



# The Black Country Geological Society

NEWSLETTER No. 76. August, 1989:

Meetings are held at The Saracen's Head, Stone Street, Dudley 7.30 for 8 o'clock.

The Society does not provide personal accident cover for members or visitors on field trips. You are strongly advised to take out your own personal insurance to the level which you feel appropriate. Schools and other bodies should arrange their own insurance as a matter of course.

## Forthcoming Meetings:

Sunday: 17th September: Field Meeting Warwickshire. Southam Quarry and Burton Dassett Hills. Leader - John Crossling, Keeper of Geology at Warwickshire Museum. Meet 10 a.m. at the Market Place, Warwick at the rear of the Warwickshire Museum. The meeting will start with a short tour of the museum and an introduction to Warwickshire geology. Southam quarry is a few miles east of Warwick and is in the Blue Lias (Lower Lias). Its interbedded limestones and clays are worked for cement.

Burton Dassett Hills are Middle Lias and include the Marlstone Rock bed, a ferruginous limestone which forms a distinctive outcrop due to its relevant hardness. It was quarried in the area for iron making.

John Crossling promises that both sites are VERY GOOD for COLLECTING FOSSILS.

Monday: 2nd October: Lecture by Dr. Ken Addison "The Age and Nature of Glaciation in North Wales: a modern Interpretation."

North Wales and its glaciation has always interested geologists and it is a classic area where the ideas of glaciation were first worked out by geologists in the last century. Dr. Addison has studied the area in detail and his lecture will describe the latest thinking on the subject.

Dr. Addison is senior lecturer at St. Peter's College, Oxford and at Wolverhampton Polytechnic. He has worked extensively in the glaciers and icefields of Alaska, Norway and Switzerland, and has made a special study of glaciation in North Wales.

Sunday: 29th October: Field Meeting to the Wrekin. Leader: Dr. Alan Wright of Birmingham University. Meet 10.30 a.m. at the entrance to the old quarries at Buckatree Glen opposite Buckatree Hotel on the west side of the Ercall. To get there, leave the M54 at its end (exit 7), turn left, then sharp left at the Forest Glen cafe.

Chairman  
A. Cusler B.Sc., M.C.A.M.,  
Dip.M., M.Inst.M.  
Vice Chairman  
J.E. Gollidge M.A.  
Hon. Treasurer  
Mrs J. Shilston  
Hon. Secretary  
P.D. Shilston M.A., C.Eng.,  
F.I.E.E., M.I. Mech.E.

The Wrekin-Ercall area is one of the international sections for the boundary between the Precambrian and Cambrian. Dr. Wright has been working on this boundary and is publishing a paper on his results. He will be able to update members on his findings.

Monday: 4th December: Lecture on gold - "Very precious metals in the British Isles" by Dr. R. A. Ixer of Birmingham University.

Bob Ixer is an old friend of the society. He is very supportive of our activities and has given us several lectures and led field meetings over the years. His speciality is minerals and ore deposits, and his work on gold and precious metals will be the subject of the lecture.

Monday: 15th January, 1990: Lecture by Spencer Mather "Minerals and their environment in Southern Norway".

Spencer comes from the West Midlands, but he spent over 20 years as a mining engineer/geologist in Norway. He has an extensive mineral collection, and has also written a textbook (for the Norwegians) on Norway's mineralogy.

Monday: 26th February, 1990: 7.45 p.m. AGM followed at 8 p.m. by an illustrated talk "Geology and wildlife in Kenya" by Sheila Pitts. Sheila was in Kenya in December, 1988 when she visited the Rift Valley, the southern National Parks, Mombasa and the Indian Ocean Reef.

Monday: 26th March, 1990: Lecture "Geology and Mineralogy of the Caldbeck Fells in Cumbria" by Dr. R. King, Curator of the John Moore Museum, Tewkesbury, formerly of the National Museum of Wales.

April, 1990 field trip - t.b.a.

#### Editorial:

Many thanks to all those who contributed, helped, attended and hopefully enjoyed the barbecue, and not least the elements. There are now several houses for sale in the vicinity!

I would also like to thank those of you who have sent in geological cuttings from the papers and those who contributed to the newsletter with write-ups or special articles, without which the newsletter would be greatly weakened. Please keep them flowing in.

Finally our autumn programme should be just the thing to look forward to after those refreshing summer holidays. It is as varied and interesting as any. See you all for fossil hunting on September 17th, bring a friend.

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#### The Murchison Symposium:

##### Post Symposium Visit to the Black Country Museum:

On the evening of Friday 7th April, some 101 delegates to the Symposium visited the Black Country Museum as part of a post-symposium field excursion.

