resulting in each site being awarded a numerical score. The ranking system was designed to determine whether the sites were of sufficient quality to be incorporated into the Mineralogy Block of the Geological Conservation Review (GCR). Set up by the Joint Nature Conservation Committee (JNCC), the GCR programme was implemented to afford sites of national geological importance statutory protection as Sites of Special Scientific Interest.

The second, much bigger part of the project lasted for four years. It involved the field assessments and rankings of over 1000 Welsh mine and mineral sites on a county-by-county basis. The work, financially supported by CCW, involved site visits, sample collection, follow-up laboratory work and database compilation with, finally, recommendations on the status of each site in terms of GCR significance.

1996 saw Dyfed & Powys mines examined, 1997 was spent in Gwynedd, 1998 in Clwyd and 1999 in Glamorgan & Gwent. The work has resulted in an unprecedented, detailed regional view of metallogenesis in Wales, from which various publications are continuing to be generated.

In 1999 I was also commissioned by the JNCC to co-author the Welsh chapter of the GCR mineralogy/ metallogenesis volume, Mineralization of England and Wales, the first draft of which was completed in March 2000. The full book, now with other chapters on various parts of England, was finally published by the JNCC in the autumn of 2010.

In 2000-2001, I worked at the Museum, doing research into and curating a PhD collection from the Dolgellau Gold-belt. The work involved conservation of numerous samples (both rough rock and polished sections) and their examination and description: as in all such cases, the process involved much petrology and scanning electron microscope work.

In 2006 I was made an Honorary Research Fellow of the Museum. Research continues when I have the time and resources available.

### **2.4: List of peer-reviewed publications (oldest first)**

#### **First Author:**

Mason, J.S. and Hughes, S.J.S. 1990. Geology of the Darren District. In: Hughes, S.J.S. The Darren

Mines. *British Mining, Northern Mine Research Society*, 40, 131-141.

Mason, J.S. 1992. Wulfenite in the British Isles. Part Two: Wales. U.K. *Journal of Mines and Minerals*, 11, 38-41.

Mason, J.S. 1994. A Regional Paragenesis for the Central Wales Orefield. Unpublished MPhil thesis, University of Wales.

Mason, J.S. and Rust, S.A. 1995. An unusual occurrence of arsenate minerals at Gwaith-yr-Afon mine, Dyfed, Wales. *Journal of the Russell Society*, 5, 109-113.

Mason, J.S., and Green, D.I. 1995. Supergene minerals including exceptional ramsbeckite from Penrhiw Mine, Ystumtuen, Dyfed. U.K. *Journal of Mines & Minerals*, 15, 21-27.

Mason, J.S., and Green, D.I. 1996: Supergene copper mineralisation in situ at Lodge Park Copper Trial, Dyfed. U.K. *Journal of Mines & Minerals*, 17, 19-23.

Mason, J.S. 1997. Regional polyphase and polymetallic vein mineralisation in the Caledonides of the Central Wales Orefield. *Transactions of the Institution of Mining and Metallurgy (Section B: Applied Earth Science)*, 106, B135-B144.

Mason, J.S. and Rust, S.A. 1997. The Mineralogy of Ystrad Einion Mine, Dyfed, Wales. U.K. *Journal of Mines and Minerals*, 18, 33-36.

Mason, J.S., Fitches, W.R. and Bevins, R.E. 1998. Pre-tectonic auriferous vein-type mineralisation in North Wales. In: Abstracts volume, Geoscience '98 conference (London: Geological Society, 1998), 147.

Mason, J.S. 1998. Tucekite, a mineral new to Britain, and other rare ore minerals from the Central Wales Orefield. U.K. *Journal of Mines and Minerals*, 19, 30-36.

Mason, J.S., Fitches, W.R. and Bevins, R.E. 1999. Evidence for a pre-tectonic origin for the auriferous vein-type mineralisation in the Dolgellau Gold-belt, North Wales. *Transactions of the Institution of Mining and Metallurgy (Section B, Applied earth science)*, 108, B45-B52.

Mason, J.S. and Bevins, R.E. 2002. St Elvis Mine, Solva, Pembrokeshire: Another Elizabethan tetrahedrite occurrence? *British Mining* 71, 5-12, Northern Mines Research Society.

Mason, J.S., Bevins, R.E. and Alderton, D.H.M. 2002. Ore Mineralogy of the mesothermal gold lodes of the Dolgellau Gold Belt, North Wales. *Transactions of the Institution of Mining and Metallurgy (Section B, Applied earth science)*, 111, B203-B214.

