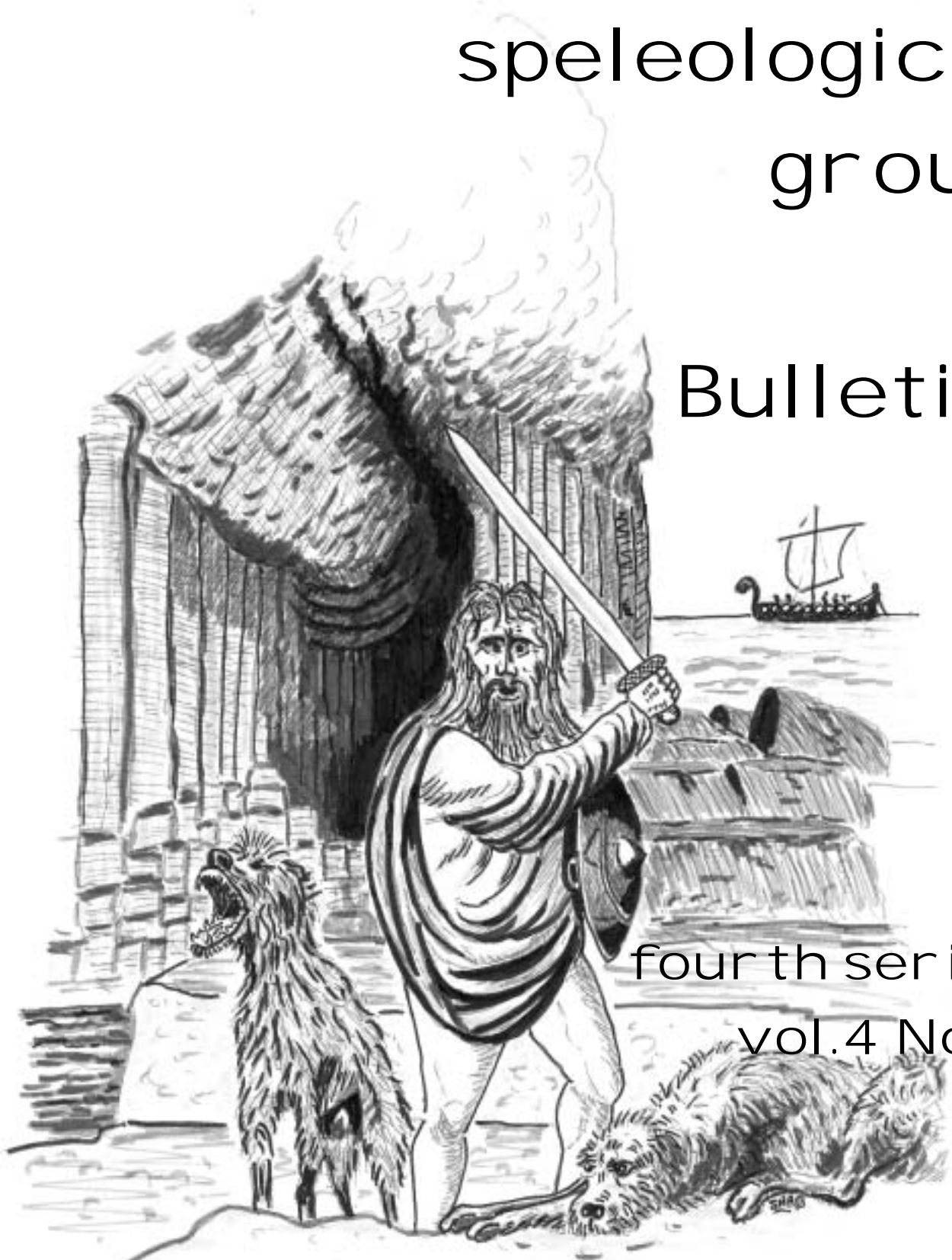


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the grampian
speleological
group

Bulletin



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The Grampian Speleological Group

Editorial:

Forty Years On

Yet another New Year and the GSG seems to go from strength to strength, despite more than a fair share of tragedy behind us. It does no harm though to indulge in some retrospective musing so perhaps harking back to 1969 would be as good a theme as any. This was the year 'Descent' was born, when men walked on the moon and the Grampian entertained the masses with an hour-long documentary on Cuil Dubh, broadcast on BBC Radio 4. If we can make 2009 as productive and successful, then I expect great things of the coming months.

So what did we achieve in the way of exploration during 1969? It started in February during a joint dig with the British Speleological Association at the base of the second pitch in Jingling Pot, Kingsdale. Forcing a way down to the ultimate point already reached by ULSA, Ian Plant and Eric Glen put in some heavy sledge hammer work on a stubborn boulder until both hammers broke. While exiting the pot, Eric trapezed across to reach for the first time and explore the now quite popular alternative route with a full descent being realised the following weekend. In March, club divers attempted various sumps in Douk Gill Rising and assisted at a fatal accident rescue from Meregill Hole.

April witnessed Roger Biddle and myself clocking up a batch of excellent sea caves around Whiten Head near Durness, including the majestic Uamh Freisgill, and also the opening of a campaign to crack Cuil Dubh Sink. A lot of digging effort led to a chamber blocked by a narrow exit. There were diving attempts on sump 1 in Claonaite and Landslip Chamber pool, and the same weekend saw the discovery of Allt a'Chalda Mor Stream Cave.

During May the club mounted a concerted campaign on Fast Castle sea caves, Berwickshire and in June came the BBC broadcast, with much blasting, diving and singing! Pool Cave was explored nearby and Cnoc Gorm Sink located. My finding of the notoriously invisible Blar nam Fiadhag Pot above Stroncrubie took place in July and on Schiehallion we had a field day, exploring Foss caves 5-1 plus rising in one orgiastic afternoon.

Divers went to the Isle of May in the Forth Estuary in August to check out sea caves there (incidentally this is work which requires to be followed up) and we pioneered a pre-SRT abseiling descent of Diccan Pot (a pull through, out via Alum on ladders).

In October we found two small new caves in a river bank at Garrigill, near Alston, and the following month mappoled our way to the foot of Great Aven in Marble Steps Pot, regrettably running out of equipment there. (This was rectified some years later when we reached the top to explore some small, blocked crawls). Top Sink and associated drainage caves at Foss were also discovered.

Thirty six trips down Yorkshire pots were logged, embracing such classics as Rowten Pot, Magnetometer Pot, Flood Entrance, Lost Johns, Disappointment Pot, Simpsons Pot and Meregill. Several visits to Mendip, Derbyshire, North and South Wales were recorded, with a lot of activity in Scotland, from Orkneys to Leadhills. Halcyon days and not a single rope in sight! (except lifelines).

Of course, there was significantly less emphasis on Sutherland in 1969 so that analysis of relevant logbooks reveals there were 124 logged trips in 1969, compared to 143 in 2008 (Edinburgh and email reports only). Rana Hole/Claonaite obviously bulks out this figure, but in 1969 there was more variety in - for want of a better term - 'campaigns' devoted to caves in lesser regions. As a recommendation for the coming year, could I suggest that return visits to well known caves be carried out with some thoroughness in order that they may be published in this journal. Up-to-date information for researchers including non-cavers can only be a good thing, and increasing our base knowledge of all underground features in Scotland is an essential function of the club. The short features on Archerfield Cave in East Lothian and McGregor's Cave, Perthshire are exam-

ples of what I mean.

Finally, I welcome Snab's agreeing to supply covers for this new volume of the Bulletin (not least because it saves me having to rack my brains for a themed series!). Readers will, I'm sure, enjoy his personal take on famous Scottish characters associated with caves.

- Alan L. Jeffreys, Editor

-----oOo-----

Cover Illustration:

Fionn mac Cumhaill (Finn mac Cool) had supernatural powers and was leader of the Fianna. With his two great dogs, Bran and Sceolang, and his mighty sword, Mac a' Luin, he killed many a sea serpent, two giants and galley loads of the invading Vikings whom he successfully saw off. Based on Staffa, which was connected to the Giant's Causeway in Ireland, he made the cave his home and his speleological connections remain to this day because it is said that he and his men lie sleeping in an underground cavern, waiting for the day when he is needed to rescue Scotland once more. His son, Ossian, also had a cave in Glencoe. The Fiann's sea cave or, in Gaelic, Fianna Uamh Cuan, became their battle cry followed by an "Ach!" of disgust. In time this was shortened to the initial letters although Ach remained. This feared war cry has been mistakenly attributed to the Anglo Saxons and a corrupt form of it is heard to this day!

Peter 'Snab' MacNab

MEET REPORTS (to 3.3.09) (Edinburgh logs only):

This summary contains a wide variety of local Scottish trips carried out over the winter, despite weather conditions. Following an initial burst of activity in Claonaite 7, things have quietened down a little in Sutherland, with attention being paid to sorting out the drainage at the foot of Rana, and some exploratory work in the Concretehead area.

ARGYLL

Our programme of installing P-hangers continued in October with a rigging system placed in Long Drop Cave. During the day there were also visits to Broken Expectations and Claig-ionn. The same month there was a re-visit to some fissures near Carrick Burn, Lochgoilhead.

In January, there was a brief visual survey of sandstone cliffs north-east of Oban. Five or six caves were noted, two blocked off with brick walls.

AYRSHIRE

Some 23 sea caves and rock shelters along the Clyde coast near Gourock were examined by John Crae in January, but only three or four have any potential. They are in sandstone.

Arising out of a request from a Falkirk scout troop, in February Goon took two leaders on a tour of Cleaves Cove near Dalry. At the end of the month there was another trip, when an opportunity was taken to clean the cave (see this issue).

BERWICKSHIRE

There was an SCRO call-out to Earlston in December when four members checked out a series of stream culverts for a missing man (negative, incidentally).

In February, Alex Latta examined some sea caves and artificial tunnels near Pettico Wick.

CLACKMANNANSHIRE

Jim Salvona conducted a couple of trips to the Vicars Bridge Ironstone Mine in November, and attempted a dig at the main site without much success.

EAST LOTHIAN

Some sea caves at Torness Point were looked at in February.

FIFE

In early March, Jim Salvona visited a sea cave near the Chain Walk at Elie and a few days later A. Jeffreys carried out a solo examination of Seafield Cave, Kinghorn.

INVERNESS-SHIRE

In December a trip into High Pasture Cave resulted in a tight crawl opening into a small, well decorated chamber.

LANARKSHIRE

Midweek in February, Grips Level at Leadhills was entered and a week later another level at Wanlockhead was visited.

MIDLOTHIAN

A couple of investigations were carried out by Alex Latta in Middleton Limestone Mine near Edinburgh in October, and in January he looked at the Roslin Mill Lades and the enigmatic Monk's Cave near Newbattle.

PEEBLESSHIRE

On a dark evening in February, ten people turned out for a mass visit to Jeanie Barrie's Cave. Various members balked at some of the obstacles and only Ross Davidson reached the absolute end of the cave.