The delegates, from all over the world, arrived by coach and after brief refreshments were welcomed to the Museum by the Mayor of Dudley, Councillor Mrs. Hough, who stayed for all the programme. Each delegate was presented with a folder, prepared by Dudley Museum staff, which contained several geological booklets and papers and included a copy of the newly prepared "Exploring the Past, an introduction to the rocks and fossil of the Dudley area", which features on its front, an impressive specimen of Calymene Blumenbachii, an original Murchison fossil on display in the exhibition.

Colin Reid, the Keeper of Geology at Dudley Museum, then gave a brief talk about the evenings programme and the exhibits on display, which included all the known Murchison Silurian fossils, begged and borrowed where necessary. Also on display was the inscribed copy of the "The Silurian System" donated by Murchison himself to the Dudley and Midland Geological Society and now kept in the Local History Archive at Dudley Library and a copy of the poem "The Dudley Gathering". On completion of his address Colin invited the delegates to look around the exhibition and the Black Country Museum itself, prior to the canal trip.

The exhibition also included displays by the Dudley Cave and Rescue, Wrens Nest Nature Reserve and, of course, BCGS as well as several different cabinets of fossils from the area.

Our Society was well represented by among others, Alan Cutler, Steve Hughes and Graham Worton, who took turns in manning our display and handing out literature, while Paul Shilston, with some help from myself manned our stand. Many delegates showed interest in BCGS and the £50 donation to the proceedings made by the Society, seemed money well spent. We did rather well, managing to sell five sweat shirts (we could have sold more if we'd

had the sizes), six dozen Christmas cards, these being rather apt as they displayed the 1849 Dudley Gathering, and one copy of the "Black Country Geologist". The Symposium has really put BCGS on the map and our logo may now be seen in places as far away as America, Canada, Norway and Sweden.

At about 7.15 p.m., the delegates and other guests, including the Lady Mayor, were transported, by three barges, to the Singing Cavern where we alighted and were given a brief description of the Murchison visit by John Thackeray of the British Museum, who is also Archivist of the Geological Society and then treated to the full computerised "Singing Cavern Experience".

On returning from the canal trip the visitors were split into three groups and while one group was wined and dined the other two continued their visit to the many and varied attractions of the Museum itself which was fully manned for the evening.

As a documentary of the evenings events, a video was made of the opening ceremony, the display of fossils, books, the display stands and of the canal trip and gathering in the Singing Cavern. It will be interesting to see how it turns out and perhaps it may be possible for the Society to show the film at some time.

As the evening progressed and all the delegates and guests had dined, more and more of the people, including Steve and I, made their way to the Museum pub. There, a considerable gathering of amateur and professional geologists, from various parts of the world, spent a pleasant hour or so sitting in the convivial surroundings of a candlelit room, warmed by a blazing open fire, chatting over a pint or two of real ale.

In no time at all it was closing time and we said our goodbyes. What a pleasant way to end a most entertaining and enlightening evening.

Chris Jowitt:

Monday 8th May, 1989: Lecture "The Morecambe Gas Field" by Dr. Alan Levison, Manager of Development Geology, British Gas.

Dr. Levison delivered a very informative lecture to a full house and illustrated it with colour slides.

The Morecambe Gas Field in the subsurface of the Irish Sea contains one of the

United Kingdom's most important gas fields. It is owned by British Gas and supplies approximately 10% of U.K's daily consumption. It is kept as a reserve supply for the high demand winter months.

Gas production started on 1st January, 1985 and it is estimated that there is 186 billion cubic metres (6.68 trillion standard cubic feet) of which 146 billion cubic metres are recoverable.

The gas is trapped within the fluvial deposits of the Lower Triassic Sherwood Sandstone Formation which are thought to have been deposited on land in semi-desert conditions. The porosity (volume of pores which may hold gas) and permeability (the ability to allow the through flow of gas) of the Sherwood Sandstone has been affected by diagenesis (physical and chemical changes) since deposition. Below the hydrocarbon/water contact mineralisation in the form of illite clay occurred and this greatly reduces the permeability of the sandstone. It is therefore uneconomic to drill wells in sandstone impregnated with illite.

The source of the gas is the underlying Coal Measures which during the Jurassic period were buried to a sufficient depth to cause the temperature rise necessary for the gas to be released from the coal beds. The gas migrated into the sandstone reservoir and was prevented from escaping by a capping layer of Mercia Mudstone.

As long as the Morecambe Gas Field is used solely as a seasonal supply facility, its reserves will probably last for forty years.