Mason, J.S. 2004. The development and preservation of supergene lead mineralisation in Central Wales. *UK Journal of Mines and Minerals*, 24, 35-46.

Mason, J.S. 2014. Elyite from a Roman lead smelter near Llancynfelyn, Central Wales. *Journal of the Russell Society*, 2014, 32-35.

#### **Co-Author:**

Rust, S.A. and Mason, J.S., 1988. The minerals of Esgair-Hir mine, Dyfed, Wales. U.K. *Journal of Mines & Minerals*, 5, 35-43.

Patrick, R.A.D., Mason, J.S. and Gallagher, M.J. 1991: Auriferous structures in the Upper Dalradian

near Aberfeldy, Scotland. In: Abstracts volume, Prospecting in areas of glaciated terrain, Edinburgh 1991, Institution of Mining and Metallurgy, London.

Swainbank, I.G, Colman, T.B, Fletcher, C.J. and Mason, J.S. 1992. Multiple sources for lead mineralisation in the Caledonian terrane of Wales. In: Abstracts volume, Mineral Deposit Modelling in relation to crustal reservoirs of the ore-forming elements. Institution of Mining and Metallurgy, London 1992.

Green, D.I., Rust, S.A. and Mason, J.S. 1996. Frongoch Mine, Dyfed. U.K. Journal of Mines & Minerals, 17, 29-38.

Bevins, R.E., Mason, J.S. and Wood, M. 1996. MINESCAN - WALES: Specimen acquisition and site conservation. Acta Mineralogica-Petrographica, Szeged, XXXVIII, Supplementum, 14.

Bevins, R.E. and Mason, J.S. 1999. MINESCAN - Selection Criteria for Mineral Site Conservation. In: Baretino, D., Vallejo, M. and Gallego, E. (Eds): Towards the Better Management of the Geological Heritage in the New Millennium, Madrid, Spain, pp. 21-23.

Cotterell, T.F., Mason, J.S. and Dean, A.C., 2010. Hübnerite in alpine-type fissure veinlets in the Cambrian manganese ore bed, Harlech, Wales. Journal of the Russell Society, 13, 47-52.

Bevins, R.E., Young, B., Mason, J.S., Manning, D.A.C. and Symes, R.F. 2010. Mineralization in England and Wales (Geological Conservation Review Series). Joint Nature Conservation Committee. 598pp; ISBN-10: 1861075669

Cotterell, T.F., Green, D.I., Hubbard, N.H., Mason, J.S., Starkey, R.E. and Tindle, A.G. 2011. The mineralogy of Dolyhir Quarry, Old Radnor, Powys, Wales. Uk Journal of Mines and Minerals, 32, 5-61.

### **3) AUTHOR, NON-ACADEMIC BOOKS: 2011-PRESENT DAY**

#### **3.1: Shore Fishing: A Guide to Cardigan Bay: 2011-13**

I have been a keen sea-angler for the past 30 years and in 2009 I undertook the challenge to catch over 40 species of fish from the Welsh shore, something that when completed left me with a strong sense of achievement but also with a comprehensive collection of high-quality images. A workless period in 2010-11 left me determined that next time work was thin on the ground I would use my time enterprisingly and in late 2011 I began writing a book sharing my experience and knowledge of Cardigan Bay. Over several months I converted memory into the written word and by the end of the year I had a publisher lined up. 2012 saw much travel to get remaining photographs and creation of various diagrams plus endless rounds of editing and proof-reading. The book was launched in February 2013 and it has received excellent reviews and is selling well. The aim was to produce something whose usefulness would never go away as new people come into the activity every year.

#### **3.2: 52 Weeks in the Dyfi Valley: 2014-present day**

This is a project nearing completion and publication options are now being considered. The essence of the book is a collection of 52 images showing the changing weather and seasons in the Dyfi Valley, but it not only includes weather: geology, landscape and wildlife are all in there too. Each image is accompanied by a block of text explaining what is going on in non-technical terms and my intention is to make the book bilingual. Watch this space!

## **4) SEVERE WEATHER PHOTOGRAPHY: 2000-PRESENT DAY**

### **4.1: The Dyfi Valley & Welsh Weather Image-Library: 2007-present day**

In 2007 I spent a lot of time digitising my collection of photographic slides. From the best of these (ca. 350 images) I compiled the first version of an online image-library, navigable either by geography or by weather-type. This ongoing project offers prints (up to large format) and digital images for multimedia use. Already a very comprehensive photographic resource on the Machynlleth and Dyfi Valley area and on Welsh weather, it continues to expand steadily, assisted by the acquisition in early 2009 of a Nikon D300 DSLR, and is now heading for 600 images. The Image-library is at [www.geologywales.co.uk/storms/gallery](http://www.geologywales.co.uk/storms/gallery) .