PERTHSHIRE

A hole called McGregor's Cave, marked on OS maps, was investigated in October. Although classed as a 'cave' it is really a walled up overhang (see this issue).

In November, Richard Simpson and David Morrison drove down from Skye to explore the new Trinafour caves and contrived to make more extensions (see this issue). More digging was carried out in Trinafour Rising terminal choke in December, and followed up with another trip in early January. The choke is now penetrable for some 3.5 metres but still requires work. In February there was a trip into the Glenfarg Railway Tunnels.

RENFREWSHIRE

Scouting for a rescue practice site, four members took a look at Coalbog Limestone Mine near Bridge of Weir. Unfortunately, recent collapses have rendered these workings too dangerous and the trip was aborted.

RUSSIA

During an expedition to Lake Baikal in August, Anna Ermakova met with members of Irkutsk Speleological Group for a trip down the newly discovered Okhotmichja Cave - 5.5 kms to date and beautiful formations.

SOMERSET

Ross Davidson joined a party for a gruelling descent of Morton's Pot in Eastwater Swallet in November which he found a real challenge.

SOUTH WALES

Peter and Ianan Dennis paid a visit to the Black Mountain in December and went through Ogof Pasg. Unfortunately, recent rain meant the link to Ogof Foel Fawr was sumped.

STIRLINGSHIRE

As part of the task identifying possible sites for a cave rescue practice with Strathclyde Police MR team, in October A. Jeffreys examined the site of Queenzieburn Limestone Mine which had provided some good sport in the 1960s. A thorough investigation of the banks of the small stream where it was situated failed to reveal any sign of an entrance and the current farmer living 200 yards downstream had no knowledge. Another site written off?!

SUTHERLAND

At the beginning of October there were a couple of trips down Rana Hole into Claonaite and a practice rescue out of Glenbain Hole, followed by a tour of Cnoc nan Uamh.

The next weekend two members escorted 18 members of the local archaeological group round Reindeer Cave.

At the end of the month there was an examination of Cuil Dubh plateau and continued digging at the bottom of Rana, attempting to drain off ponding water. Trips down to GNTM were achieved despite wet conditions and in Allt nan Uamh Stream Cave there was a survey party into Upholes Passage, and a separate tourist trip.

November saw a descent of Rana Hole frustrated by sumping, so the party diverted to A.N.U.S. Cave and Cnoc nan Uamh instead. This sumping continued into December, resulting in digging at Campbell's Cave and another tour of A.N.U.S. Cave. In the latter some clearance was achieved in the Sphincter which should make things easier.

The usual suspects were in Elphin for New Year when more digging was undertaken in Rana and Tony Jarratt's ashes were sprinkled into sump 7, thus ensuring he will be the first to traverse a through trip to the Fhuarain! On New Year's Day Malcolm McConville soloed round to woods on the east side of Druim na Doire Duibh overlooking Loch Urigill where he found an enticing open shaft. Rushing back to the hut for a ladder he returned with Duncan Butler (BEC) but in the gathering dusk could not re-locate the entrance.

On 12th January, A. Jeffreys travelled north to look for this shaft but also failed. There are a large number of big shakeholes in distinct lines on this hillside and while the geology promises little, a few small caves almost certainly await discovery here.

At the end of January there was another determined attack on Rana, with trenching extending into the Skyway. Julian Walford installed a 32mm water pipe and set up a siphon to generate a workable air space in wet conditions. Meanwhile Derek Pettiglio and Martin Hayes busied themselves above sump 6b in Derek's

new discovery (see this issue).

During February, the trenching into Skyeway continued, but very wet conditions curtailed this work so efforts were diverted to Campbell's Cave. For variety, there was also a trip down 'old' Claonaite as far as the duck.

USA

During a holiday in December and January at El Malpais National Park, New Mexico, Rebecca and Greg Carter located and explored Junction Cave, a lava tube, and later in Carrizozo Malpais they discovered another group but since most of them required flat out crawling, these were not seriously entered.

WEST LOTHIAN

Another SCRO call-out in January - to Whitburn - saw three members checking several wet culverts, again with no success. In February there was a short trip into Bowden Hill Mine to re-open Hole 4a from the inside.

YORKSHIRE

The winter season in the Dales kicked off in October when an intended rigging practice in Yordas Cave was abandoned due to high water.

In November, five members descended Lancaster Hole to take some photographs of Fall Pot for Goon and another party finally had some rigging training at Yordas Pot. Also in November, a four strong team tackled Bull Pot but, as seems traditional for this club in this cave, a mix-up with ropes meant no-one reached the bottom.

January saw two separate descents of Tatham Wife Hole. In all, twelve people went into the pot, the second trip being memorable in that Goon was just about the only person older than some of the ladders used! Also in January, in concert with EUG, there were tourist trips down Bull Pot of the Witches and Notts II.

SUBTERRANEANS

Here in the depth of the mountain
we follow the cave's secret way
Obstacles weed out the casuals,
only the stout hearted stay.

But it's not all heroic struggle
nor is it all tight crawls and mud.
There are impressive underground landscapes
to rouse up adventurous blood.

Narrow canyons with wild rushing
torrents, offer a challenge to us.
Where bruises and ripped open garments
prompt but a half hearted cuss.

There are sights to awe and enthrall us,
formations, mystifying or great,
and the facing of hardship and danger
with a proven and well trusted mate.

Over an edge into ultimate darkness
with headlamp showing the way.
Testing our wits and endurance
before seeing again, light of day.

Then with luck, one time, perhaps
among many, comes the ultimate scene.
When digging or, by chance, moving boulders
gives access where no one has been.

This is the magical moment.
This all exertion discounts.
On the brink of the totally unknown
While anticipation rapidly mounts.

Jim Salvona

ADDITIONS TO THE LIBRARY (to:3.3.09)

1. BOOKS

- Ryder, P. (2008) *Memoirs of a Moldywarp*
 Craig, S. (1911) *Secrets of the Hills (Childrens' Book)*
 Hall, G.W. [Ed] (2000) *Mines of the Sixties. Extracts from the Mining Journal 1860-1864*
 Ford, T.D. (2008) *Castleton Caves*

2. SHEET SURVEYS

Approx. Scale

Box Freestone Mines, Northern Region 2cm = 50m

3. CAVING JOURNALS

- | | |
|---|--|
| Bradford Pothole Club, Bulletin | Vol.7 No.3 (2008) |
| British Cave Research Association, Transactions | Vol.2 No.1 (1975) |
| British Cave Research Association, 'Cave & Karst Science' | Vol.34 No.2 (2008) |
| British Cave Research Association, CREG Journal | No. 71 (2008) |
| British Caver | Vol. 13 (1945) |
| British Caving Association, Newsletter | No. 10 (2008) |
| British Speleological Association, 'Cave Science' | Nos. 9,10 |
| | Vol.3 Nos. 17,18,19 (1949-1052) |
| Cave Diving Group, Newsletter | Nos. 169,170 (2008-9) |
| Chelsea Speleological Society, Newsletter | Vol. 50 Nos.10,11,12 |
| | Vol. 51 Nos.1,2 (2008-9) |
| Craven Pothole Club, Record | Nos. 92,93 (2008-9) |
| Derbyshire Caving Association 'Derbyshire Caver' | No. 129 (2008) |
| Descent | Nos. 204,205,206 (2008-9) |
| Die Hohle | Vol. 59 Nos.1-4 (2008) |
| Federation Francaise de Speleologie, 'Spelunca' | Nos. 7,35,50-61,65 (1977-1997) |
| Federation Francaise de Speleologie, Librairie Catalogue | No.20 (1997) |
| ISSA Journal | No.2 (2006) |
| Moldywarps Speleo Group, Journal | No.12 (2008) |
| Mondo Sotterraneo | Year 31 No.1-2 ((2007) |
| Mountain Rescue (England & Wales) | Issues 26,27 (2008-9) |
| National Speleological Society of the USA, News | Vol. 65 Nos.10,11,12 |
| | Vol. 66 Nos.1,2,3,4,5,6,7,8,9 (2007-8) |
| Red Rose Cave & Pothole Club, Newsletter | Vol. 45 No.4 |
| | Vol. 46 No.1 (2008-9) |
| Shropshire Mining Club, Journal | Nos. 8,9 (2003-4) |
| Somerset Mines Research Group, Study | Vol.1 No.4 (1982) |
| Speleologia (Italian Speleo. Society) | Year 29 No. 59 (2008) |
| Subterranea Britannica, 'Subterranea' | No. 18 (2009) |
| Sydney Speleological Society, Journal | Vol. 52 Nos.9,10,11,12 |
| | Vol. 53 Nos.1,2 (2008-9) |
| Technical Speleological Group, Journal | No.12 (1986) |
| Verband der deutschen Hohlen-und Karstforscher e.V.
Munchen: 'Karst und Hohle' | 2004/2005 |
| Wessex Cave Club, Journal | Nos. 313, 314 (2008) |
| Wessex Cave Club, Journal Index Vol. 29 Nos. 303-312 | (2008) |

4. MAPS

OS 1" to 1 Mile

Sheet 27 Strathpeffer (1957)
Sheet 30 Banff (1959)
Sheet 43 Stonehaven (1958)
Sheet 73 New Galloway (1955)
Sheet 79 Stranraer (1955)
Sheet 80 Kirkcudbright (1963)
Sheet 116 Dolgelly (1953)
Sheet 136 Bury St. Edmonds (1954)
Sheet 138 Fishguard (1952)
Sheet 139 Cardigan (1952)
Sheet 140 Llandovery (1952)
Sheet 148 Saffron Walden (1954)
Sheet 149 Colchester (1956)
Sheet 151 Pembroke (1952)
Sheet 152 Carmarthen and Tenby (1952)
Sheet 161 London N.E. (1958)

OS 1:50,000

Sheet 63 Firth of Clyde (2007)

OS Quarter Inch: Sheet 1 The Borders (1946)

OS 1:25,000 Sheet 52/61 Pleshey (Chelmsford)

North Devon (1909)

Glen Shiel and Glen Garry. Sheet 41 1927)

OS Road maps 1"-1 mile: Newcastle Upon Tyne

Bridgwater

Snowdon and District

Bartholomew's Half Inch Maps:

Sheet 2 The Solway

Sheet 3 Cumberland

Sheet 4 Teesdale (2 copies)

Sheet 5 North Lancashire

Sheet 16 Essex

Sheet 32 Sussex

Cape Wrath

2 miles to 1" Sheet 6 Harrogate

4 miles to 1" Keswick and Ullswater

Gall & Inglis half inch map: sheet 58 Newcastle Section

Sifton Praed & Co. 1"-1 mile Sheet 98 Braintree

5. CAVE GUIDES, ABSTRACTS ETC.

Speleological Abstracts No.28 [for 1989] (1989)

Abstract: Mine Hopes Sunk, But Records Live On. H. Townley. Earth Heritage No. 29 (2008) p.9.