30th April, 1989: Field Meeting to Grinshill and "Murchison's Dykes". Leader Dr. David Thompson of Keele University:

The field trip entailed an examination of the environs of Grinshill in North Shropshire. The village is situated on Triassic rocks in the Shropshire-Cheshire Basin, and has a quarrying history dating from perhaps the 12th century. Our leader possessed a remarkable knowledge of the local history in addition to the geology.

First stop was Acton Reynald Hall, where, in 1834, Roderick Murchison described some "greenstone" dykes, having been alerted to their presence by architect John Carline. More recently, a geophysical survey conducted by Keele students has provided evidence for a swarm of NW-SE trending basic dykes. But no evidence was found for the WSW-ENE trending dyke described by Murchison, and required for his theory of repeated activity on the Breidden-Grinshill line.

Following a building stone tour of the

village, we visited a series of quarries in the red Wilmslow Sandstone. In the first exposure, all sedimentary structures had been removed, apparently by hydrothermal fluids rising up a fault plane. In the next quarry, however, large-scale cross-bedding suggested an aeolian origin. In the third quarry, we were introduced to the difficulties of stratigraphic terminology. Apparently, the red Wilmslow Sandstone becomes Helsby Sandstone where it is yellow.

However, the colour varies laterally and is unrelated to any genuine stratigraphic division.

After lunch at the "Elephant and Castle", we proceeded to admire the geological marvels of Mr. O'Hare's garden wall. The friendly Mr. O'Hare then beckoned the party to view his rockery, the attraction being a slab of Tarporley Siltstone bearing footprints. We were told these were of the reptile Rhynchosaurus, whose bones have been turning up in the area for over a century.

The track leading to Mr. O'Hare's quarry gave an exposure of the thin, disturbed "Esk Bed", interpreted as the residue of a solution-collapsed evaporite layer. The quarry itself revealed the following sequence:-

Mercian Mudstone ("Keuper Marl")  
Tarporley Siltstone ("Waterstones")  
Helsby Sandstone ("Upper Mottled Sandstone")

The north quarry face revealed a number of laterally branching dolerite dykes. These are dated as  $50 \pm 13$  Ma (Eocene), and have been affected by subsequent faulting and mineralisation.

The Tarporley Siltstone was found to contain abundant sedimentary structures. Ripples both symmetric and asymmetric, straight and linguoid, were seen, as were current lineations and adhesion surfaces; while mudcracks and rain pits were commonplace. Shallow lake or intertidal environments were suggested.

Returning to the village, we marvelled at the scale of past quarrying operations, then thanked Dr. Thompson for an unusual and interesting excursion.

Nigel Bradley:

From British Geological Survey, Keyworth, Nottingham (West): "Black Country" applied Geological Mapping Project:

The basic geological maps of the "Black Country" need to be updated. In addition information on ground conditions and mineral resources is needed for planning of development and re-development. The British Geological Survey and the Department of the Environment are jointly funding, therefore, a revision geological survey of part of the area (Fig.1). The scientific results will be presented at 1:10,000-scale maps each of which will be accompanied by a descriptive report. The applied geological results, including consideration of made ground, mineral resources, past surface and underground mineral workings, hydrogeology, camber and landslides, and engineering characteristics will be presented on thematic geological maps and described in a report aimed specifically at land-use planners and developers.

All appropriate data collected in the course of the work will be collated and stored in a computer data base to ensure that it is available as a permanent reference source. New field mapping is being carried out currently in the south and east of the area, outside the exposed coalfield; the coalfield sheets will be revised primarily as a desk study with limited field surveys.

The applied mapping initiative also depends on access to pre-existing published and unpublished data including, for example, records of temporary exposures, site investigation reports and old mine plans. Members of the Black Country Geological Society, with their extensive local knowledge and contacts, are a valuable source of such information and the British Geological Survey and the Department of the Environment would be grateful for any information which can be contributed. Data can be held "in confidence" if necessary.

The computer data base will also be used for experimental production of computer-generated geological maps of part of the study area. Application of such techniques will, in future, allow rapid revision and updating of records and maps.

Further information about the project can be obtained from Dr. John Powell, British Geological Survey, Keyworth, Nottingham, NG12 5GG; Tel: 06077 6111. Dr. Powell will be pleased to receive any contributed data or notification of where significant collections or information are held.