### **4.2: Wales' only severe weather/climate blog: 2000-present day**

In the closing years of the 20th Century, I became interested in severe (particularly convective) weather - squall lines, thunderstorms, tornadoes and so on. When time is available and conditions are right I analyse online data and intercept storms armed with a camera. The results are posted on my popular Welsh weather/climate blog at [www.geologywales.co.uk/storms](http://www.geologywales.co.uk/storms). Updates vary but once a month is the rough average over a year – it of course depends on how interesting the weather has been! The site gets a surprising number of unique visitors - hundreds per day is by no means unusual.

### **4.3: Talks, TV and Radio: 2000-present day**

I give regular talks on weather-photography (and also geology) to local groups but also further afield, including lecturing at the Royal Meteorological Society in London and Manchester. I have appeared in several weather and climate-related programmes in recent years for BBC1 (including Countryfile - launching its weather photography competition), BBC Wales, ITV Wales, national and local radio. I am comfortable working to camera in both recorded and live situations.

### **4.4: TORRO: 2000-present day**

The Tornado and Storm Research Organisation is a privately supported research body, serving the national and international public interest. Founded in 1974, data-collection, research and co-ordination is undertaken by the Directors of TORRO, supported by some 400 observers, investigators and other contributors. Most supporters are British, with a smaller number from elsewhere in Europe and across the world. Work by all TORRO personnel is undertaken voluntarily. TORRO Staff are composed of professional and amateur meteorologists, with academic qualifications ranging from nothing to doctorates: the only requirements are an interest in the subject area, enthusiasm and a desire to add to the body of scientific knowledge relating to our changeable and at times spectacular climate.

Of all the occasional TORRO-related activities I have been involved in, the aftermath of the strong (F2/T4) Bow Street Tornado in 2006 was by far the most interesting. I mapped and documented the damage along its track in detail and did a number of live TV interviews explaining what had taken place. By UK standards this was certainly an extreme weather event.

## **5) INFORMATION TECHNOLOGY: 2000-PRESENT DAY**

During the 1990s my IT experience was pretty much Microsoft Office-based. However, in 2000 I completed a Web Design course at Cyberspace, Machynlleth's Cyber Cafe and I.T. Centre between 1998 and 2004, where I went on to work on a part-time basis. Since then I have offered freelance web design services, with a number of local (non-geological) customers, such as [William Lloyd Williams](#), [CAMAD](#), [Mid and West Wales Welding](#) and so on. Although I have used Flash and similar on

request, I prefer straightforward uncluttered sites which convey the information the viewer is looking for quickly and effectively, with straightforward navigation an absolute must! I am also experienced in Photoshop, Quark Xpress and other graphics/DTP software, plus presentation tools such as Powerpoint.

## **6) HISTORICAL: 1988-1995**

**Voluntary Field Assistant (Mineral Reconnaissance Programme, British Geological Survey, 1988-89):** Regional and specific area surveys for gold, platinumoids and base metals, mainly in Scotland (Ochils, Glen Clova, Loch Ailsh) involving drainage, soil, deep overburden and rock sampling supplemented by geophysical surveys and diamond drilling. Additionally gained experience at BGS Keyworth in all aspects of sample preparation for analysis.

**Project Geologist (Colby Resources Corporation of Vancouver, 1989-91):** Regional and specific area surveys for gold in the Scottish Dalradian involving similar techniques to the BGS work plus liaison with estate owners and Crown Agents, geological mapping, trenching of auriferous veins and the sinking of an open stope on a particularly rich vein at the Calliachar Burn prospect. Promoted to managing field geologist in 1990; corporate (& therefore field) operations ceased in late 1991.

**General geologist (1991-95):** Based in Central Wales and undertaking a variety of contracts, including rock face demolition & stabilisation (Constitution Hill, Aberystwyth, for Posford Duvivier Ltd, Welshpool Quarry for Richards Moorehead & Laing Ltd); minesite surveys (for Richards, Moorehead & Laing Ltd); emergency dewatering of mineworkings and underground drainage maintenance (National Rivers Authority Welsh Region); exploration for baryte at Cothecott, SW Shropshire (Colin Stewart Minchem Ltd); shotfiring & rock blasting for seismic surveys, farm roads, foundations etc (SJS Hughes Mining Services); archival geological research of planned windfarm sites (Dulas Engineering Ltd).