No. 1149

Welcome to Jenolan Caves, Australia

Karst Information Portal. Univ. South Florida (2007)

Lava Tube Show Caves, Jeju Island, Korea

Ultimate Borneo Rainforest Experience

Immerse Yourself in Mulu

Tantanoola Caves Conservation Park, S. Australia

Capricorn Caverns, Queensland, Australia

Blue Mountains Explorer Bus and Jenolan Caverns

The Wonder of the Underworld of Wombeyan Caves

Abercrombie Caves, Australia

Jenolan: Adventure Happens Here. Australia

Naracoorte Caves, S. Australia

Te Anau Glowworm Caves, New Zealand

Underworld Adventures, South Island, New Zealand

Abstract: Mesolithic Engravings at Cheddar Gorge. G. Mullan. *Current Archaeology* Issue 199 (2005) pp 360-1. No. 1150

Abstract: Fire in the Karst. New South Wales National Parks and Wildlife Service.(2003) 2pp. No. 1151

13th International Symposium on Vulcanospeleology. Jeju Island Cave Research Institute, Korea.(2008)

Field Guidebook. No. 1152

13th International Symposium on Vulcanospeleology. Jeju Island Cave Research Institute, Korea (2008)

Proceedings. No. 1153

Walters, J. [Ed] (2008) *The Nature of Scotland*. S.N.H. Magazine No.2 No. 1154

Abstract: Paviland Cave and the 'Red Lady', New Research. S. Aldhouse-Green (1996) *in Art, Ritual and Death in Prehistory*. National Museum of Wales, pp 6-7. No. 1155

British Nylon Spinners Caving Club History. M. Davies (c. 1990) Collection of MS Documents. No. 1156

Abstract: Treasures of Dales Mining. D. Joy. *Dalesman Magazine* Vol. 30 No.7 (1968)pp 539-543 No. 1157

Abstract: Treasures of the Underworld. Photos by A. McKenzie.*Dalesman Magazine* Vol. 30 No.11 (1969) p. 892. No. 1158

Abstract: Gaping Gill's Lost River. G.R. Phillips. *Dalesman Magazine* Vol. 33 No.9 (1971) pp 697-700. No. 1159

Abstract: Potholing 50 Years Ago. J. Bradley. *Dalesman Magazine* Vol. 36 No.7 (1974) pp 548-550. No. 1160

Abstract: Life at Whernside Manor. 'W' *Dalesman Magazine* Vol. 36 No.8 (1974) pp 623-625. No. 1161

Abstract: A Walk Up Gunnerside Gill. M. Cheery. *Dalesman Magazine* Vol. 37 no.10 (1976) pp 776-780. No. 1162

Abstract: Journey Into Our Underworld (Cheshire Salt Mines) R. Girling. *Sunday Times Magazine* for 25.1.09 pp 40-45. No. 1163

6.DVDs, VIDEOS ETC

CD: Last Word: Obit. of Jim Eyres. BBC Radio 4, 17.10.08

DVD No. 30: Alan Jeffreys' Talk at Hidden Earth (2005)

35: Sutherland - The Empty Land. Cameron McNeish BBC2. (2009)

TAIGH NAM FAMH - THE GSG's Field Centre in Sutherland.

Situated at Elphin on the A 836 north of Ullapool and well placed for all Sutherland's caving areas, the spacious Taigh nam Famh (House of Moles) is available for hire by non-members at £5 per head per night. Fitted with full cooking, washing and sleeping facilities, and boasting the best view of any caving hut in Britain, visitors should contact the Hut Warden, Peter Dowswell at peter.dowswell@btinternet.com.

There is accommodation for 20 in the bunk rooms, but visitors cannot book the hut in its entirety, to allow members access at all times.

ANOTHER SMALL CAVE IN EGYPT

By Alan L. Jeffreys

During an epic oasis bash in Egypt's Western Desert in November 2008, I managed to get underground into natural holes a number of times, but the best example was visited on 16th November west of Farafra Oasis.

We set off along rough desert tracks in 4-wheel drive vehicles aiming for Ain Dala Oasis, near the last known sighting of Persian Emperor Cambyses' doomed army, but en route we pulled over to visit a hilly region, dominated by a dazzling cliff face of pure Eocene limestone.

A steep soft sand ascent, quite punishing in the desert heat, led us to the obvious entrance quite high above the wadi floor. It looked great, being of comfortable walk-in size and I eagerly plunged forward, to find a roomy chamber with a 1.5m ledge on the left leading, after an easy scramble, into a larger void, both of them exhibiting phreatic, or at least solutional, features. I ascended to the back of the cave but regrettably it extended no more than eight metres. The roof was consistently about four metres above the floor and average width was six metres.



The Approach to Wadi al-Ubayyid Cave. The sandy hill is actually much steeper than it looks!

Photo: A. Jeffreys

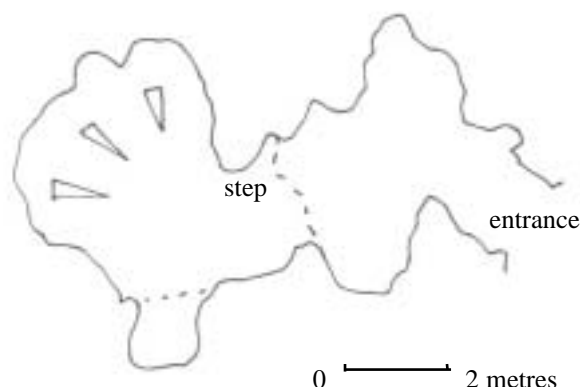
For all its brevity, it was the best genuine cave I saw in Egypt during a month's visit. We were told it was called Ain Dala Cave, map. ref. N. 27° 23.713', E. 27° 45.614', but the Ain Dala Oasis is a considerable distance away; its true name is Wadi al-Ubayyid Cave. There are plentiful graffiti on the walls, some ancient and others writ by Arab Kilroys. I took a brief trot around the base of the cliff but found no further entrances which I thought rather strange. As to mode of formation, I suppose it is not impossible the cave was hollowed out by wind-blown sand erosion along a line of weakness. I have no further ideas.



Looking Out of Wadi al-Ubayyid Cave. (The floor is soft sand, not scalloping)

Photo: A. Jeffreys

WADI AL-UBAYYID CAVE
West of Farafra Oasis, Egypt
Co-ordinates N. 27° 23.713', E. 27° 45.614'



Survey BCRA Grade 1, November 2008 A. Jeffreys

CAVING REPORT FROM KYLE

By David Morrison

This was going to be a short report about a couple of changes to the Trinafour caves but, over time has grown into a collection of reports from various other areas. What follows is based on entries from my log books, with some bits added for completion and embellishment.

16.11.08 Trinafour

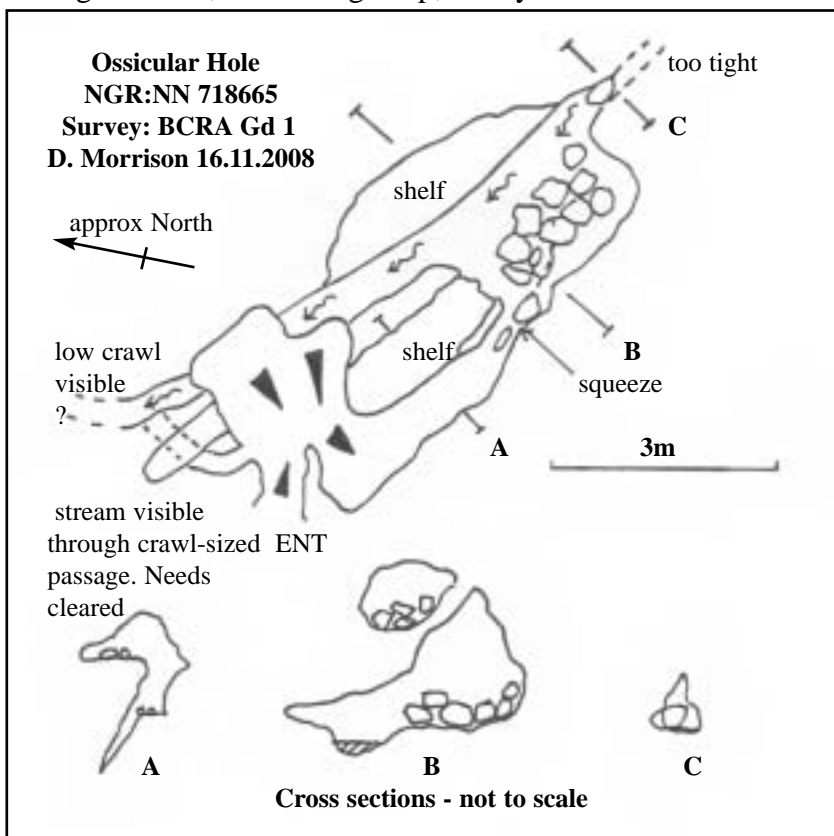
Ritchie and I took a look at the new caves at Trinafour. At Trinafour Upper Cave I squeezed in the lower entrance and crawled out the upper entrance to give a low, wet through trip; lovely!

In Trinafour Lower Cave the chocked oxbow was hammered clear and an easy squeeze now gives dry access to the main stream passage, avoiding the flat out wet crawl.

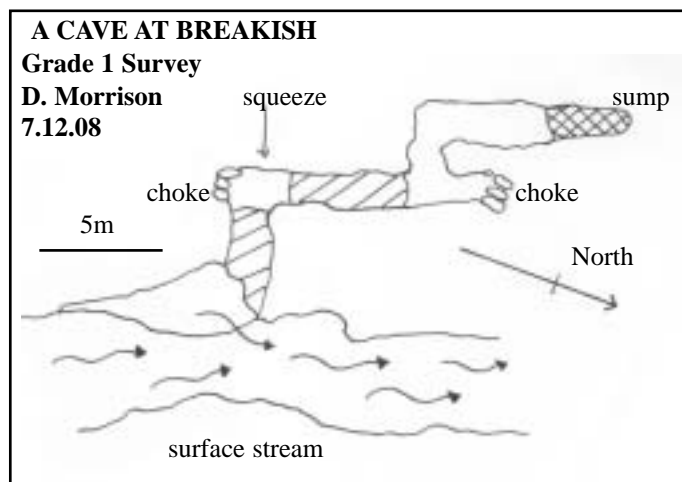
Ossicular Hole has been extended by several metres, reaching the stream via a tight squeeze between boulders. This was dug and chipped until eventually I managed to force my way through. I didn't push downstream due to the fact I just wanted to get back through that bloody squeeze! A look about just inside the entrance found a good sized hole that looked to lead to the same stream as that beyond the squeeze. Removal of the sheep remains would probably give easier access to the stream.

Trinafour Rising was also explored and the way on seems to be diggable. This area needs a good walk over.

(Editor's note: A good walk over has in fact been carried out, but upvalley from Ossicular Hole still requires examination.)