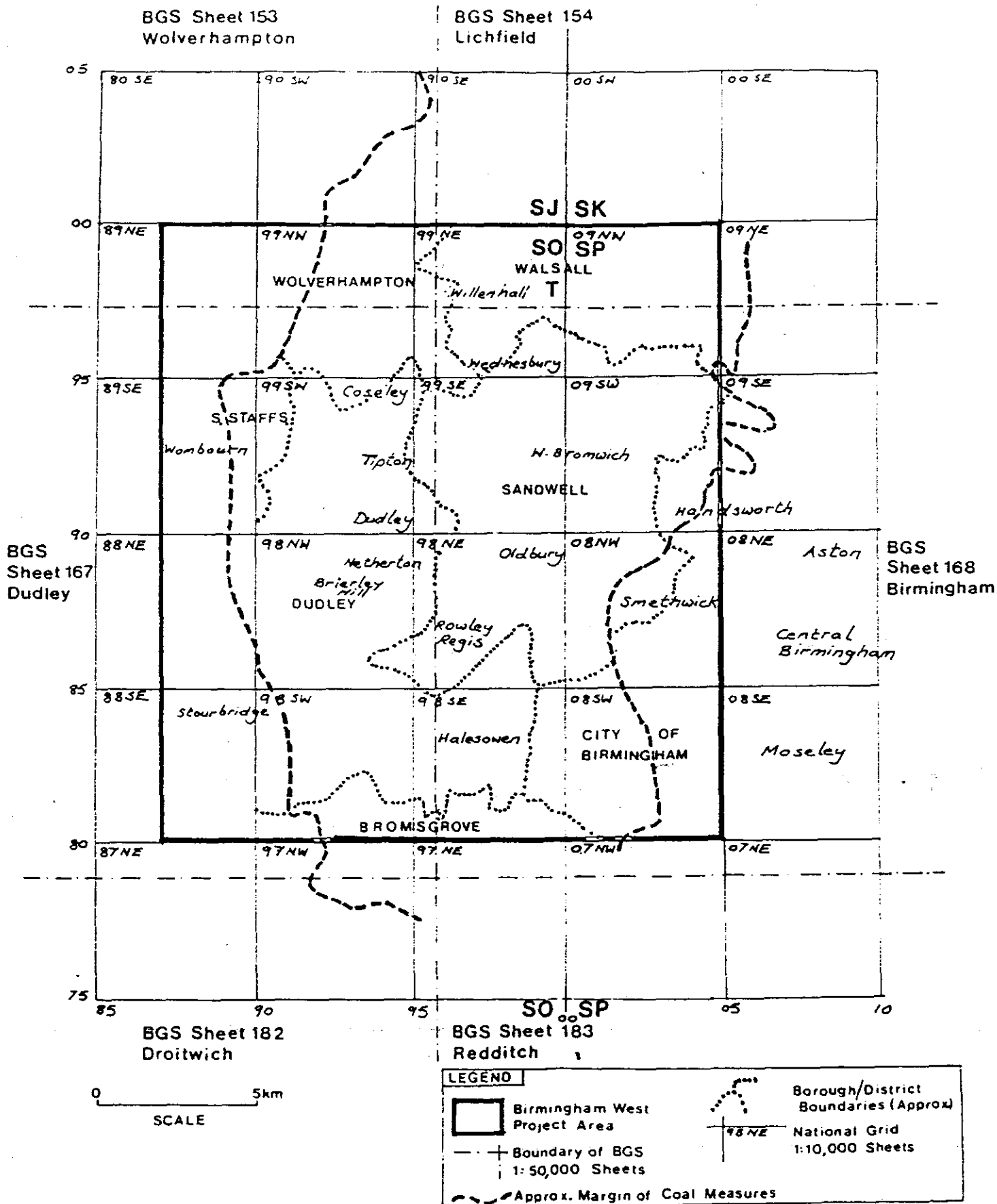


FIGURE 1. SKETCH MAP SHOWING THE AREA OF THE BIRMINGHAM (WEST) APPLIED GEOLOGICAL MAPPING PROJECT.

B.C.G.S. News:

From the Papers:

Study Tours:

University of Durham:

- 1989/2 Geology of Mallorca. 1 week.  
1990/1 Geology and Flora of Tenerife.  
1 week (mid-Feb., 1990).  
1990/2 Botany, Geology and Landscape  
of Mallorca (late March, 1990).  
1990/3 South East Spain (Culture,  
Language, Geology, Botany,  
Landscape). 10 days. (April 1990).  
1990/4 Geology of Rhum (26th May-2nd June,  
1990).  
1990/5 The Dolomites (Botany and  
Geology). 2 weeks (July/Aug.,  
1990)  
(Postponed from Summer, 1989).