7.12.08 Breakish



I visited a knowledgeable local with interests in mountains, geology etc., to give him a tour of the Breakish caves. He lives in the lowest house beside the surface burn which feeds the caves. I had been in touch with Seonachan Macleod after receiving an email from Goon asking about a lost cave in Broadford. After some research, it seems the 'lost cave' is actually a lost souterrain.

On our way up the burn Seonachan pointed out a hole in the true left bank and told me that some years past a party of English cavers (presumably Moldywarps

SG -Ed.) had taken a look at it saying that it didn't go very far. I went for a look and found that after a duck

and a squeeze the passage led on for about 3-4 metres to a double bend and another 3-4 metres of sitting height passage ending in a sump. The total length is about 9 metres, with little prospect for more. The two main caves were then toured and some possible extensions looked at. The local name for the Breakish Bridge Cave is Uamh Maolaig (Monk's Cave), as apparently a monk used to live in it.

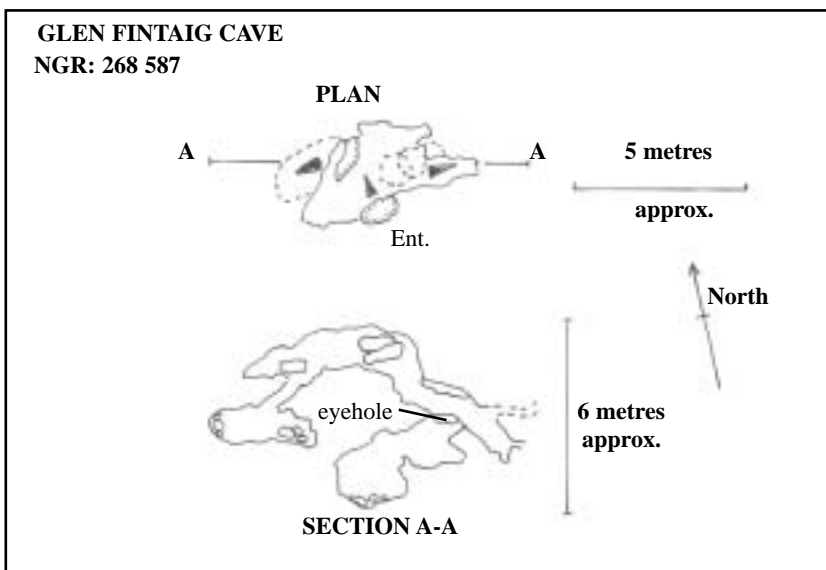
14.12.08 Glen Fintaig

I went to look at the cave marked on the O.S. map sheet 34, Fort Augustus: Glen Fintaig Cave: NGR: NN 268 887. This is a slip fissure cave formed in schist.

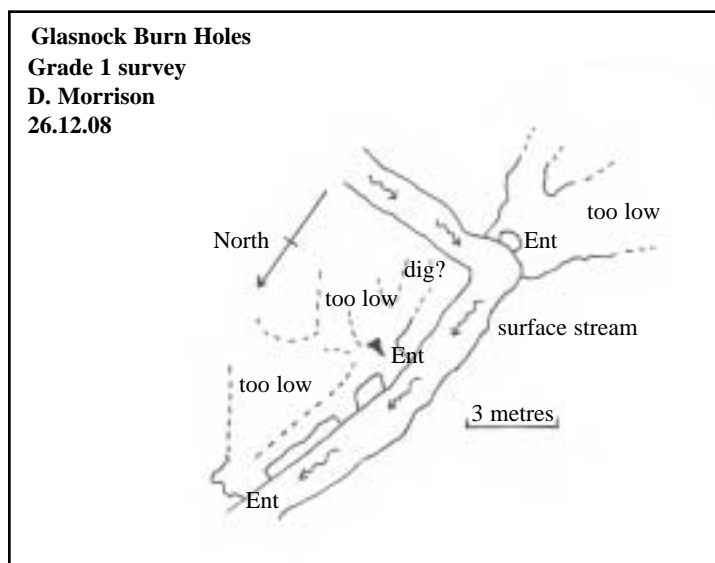
A 2 metre climb down into a good sized chamber about 1.5 - 2 metres in height with two ways on. Left drops down a slab to a much smaller bouldery chamber. Right goes 3-4 metres down steep passage with an eyehole about halfway. This

leads to another small bouldery chamber and a second chamber which was not entered but looked quite easy. The total depth must be at least 6 metres and the navigable passage about 10-15 metres. There are other holes hereabouts with various small chambers but nothing as big as the main cave.

Note: A 20 metre crag above the cave might give rock climbing.



26.12.08 Kishorn



of easy flat-out crawling, then it becomes too tight but is seen to continue uphill. The easterly cave has several sections which are crawlable (flat-out) for a few metres and some digging here may be worthwhile.

29.12.08 Applecross

Brindle's Rift was visited by myself, Ritchie, Toby Speight and three of his friends. Toby and I looked at the downstream choke and after I removed some very crumbly mudstone blocks we decided that digging here was unsafe. At the other end of the cave the two female members of the group had more success. Sarah White of Cambridge University Caving Club pushed

In Cave of the Kings more digging has been done in the small passage heading back roughly in the direction of the entrance. Ritchie and I are digging here occasionally and think another push might reach the bigger passage ahead. After a visit we took a wander over to the Glasnock burn and, following it downhill, found a section of stream with small caves on either side. The westerly cave is about 3-4 metres



Entrance, Cave in Glasnock Burn, Kishorn
Photo: D. Morrison

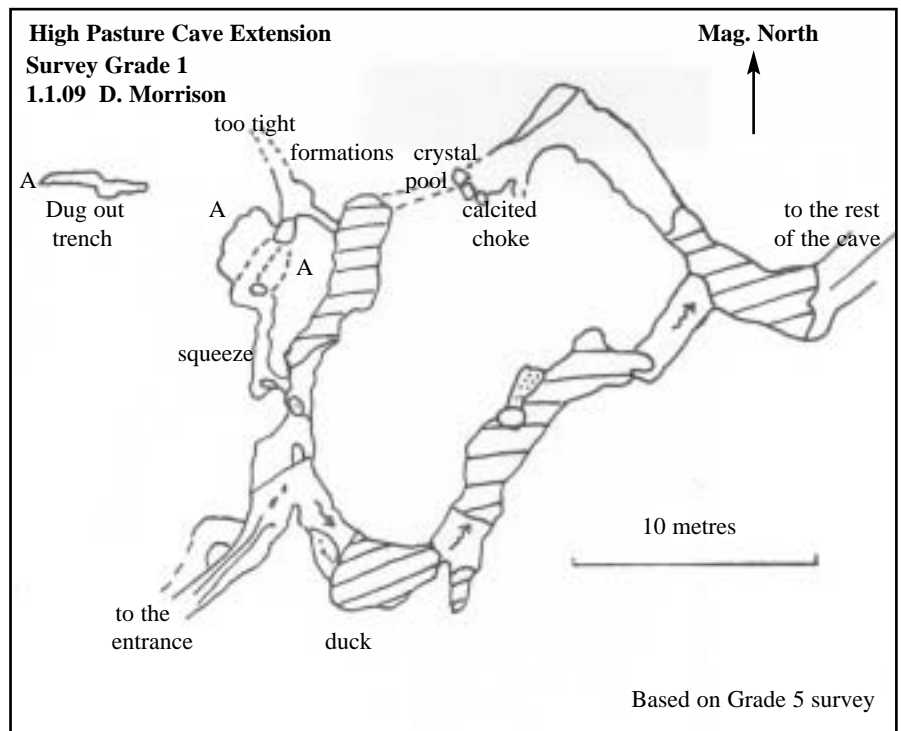
a tight passage for 3-4 metres to a large boulder blocking progress. If this is removed there might be more cave beyond.

Note: The above party minus myself (I was prospecting somewhere else) also toured Cave of the Liar and reported that the original entrance seems to have stabilised and is “passable with care”.

31.12.08 Skye

The entrance to High Pasture Pot 3 has been re-opened and a small tree felled with an ice axe has been wedged in the hole to stop any stupid sheep from pushing the tight downstream passage. A proper cap is needed here.

The small passage in High Pasture Cave that was found after the G.S.G. dinner in Skye (2007) has been dug out and hammered. It now leads to a small well decorated chamber with odd shaped formations and a crystal pool. The tight passage on the far side of the pool was not pushed as the chamber would be ruined. There is also a hole which connects with the far end of the fossil passage just before the choke.



The length of the extensions is about 9-10 metres including the unentered chamber.

25.1.09

Ritchie and I took a wander up the Allt nan Leac looking at various holes and caves. Letterbox Cave gives an entertaining trip and is bigger than it looks (honestly). I found plenty of room to turn around and suffered only minor cuts and bruises. Richie sensibly decided not to bother having a look!! He did however find a small pot in between False Willow sink and Slant Cave shakehole. It is about 2.5 metres deep with small passage continuing downhill. This looks too tight but may be diggable. Uphill from the pot there are two burns (one is the Slant Cave stream) both of which sink and rise after about 25-30 metres. They would need a lot of work to give any navigable passage.

There is a small cave, named Five Man Hollow, in the east end of the Slant Cave shakehole. It is not mentioned in Caves of Skye, I think Rob Burrell and his team named it. I have drawn surveys of the bigger finds and anyone visiting the area please feel free to have a dig.

NEW PUBLICATION:

A Guide to the Awe-Inspiring Raasay Fissures

By Jim Salvona. (2009) Published by the GSG

A5, 24 pp, with illus., diagrams and surveys.

This little guide describes all the main underground features, mainly deep mica schist fissures, to be found on Raasay, an off-shore island of Skye. As a bonus, it also includes six walks which may be enjoyed round the island. Costing £2.50 ex postage, all proceeds will be donated to the Scottish Cave Rescue Organisation.

Available from : A.Jeffreys, 8 Scone Gardens, Edinburgh EH8 7DQ

MELK AND MUCK

By Annie Audsley

Whilst on a recent visit to Austria, Roger Galloway, Alys Mendus and I got diverted from our main purpose of skiing by a couple of speleo-like experiences.

Part 1

We were invited by our friend Peter Ludwig to the Austrian cavers' piss-up, held annually in the Monastery of Melk. The host and organiser of this event was the caving monk, Father Jeremy, and he treated us to the cavers' tour of the monastery. Not knowing quite what to expect we followed Father Jeremy along polished stone corridors to a lift, from whence we emerged into a dusty attic full of old chairs and a couple of pianos. He led us through a series of attic rooms, on wooden walkways over the top of brick vaults, through holes in



the wall and up ancient wooden ladders and finally through a long attic to a round structure. Unlocking a low, iron door, Father Jeremy turned to us and said "Now I will show you our Church". We crept through the door and stood blinking in the golden light on a tiny ledge inside the frescoed dome. The body of the baroque church, 65 metres below was in darkness apart from the light of several Christmas trees.

Returning to the attic, Father Jeremy led us around the outside of the dome and through another door so that we were now within its walls. We climbed a narrow chimney and some more ladders, through a trap door and out onto the roof. One slippery step across the green copper and then there was a railing to hold onto, running round the little masonry turret. We were standing exactly between the setting sun and the rising moon with Melk and the river Danube spread out below us. It was a beautiful moment.

Part 2

The cavers we met at the party were incredulous that we spend our time digging for caves ("you do *what*?") and we prompted considerable mirth by telling them about the twelve year saga of Rana ("We spent half a day digging for a cave once and we thought that was a long time"), but then one of the cavers, Rainer, told us about another digging enthusiast that he knew in Linz. This man, Michael Altman - nicknamed Muck, had spent 50 years digging 200m of sandstone tunnels on his land. Rainer offered to take us to visit him the following day.

So the next day we turned up with our head torches, anticipating something grovelly, dark and damp. Muck greeted us and opened the door to his project. We were amazed to enter a large, well-lit tunnel, the walls of which were covered in paintings of weird creatures. Muck had started off digging himself a nuclear bunker in 1958. He had finally decided to stop digging when he turned 70 in 1997.

He had initially dug by hand, but had soon built himself a digging machine with a rotating cutter which left circular patterns in the walls. Three tunnels led off in different directions. The first headed steeply downwards, as Muck explained, at the greatest angle it was possible to haul a full wheelbarrow back up (about 45 degrees) and was decorated with Muck's own version of our evolution from the sea. Many-headed sea creatures, spiky fishes, man-headed horses and other chimeras followed each other along the walls in a weird pag-eant down to a terminal pool from which emerged a man's head.

As we headed down the second tunnel, Muck told us that at the end we would find all the 'Managers' of the

20th Century. This tunnel was narrower than the first and largely undecorated apart from a large painting of a U-boat. This was in memory of Muck's wheelbarrow man who had served on an experimental hydrogen-peroxide powered U-boat during the Second World War. At the end of this tunnel was a kind of shrine, entirely painted gold containing, in different nooks, a statue of Jesus and a representation of Money along with all the major 20th Century dictators. Muck explained that it was a shrine where anybody could find their own god.



Father Jeremy, Annie Audsley and Alys Mendus climbing on the dome

The third tunnel was the original nuclear bunker, still containing a beer supply (of which we were generously invited to partake), a bar and the digging machine. Whenever there is a need for sand locally, for someone's house or a childrens' playground, Muck quarries a bit more from this tunnel.

So it was a great holiday - the skiing, the hospitality, the beer, the schnapps, the unexpected underground and above ground trips. But most of all it was great to meet some fellow weirdos - many thanks to them all: Peter, Father Jeremy and Muck.

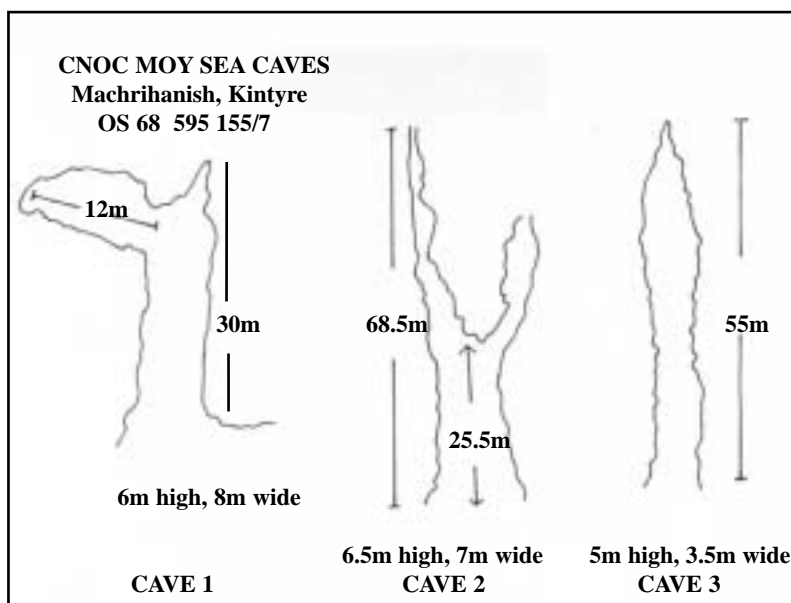
CNOC MOY SEA CAVES Machrihanish, near Campbeltown

By Jim Salvona

A few years ago while holidaying in Kintyre I spotted a cave called Uamh Ropa marked on the map, which we decided to have a look at.

We drove from Southend, or rather Keil Point. This is the easier half of a B road that circles round to near Woodbank. At or near Dalsmorrán we drove along the gravel track which had some 'interesting' bits such as the place where it dips very steeply into a little glen and just as steeply up the other side. I would have left the car at this point but there was nowhere to park it off the track. We pushed on to Largy Baan (a croft?) and were about to go and ask permission to park when this huge (even by Viking standards) man - he could have eaten Louise and I for breakfast and still been hungry - came out of the house and strode vigorously towards us. He wore a jacket, unbuttoned with neither shirt nor vest, trousers, no socks and had about four days' growth of beard. And a pleasanter Highlander you could not ask to meet!

Following his excellent directions we walked the mile and a half to the cliff edge. From here the very steep track was made easier by using the dangling fence as a fixed rope. Half way down a herd of feral goats showed their contempt for my efforts by racing down the track. The Moy caves are at the north end of the rocky beach. I thought them pretty good for sea caves. The middle one is some 70 metres long and has a small, awkward to reach, grotto. The entrances as I recall were similar, averaging seven metres high and wide. No.3, the most northerly, has a zebra stripe effect that I found interesting.



Note: You need to be on the south side of the river well before you reach the cliff track which follows the waterfall down.

CLEAVES COVE CLEAN-UP

By Alan L. Jeffreys

It is an isolated little gem - a mature vadose joint-controlled maze in miniature, set high on the bank of the Dusk Water near Dalry, Ayrshire. Easy of access and very close to a road, it is not surprising that Cleaves Cove attracts quite a bit of visitor attention. (Being marked on OS maps doesn't help of course). With that comes, inevitably, a quantity of plastic and metal rubbish throughout its passages, and copious amounts of timber to light fires.

During a reconnaissance for a scout troop expedition to the cave in early February, I took exception to handfuls of spent nightlights, sweet papers, cans and other such junk. Consequently, I arranged for a thorough clear-up to co-incide with the scout meeting on 28th February.



Carol Dickson collecting rubbish, main passage, Cleaves Cove, Ayrshire.
Photo: A. Jeffreys

In the event, only Carol Dickson and myself attended as GSG mentors, but after waiting until well past the rendezvous time and no scouts, we opted to busy ourselves collecting and bagging rubbish. Cleaves Cove is not overly long and in less than an hour we had restored all passages to pristine condition, amassed four large carrier bags full of litter and thrown masses of sodden timbers into the river below. Among the items recovered were a ¼ full whisky bottle, ferreted away in an awkward alcove, and a smashed thermos flask, abandoned

outside the first entrance.

Pleased with this success (and ourselves) we returned to the road - still no scouts. We soon departed the scene replete with our spoils which were dumped in a layby bin on the A 737. Mercifully we encountered nothing noxious nor any evidence of drug or glue abuse. While in the nature of things I realise fresh muck will be deposited in the future, for now, another of Scotland's underground sites has been well and truly cleaned.

By the way, the scout party, reduced to one black Honda, passed us on the road as we returned, un-noticed since we were looking out for a minibus. Still, since the leaders had already been shown the cave, the group had a good thrutch around on their own and apparently enjoyed themselves.



The collected spoils outside Entrance 1, Cleaves Cove
Photo: A. Jeffreys

BOOK REVIEW:



50 YEARS OF TEXAS CAVING by *Carl E. Kunath*. Published by **A. & K. Enterprises, San Angelo, Texas (2007) 526pp. Hardbound. No. ISBN. US \$50 + postage.**

It was Chris Howes who drew this to my attention, he was looking for someone to take a second copy and so economise on postage costs. Well I had been down half a dozen or so caves in 1974 and taken the family on trips in Sonora and Natural Bridge Caverns in 1995 so it might be a good read? Texas is a BIG place; you can drive for over 800 miles in a straight line. This book is also not small, weighing 2.15 kg. It appears to have been something of a labour of duty/challenge by the author, taking over five years to produce. The preface (six pages) details at length the tribulations, especially in obtaining information from others. It charts progress from 1948 when there were approximately 100 known caves to the present when there are over 4000.

How does one go about writing a history as big as this? Maybe there are some lessons here for the Grampian 50th Anniversary publication? Compare this book with my earlier review in the Shepton Journal Series 11 No.10, p. 465-466 (Autumn 2006) of “Delving Deeper”(A history of New Zealand caving from 1949). The basis adopted this time is a brief chapter (5 pages) “Before 1951”; then a longer chapter (13 pages) “The Pre-Caver Years 1951-55”. The ‘Caver’ is ‘The Texas Caver’, the first issue of which appeared in October 1955. Then in appropriate batches we have (91 pages in all) yearly summaries 1956-2000, each including Region officers, Convention (annual), Project, Caves in the News (names only) and any Caver Biographies (from The Texas Caver). I was beginning to tire of the format, but occasionally there were items that lightened the read, for instance:

1966 contained an account of an incident at the show cave, Cave Without a Name. Five men of ages 18-19 broke into the cave and began an exploration of the decorated upper level. One of them fell and injured his ankle resulting in rescue by the volunteer Fire Department. All were charged with criminal trespass. It transpired that once they had left the cave path their sole source of light was cigarette lighters and when these expired they were trying to negotiate by the illuminated dial of a wristwatch.

Then followed 21 pages of Texas Speleological Association statistics, including various charts. Again attention was beginning to wane when at page 184 things brightened and we got to the more than 40 clubs’ publications, followed by 90 pages of the group histories (or as much as is known of them) of the 69 grottos (US caving clubs) that are known to have existed. The most bizarre must be 10-G Grotto whose members had to recite 10 words beginning with G (later the words were codified) within 10 seconds at any meeting - no wonder it only existed around 1981-82! Carta Valley Society of Underground Cavers, Karstologists and Speleologists - known as the Carta Valley SUCKS even had an initiation ritual involving a stock tank! (Membership was restricted to the number who could stand in the tank without causing it to overflow).

Then comes “The Serious Side” (92 pages) including Conservation and Ethics; Bones; Biology; Cave Diving (including 1928 with a flashlight in a candy jar); Texas Speleological Survey; Mexico (where Texas cavers were predominant); New Mexico; Honours; Golden Years Caving; Pivotal Events and Technical Upgrades; Two Bills (Helman and Russell who have dominated the scene); and Close Calls and Fatalities. Followed obviously by “The Lighter Side” (30 pages) including Amazing Stories; Good Ol’ Daze; Austin Monument Climbing Society (graveyard monuments!); What’s In A Name?; Automobile Adventures (the Grampian could tell similar tales but not as epic!); Caver Parties. Then “Texas’ Greatest Caves” (97 pages) including longest, deepest and ten essays on the best caves, including Caverns of Sonora still regarded as the finest with

a photo gallery of 30 coloured plates of formations; and Natural Bridge Caverns; together with an 11th cave about neglected Felton Cave. Finally “Epilog and the Future” (10 pages) bringing the story up to date from the Millennium to publication and looking forward. I can sympathise with the view expressed that “...more caves will be closed, severely restricted, or destroyed as owners take evasive action in a society that is ever more litigious and befuddled by the actions of ill-informed governmental agencies.”