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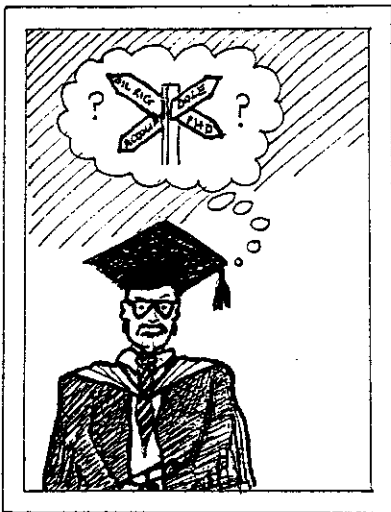
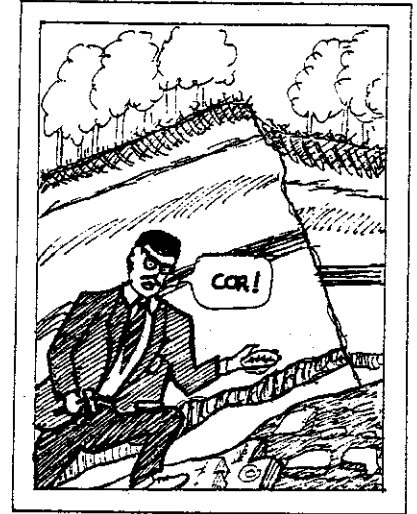
The Urban Diary of a 20th Century  
Black Country Geologist

The Environmental Geologist  
A Peculiar Practice?

Part 1: A Personal View

How well I remember childhood's fascination with the big world around me. Its colours and life, the black velvet night sky and the magnetism it held for me. And then, the thrill of my first fossil find in Doultons Clay pit, Saltwells, Netherton. Little did I know then, that I was treading my first steps on what was to be a long and winding road of discovery, with a surprise round every corner.

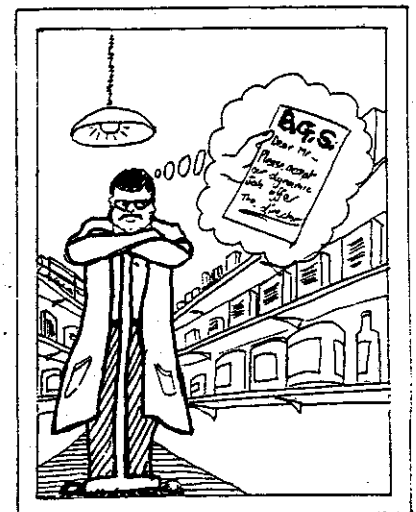
The Geological bug bit me and I never recovered!



Not so long ago I was a wide-eyed youth going into university thirsty for knowledge about exploding volcano's, moving continents and long-dead beasties big and small. I was oblivious to careers advice that factory work, banking or accounting were much more sensible routes to follow, and comments like "You'll never get a job in geology you'll see!" Three years later academia gave birth to another young geologist with a degree, and a dilemma!.....How do you go about turning gurgling enthusiasm for rocks into making a living?

I guess I've always been a bit of a dreamer, imagining an exciting career, but prospects at that time looked a little bleak to me. The thought of sifting through mud slurries flushing from drilling pipes in some howling gale in the north sea or wandering the blazing Arabian desert with some electronic box of tricks just didn't appeal somehow, so, I decided to earn an honest living stocking shelves in a local D.I.Y shop in the hope that something more inspiring might pop-up. During my time at the D.I.Y shop I experienced many things but perhaps one of the most important lessons I learned there was the value of people.

Well, fortune smiled on me that year, and an opportunity materialised which even my fussy tastes could not pass by. I became a research officer in a temporary contract with a local environmental consultancy as they required a geologist for a project. I had finally got my geological foot in the door, .....



..... but I must admit to more than a twinge of sadness when I left behind my new "D.I.Y friends" for whom similar opportunities would probably never exist.

Time flew by and the temporary contract was made permanent as the need for geological knowledge in pollution control and waste disposal projects became apparent.

In the few years that I spent with the consultancy I realised the "real value" of my geological training in its all-embracing subject coverage and practical approaches to problem solving. I also realised that the environmental field is ideal for applying geological know-how and that it is an option that is seemingly unknown or ignored by careers advisors in education.

So would-be geologists take heart! there are other options for which your talents will be amiably suited. The environment might be worthy of your consideration if you, like I, could not be settled accounting, selling surgical appliances or on an oil-rig somewhere in the north sea.

I now reside in a local, hectic Geotechnical consultancy for my sins and the use of geological concepts and techniques for the protection of the environment is my bread and butter. It seems that the world has woken up to "the Environment" just as I did a few years ago.



And maybe "Environmental Geology" will soon be a recognised subject in its own right? Perhaps environmental geologists will begin to appear? Who knows? Well, we'll discuss that next time, till then, keep smiling.