Overall it is liberally illustrated with black and white and colour photos, surveys, cartoons and correspondence on good gloss paper. One duplicated photo was noted as was the occasional repeated correspondence between various chapters. Was it me or were there too many reunion photos?

It brought back to me memories of caving with loner Tom Meador who died 29th September 1986; Emily Mobley Davis’ four day rescue from Lechuguilla in 1991 - there was a display feature at Carlsbad Caverns National Park (New Mexico) when we visited in 1995; Bill Torode and ‘torosion’; and a visit to Fort Stanton Cave and its cave velvet deposits.

This is a long serious read (526 pages including indices) but then the preface had warned: “You are about to learn nearly everything there is to know about Texas caving.

M.T. Mills, July 2008

Note: *There is a copy of this volume in the club library for any member who is interested in following Milche down this American memory lane. Ed.*

LITERARY EXTRACT:

‘William the Pot-holer’

“He stayed down in this cave under the earth for four months,” said William.

“Who did?” said Ginger.

“This man,” said William, “an’ he got six hundred pounds for it.”

“Six hundred *pounds!*” said Ginger. “Gosh!”

“Yes, I can’t think why everyone doesn’t do it,” said William. “If everyone stayed down in caves under the earth for four months an’ got six hundred pounds, there wouldn’t be any need for anyone to do any work at all. Sounds a jolly easy way of gettin’ money. I can’t think why everyone in the whole *world* doesn’t do it.”

“I don’t b’lieve it’d turn out as easy as that,” said Henry thoughtfully.

“It’s worth tryin’, anyway,” said William. “I don’t see why we shouldn’t have a shot at it. It was in a newspaper so it must be true.”

“We’d get a bit bored in a cave for four months,” said Douglas. “There wouldn’t be anythin’ to do.”

“What did this man do?” said Ginger.

“He read...”

“What could we read?” said Douglas. “We’ve read all the books we’ve got.”

“I’ve got a book my aunt gave me that I’ve never read, called *Heroes of Hebrew History*,” said William. “We could read that.”....

“Our parents’ll wonder what’s happened to us,” said Ginger.

“We can leave notes for them, tellin’ them we’ll be back in four months with six hundred pounds,” said William. “They can’t grumble at us for earnin’ six hundred pounds. It’s only the same as the child workers in the old days ‘cept that they worked in mills an’ we’re goin’ to work in a cave.”

“Not much work,” said Douglas with an ironic sniff. “Jus readin’ *Heroes of Hebrew Hist’ry* an’ thinkin’ about nothin’ and starvin’ to death.”....

“I once met a man that did pot-holin’,” said Henry.

“What’s that?” said William.

“They climb in an’ out of holes at peril of their lives,” said Henry.”

From: *William the Superman* by Richmal Crompton (1968)

THE DISCOVERY OF TIBESTI CHAMBER

By Derek Pettiglio

Over New Year I dedicated some time to inspecting parts of Claonaite for potential and, finding myself abandoned in the hut for a few days, carried out a series of solo descents through Rana Hole. What follows is a diary of my efforts.

Friday 2nd January 2009

Solo digging trip to Rana. Dug out the rest of the Skyeway and re-routed the pipes under the wedged stone.

Martin Hayes popped in to see how I was getting on, and took a line of sight to my light on the bottom of the ditch. It looks like the sump will be passable when full. There is room to lower the ditch more if need be. [Note: This work is being well progressed at the time of publishing. Ed.]

Saturday 3rd January.

Solo trip to Claonaite. Had a good root about in Two B's and Not Two B's.

Sunday 4th January.

Solo trip to Claonaite. Started a dig at the far end of Nipple Chamber (above sump 6b, to the right of Duelling Pianos).

Monday 5th January.

Solo trip to Claonaite. I was planning to go back down the road today but the dig in Nipple Chamber looked sure to go with a few more hours' work, so I went back for a final push.

At the dig face I took my helmet off and shone my light through the small gaps to the void beyond and I could see enough to motivate me to get back to the graft. As ever the last bit was the hardest and seemed to take an age, getting rid of the spoil being the biggest problem. However, I finally reached the point where I was ready to push into the void.

I took my helmet off and went for it; my chest made it through with just a little squeeze and I stopped to take in the view, and the view was good. So the big question was: am I in virgin cave or just linked into a piece of known passage? I was in a large domed chamber which was reasonably well decorated with stal on my right hand roof. The floor was breakdown covered in exquisite mud formations which made it look like a mountain range as seen from the air, some of the tops being covered in white calcite.

I set about exploring the chamber with care as the floor sediments were very easily damaged. The floor was also domed



**Martin Hayes in Tibesti Chamber, Uamh an Claonaite
Photo: Derek Pettiglio**

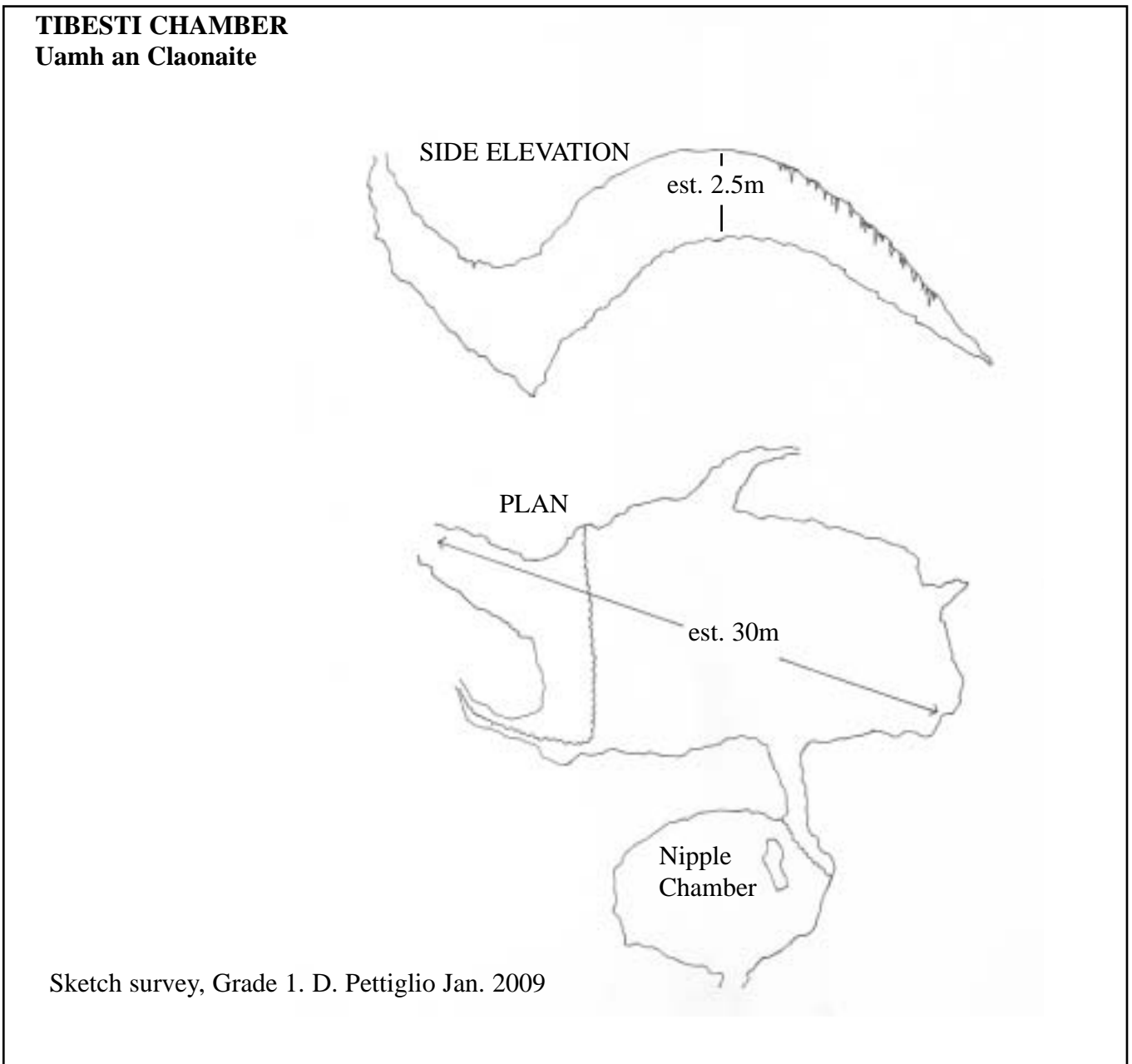
with steepish slopes most of the way round except the wall directly opposite the entrance where there is a small side passage of about 6m which closes down but draughts slightly. On the far right of where I came in there is also a side passage but it is small, sloping down and getting smaller.

The left side of the chamber sloped down to a stream- well a trickle - which sank at the same wall as the entrance. At this point another trickle from a side passage of about 6m also sank.

From the trickle that traversed the entire chamber, the floor sloped up over increasingly large breakdown to a point where it went vertical, but although I could see voids I could also see death so I decided not to push my luck. The stone here was free of silt and there were drips and a slight draught coming from above.

I made my way back out feeling very pleased with myself. When I reached the surface it was not yet fully dark but clear and well below freezing. Ben More Assynt was covered in snow and had a reddish tinge in the fading light, the air was still and quiet and I was a happy man.

The name Tibesti was chosen as the mud formations closely resembled that mountain range in Africa. This new find underlines once more that between Claonaite 7 and the streamway to sump 6a there seem to be well developed chambers which may provide a bypass to sump 6b - and who knows what else?



THREE GO TO CAVE OF THE LIAR

By Peter Glanvill

It was Martin Grass's idea. "While we are on Skye, why don't we visit Cave of the Liar?" As we were 'close' to Applecross and I was keen to tick off said cave on my list I was certainly up for it. Although New Year's Day, in retrospect, wasn't entirely the best time to go.

The day was superb, cold clear and icy as we wound our way up the stunning pass that leads to Applecross. We enjoyed the view of the Cuillins and Martin did some break dancing on a frozen lochan before we descended the other side into the charming village of Applecross which was shut (pub, cafe and all).

Changing in the subzero temperatures the intrepid trio (Martin, me and Sally) set off up the hill past a cottage and along a short track. We then crossed a couple of fields to a dry burn where the limestone became apparent. Leaving the wives with the assurance that 'we would be back in an hour max' we scrambled over the deer fence, negotiated the blaeberry bushes and scrambled up the stream bed.

Martin had located the upper entrance but mindful of the guidebook we duly crawled into the narrow tube further down the burn. This was when reality hit. The cave description, more by omission than commission, fails to mention that there are few places one can stand in the cave. The awkward muddy crawl debouched into a muddy slabby boulder chamber. We had attempted to memorise the survey but only, we realised, in the vaguest way. Three ways on were visible.

One clearly led to the upper entrance and one, I guessed, was probably Frustration Passage but which was which was uncertain so Sally was dispatched down the least inviting whilst I took what looked like the easier option but, of course, it wasn't. Having enlarged temporarily it ended in a nasty looking squeeze past formations - I had got the Frustration Passage deal. After a reversal we quizzed Sally who said her passage went as a draughting crawl. After a couple of attempts squeezing down through jammed boulders we entered another low crawl ending in a climb into what we later realised was



Entrance Passage, Uamh an Breagaire
Photo: P. Glanvill



Martin Grass in a bedding plane crawl, Uamh an Breagaire
Photo: P. Glanvill

Balcony Chamber. Here we met the first formations - quite pleasant and strikingly yellow or orange in colour. A bedding crawl led off (Sally again) which after being initially written off was negotiated by yours truly to a point where I could stand - just. A short section of very obvious vadose passage led round a bend to the famous, and admittedly, very beautiful Flowstone Pot. The others were summoned and I attempted to take photos without coating the camera and flash guns in mud.

Sally then started to get somewhat agitated, pointing out that we had been underground for well over one hour. On the way out Martin had a look at the way on - a tight crawl which we learnt later heads to the largest chamber in the cave.

A few struggles were had with the boulder squeeze and as Sally and I took photos Martin set off to examine the main entrance from inside. We soon realised that the only decent sized passage in the entire system is the

old entrance passage which appears to have a sandstone roof. The exit was interesting although negotiable with caution but we agreed that to attempt entry this way would be both foolhardy and dangerous.

I had a brief chat with the chap who lives in the house at the start of the track. He had been in the cave as a boy, suggesting it has been known for a long time (although he wasn't that old). He says there are still holes appearing in the banks at times - which banks he meant I don't know but it might be worth asking him for a bit more detail.

I thought some observations from a Southern Caver might be of interest. I have decided that Jurassic caving has a distinct essence, i.e. cloying mud, slabby breakdown, low passage and orange stal. Whilst in the cave I felt as if I was in a northern cousin of the Blacknor/Sandy Hole cave complex which lies on the Isle of Portland in Dorset and is probably the longest cave at the south-eastern end of the UK. The only difference is that the Blacknor streamways have been rent by tectonics as the cliffs of Portland peel into the sea.

What was also interesting was the very noticeable draught which only really becomes apparent in the passage leading out of Boulder Chamber. It is particularly noticeable at the passage leading to Flowstone Pot and whilst digging there is obviously impossible it does suggest that there is plenty more cave to discover or that there is a much lower entrance. External temperatures at the time were not much above freezing and there was no appreciable breeze whatsoever.

To sum up, Uamh an Breagaire was interesting, but I won't be rushing back to visit Straw Chamber!



Approach to Flowstone Pot, Uamh an Breagaire

Photo: P. Glanvill

ARCHERFIELD CAVES - Small Caves but a Good Walk for the Dog

By Alan L. Jeffreys

Several weeks ago, Jim Salvona came into the pub bearing a photograph of a well-known cave that he had recently visited. Although not a million miles from Edinburgh, it was a site I had never got round to looking at so, prompted by the picture, I decided to walk the dog round the coastline and check it out. It lies on a raised beach immediately north of the village of Dirleton, East Lothian, on the edge of Eldbotle Wood at NGR NT 498858 and is marked on the 1:50,000 map (sheet 66) as an archaeological site.



Entrance to Archerfield Cave 1, showing remains of the ruined wall

Photo: A. Jeffreys

Named Hanging Rock Cave by Jim (name of the crag housing the cave on larger scale maps), I had a suspicion it might be synonymous with Archerfield Cave, excavated by James E. Cree in 1908, when Iron Age objects were discovered, including deer antler tines used as cheek pieces for horses' bits. I had references for this site lurking in the back of my mind, along with Seacliff Cave a little further east toward North Berwick but had not thus far been motivated to search for them.

The easiest way of approach is to drive north from Dirleton down a metalled road to Yellowcraigs caravan site and car park. From here a short grassy path leads to the sea shore and by turning left and following a well established footway at the edge of the beach

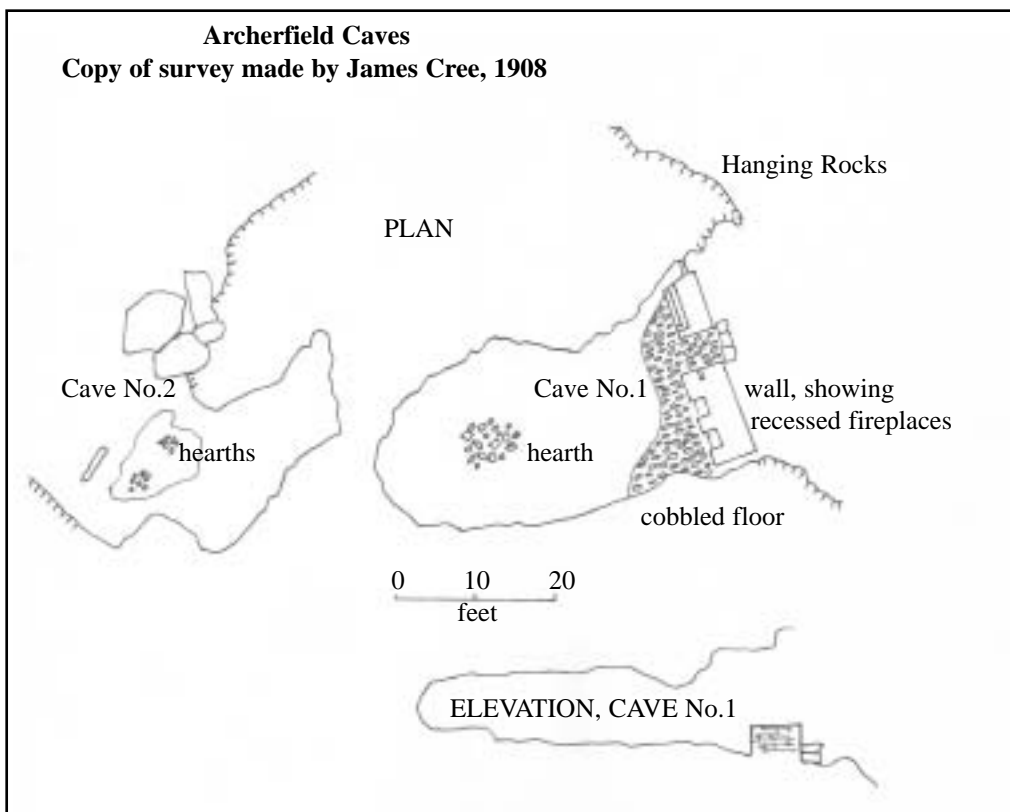
past Marine Villa to the bay formed at Weaklaw Rocks, the caves will be encountered halfway up a prominent sandstone cliff. There are access paths to both caves, which in summer may be partially obscured by bushes.

Cave No.1 - the largest - is on the east side, formed in a volcanic conglomerate. At the entrance is a well constructed but ruined stone wall, clearly having a doorway at the centre. Behind it, a spacious dry cave extends for 14.5 metres in a straight line, maintaining a width of some 7.5 metres throughout before ending at a blank wall. The average ceiling height is 3.5 metres. Although there are no signs of habitation now, clearly at one time the cave was occupied. A substantial hearth existed in both the caves and Roman Samian ware was recovered here. Evidence from the relic wall at the large cave indicates possible habitation at one time. Thankfully, there is little in the way of rubbish or graffiti and ten minutes would suffice to clear up what little litter there is.



Jim Salvona inside Cave No.1.
(The picture which inspired this article)
Photo: R. Webb

Cave No.2 is located on the west side of the rocky bluff and is now substantially smaller, although its entrance is much wider, being about 9 metres wide. It is about 7 metres deep and just over 2 metres in height. At the rear where ceiling meets floor there are several tiny voids suggesting further development but nothing else to indicate a connection through to Cave No.1. Cleaner sandstone above this cave's entrance shows large fractures and collapse appears imminent. Indeed, large breakdown of the conglomerate lies at the north east end of the cave mouth.



When first examined by archaeologists in 1908, photographs show that the surrounding hillside on the raised beach, some 8 metres above the current shore, was completely clear of vegetation where nowadays there are mature trees. Locals referred to No.1 as 'Smuggler's Cave' although this was dismissed by the excavators as being a typical fanciful attribution. Cree⁽¹⁾ observes that Cave No.1 was almost completely obscured by drifted sandy loam, necessitating a crawl to enter, although once inside it was easy standing height. When clearance of

this blockage was complete he revealed the above-mentioned wall, more existing than is extant now. It was of well built masonry with two fireplaces set into the southern side, and bar holes in the doorway. A window at the north end provided a good view of the beach, but not of the cave's interior from outside. Consolidation of the wall with cement was undertaken by the local landowner, but much has now disappeared

along with a rough party wall on its outside. Quite a large area behind the wall had been levelled and paved with cobbles, also now gone.

Prompted by the lay of the volcanic strata, Cree then examined the rocky bluff's west end. Evidence of a rabbit hole descending behind breakdown suggested another cave but any access was completely buried by wind driven sand. This was duly cleared out, commencing with a depth of 2 metres and rapidly shallowing to .3 metres at the rear of the cave. Surprisingly, given its shape, this second cave was, at that time, 13.7 metres long and 7 metres wide, with a maximum roof height of about 3 metres. A later survey indicated that a mere 3 metres separate the two caverns. A human radius was discovered near the surface at Cave No.2, but Cree concluded it was a stray bone, probably deposited by an animal. In 1908, the useable (ie standing height) area of Cave No.2 was 8 metres by 4.5 metres. A glance at the plan drawn up suggests either his maximum measurement was taken at a diagonal *or* in the intervening 100 years rubble has choked the rear of the cave, as it is significantly shorter than the main cavern. Interestingly, given the present nature of the cliff face, the massive breakdown at the entrance's north end was stabilised in antiquity, so must have fallen well before habitation.



Entrance to Cave No.2, showing old breakdown to the left.
Photo: A. Jeffreys

Both caves housed substantial hearths, No.1 at a diameter of 3 metres some 8 metres in from the entrance which, coupled with Iron Age finds recovered from very shallow floor coverings, indicated use of the site at times between the 1st and 2nd Century AD. This tallies with Roman pottery fragments found. Other finds include a stone quern, whetting stones, iron knife blades and pins, fragments of glass, several types of pottery and many animal bones and sea shells. An architectural opinion concerning the stone wall concluded it could date from anywhere between the 4th and 12th Century.

The survey shown is a sketch copy of that published in the Proceedings of the Society of Antiquaries of Scotland.

References:

- (1) Cree, J.E. (1909) Notice of the Excavation of Two Caves, With Remains of Early Iron Age Occupation, on the Estate of Archerfield, Dirleton. Proc. Soc. Antiq. Scot. Vol. 43 pp. 243-268.
- (2) Cullingford, C.H.D. [Ed] (1962) British Caving, Chp.8 p.301.
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Another view of the entrance to Cave No.1. The oblique window is set behind the wall at the extreme right of the picture.

Photo: A. Jeffreys

AND I THOUGHT I HAD GIVEN UP CAVING

By Kirsty Mills

For a number of years we had heard about the International Symposium on Vulcanospeleology which is held every two years in exciting places all over the world, but due to timing (school terms etc) and finances, we had never been able to attend, despite Milche having submitted a joint paper to the first Symposium in 1972 which was held at White Salmon, Washington State, USA.

Milche has a long-held interest in lava caves and over the years we have visited many areas where they exist. We even spent our honeymoon in 1979 on an expedition to Hawaii, searching for and surveying caves on the lava flows below Kilauea (see GSG Bull, Second Series Vol.3 No.2, April, 1981, pp. 10-17).

As we have both now retired, our time is more our own and when we discovered that the 13th International Symposium was to be held this September on Jeju Island, South Korea, we thought "Why not?" A quick look at the website showed that it was possible to register on line and having done so we made our arrangements. As time restrictions no longer had such a great impact and it was a long way to go we added a few other things into the visit - but more of that later.

We flew out of Manchester to London and then onwards to Seoul where we spent a couple of nights to see something of the city. On Sunday 31st August 2008 we caught the 9.15am flight to Jeju City - a flight which takes about an hour. Three airlines fly from Seoul Gimpo Airport to Jeju; Asiana, Korean Air and Jeju Air and there are several flights per hour.

Jeju Island is a volcanic island 483 km south of Seoul and just over 100 km south of mainland South Korea. It is 74 km east to west and 32 km north to south, is a Special Self-Governing Province and has World Heritage status. The population is approximately 550,000, the majority of whom live in Jeju City, with most of the rest living round the coastal fringe. In the centre of the island is Mount Hallasan, at 1950 m high the highest point in South Korea, with 368 Oruem or parasitic volcanoes, scattered over the island. It was formed by four main volcanic eruptions between 1,200,000 and 25,000 years ago.

As we came through the arrivals gate at Jeju Airport we were greeted by a number of people in orange t-shirts bearing the inscription and logo of the Symposium. They took us to the shuttle transport laid on and we were taken to the Sunshine Hotel in Hamdoek - the base for the Symposium and the field trips which followed it. Our registration was quick and efficient after some confusion over the fact that I had paid the registration fee for ourselves and three others from Shepton Mallet C.C. to save on the bank transfer costs. The registration fee had had to be paid in US dollars and the hotel bill in Korean Won. We were asked to pay the hotel bill in cash for administrative reasons and I have to say it is the only time I've paid a bill of over 1,000,000 in any currency! After that we had lunch and then were free to settle in and explore the beach and town.

In the evening, after an early dinner, there was an 'ice-breaker' to meet the other delegates and a chance for people to meet up with old friends and make new ones. Attending the Symposium were over 50 delegates from 22 countries and it was also being held in conjunction with a UIS (International Union of Speleology) meeting the following weekend. I had decided not to sign up as a full delegate but to be an 'accompanying member' on the understanding that we only needed one set of documentation but I could attend all the field trips and save \$100 US.

Monday 1st September began with the Opening Ceremony which was presided over by Professor Kyung Sik Woo with opening remarks by In Seok Son, Director of Jeju Island Cave Research Institute and the welcoming address was given by Tae Hwan Kim, Governor of the Special Self-Governing Province. There was also a welcoming address by Jan Paul Van der Pas, President of the Volcanic Caves Commission of the UIS and the whole occasion was covered by press and TV cameras. Milche, along with others appeared on the front page of the Jeju Times and we appeared on television on the evening news several days running.



**Sump 7, Uamh an Claonaite as Tony Jarratt makes his final journey to the rising, December 2008.
L-R: R. Jones, J. Walford, M. Walford, A. Audsley, A. Latta (to rear),
A. Peggie, D. Butler (BEC), C. Walford, R. Galloway, K. Janossy.**

Photo: I. Young



**Formations in Grotte de Bournillon, Vercors
Photo: Mark Lonnen**



**Ivan Young and Mark Lonnen (hidden) fixing P-hangers in
Long Drop Cave, Appin, October 2008**

Photo: N. Marsh



Martin Hayes in Tibesti Chamber, Uamh an Claonaite, January 2009

Photo: D. Pettiglio



Alison Boutland celebrates a birthday with a special cake in Bridge Hall, Lancaster Hole. Derek Pettiglio in background.

Photo: M. Lonnen



View of decorated tunnel dug out by Michael 'Muck' Altman in Linz, Austria.

Photo: A. Audsley



**Formations in High Pasture Cave, Skye
Photo: R. Simpson**



**Passage in Ghar Sarab, Iran.
Photo. S. Brooks**



**Streamway in Ghar-e-Danial, Iran
Photo: S. Brooks**

After this Opening Ceremony, the ‘accompanying members’ were invited to take part in a tourist visit round the eastern end of the island for the rest of the day. While the rest attended lectures and presentations, we were treated to a visit to a viewpoint overlooking the Sunshine Peak and the eastern coastline of the island, and then after lunch we were taken to Jeju Folk Village - a traditional village museum. On this as on the other two days arranged for us we were accompanied by an English speaking guide.



Phil Collett (SMCC) with a small beer
Photo: K. Mills

On the evening of the first day there was a grand banquet which was held outside on the hotel lawn. Again the guest of honour was the Governor of the Special Self-Governing Province and again congratulatory speeches were made. After the banquet we retreated to the bar of the hotel where we were introduced to the first of many 3 litre jugs of beer, and lemon soju (the local rice wine) which was served in a brass teapot!



Tim Francis (MCG) with kettle of Soju
Photo: K. Mills

September 2nd was the first of the organised field trips. We were divided into two coaches and off we set at 9.00am. First we were



Statue of large formation in Manganggul
Photo: M.T. Mills

taken to Manjanggul Lava Cave. One kilometre of the 7.5 km of this cave is open to the public and it was this part we explored the first day, from the entrance stairway along the huge railway tunnel size passage as far as the large lava slagmite which marks the end of the tourist trip. After this we were shown the entrances to Gymnyeong Lava Tube and Yongcheon Lava Tube - see later.



Ichulbon Tuff Cone (Sunshine Peak)
Photo: K. Mills

After a set lunch in a restaurant we were taken to Seogsan Ilchulbong Tuff Cone. This involved a steep climb up many steps to the crater rim some 180 m high with fantastic views over the coast and the eastern end of the island. After this we were taken on to Sangumburi Crater and Jeju Stone Park. Here there was a museum



Jeju Stone Park
Photo: M.T. Mills

with displays on the formation of the island and the lava flows, all beautifully laid out, and the Stone Park consisted of one man’s collection of stone artefacts, collected from all over the island and numbered in thousands. At each stop the Korean organisers rushed out with the banner for the Symposium and another ‘Group Photo’ was taken.

Wednesday 3rd September was another day of lectures for the delegates and the rest of us were taken into Jeju City to visit the National Folk Museum - small but very interesting and set in lovely grounds, another Stone Park with yet more statues but much smaller than that seen the previous day, lunch, then a teddy bear museum, followed by the O’Sulloc Tea Museum, green tea being one of the crops grown on the island. We were offered samples and they even had green tea ice cream as well as green tea gâteau.

On Thursday there was another day of field trips and first of all we were taken to Hallim Park on the western side of the island. This is a beautiful park laid out with water gardens, botanical gardens, a bonsai garden,

an aviary with many birds from pheasants to ostriches and including a very confused budgie which was trying to mate with a pigeon! There were also a couple of sections of lava cave, in total about 500 m (Hyeopjae and Ssangyong lava caves) which were open to the public within the park. Lunch this day was provided courtesy of the park management.

From Hallim Park we went to the Sambangsan Tuff Ring where we climbed many more steps to a large cave entrance (Sambang Cave) containing a Buddhist Temple. From there we climbed down to the shore to look at some more lava features and a black sand beach. To finish off the day we went to look at columnar jointed lavas at Daepodong on the south coast of the island. We were not able to get down onto the columnar basalt but walked out to a couple of over-looks.



Daepodong columnar basalt
Photo: K. Mills

Friday was the final day of the official part of the Symposium, the next five days being field trips with the meeting of the UIS taking place over the weekend. As the lectures were due to finish just after lunch our tourist visit was only half a day. We were taken to Cow Island - a small island lying off the north east end of the island, beside Sunshine Peak Tuff Cone. To reach this island we took a short ferry crossing (15 minutes). This was on a double ended RORO ferry very reminiscent of CalMac in the Western Isles. We were taken to both a black sand beach and in contrast a very white coral sand beach before crossing back to Jeju for lunch and then back to the hotel for a free afternoon. In the evening there was the closing ceremony and banquet - this time indoors and rather less formal than the opening one the previous Monday. The closing ceremony was again presided over by Kyung Sik Woo and congratulatory addresses were given by Andy Eavis, President UIS, and Jan Paul van der Pas, David Summers, President of the International Show Caves Association, with closing remarks by Kwang Choon Lee, President, Korean Society of Cave Environmental Science. This was followed by yet another retreat to the bar and a karaoke evening at which our host Kyung Sik Woo and his family excelled and the MCG were unstoppable!

With the formal part of the Symposium over, there were five days of field trips left. On Saturday morning, booted and boiler-suited we set off for Waheul Cave. The entrance is situated in a fenced off clump of trees. The cave is approximately 1600 m long and the majority of the cave passage was reasonable walking size but in places it lowered to a crouch and the floor was very muddy. There were a couple of lava pillars and other lava features within the cave and the floor comprised Aa lava. A short way inside the entrance to the cave there was a surface snake in a pool of water which provided some excitement for the biospeleologists amongst us.

The afternoon visit was to Susan Cave. The entrance to this was about 500 m from the road, again fenced off in a field. The entrance was originally found when a cow broke through the roof. Our Korean hosts opened the gate and produced a folding aluminium ladder which they proceeded to lash into place for us to descend. Susan Cave is approximately 4 km long and the first couple of kilometres consist of a lot of breakdown on the floor which is extremely difficult to walk on and clamber over. I have to admit giving up part way into the second kilometre although I understand the second half of the cave was easier walking.

Sunday's trips were Handeul Cave and Socheon Cave. Handeul Cave is located close by a farmyard, again fenced off in a wooded area. The cave passage here was not as large as in some of the other caves and involved some crouching and finally, to make it a round trip, a flat out crawl. The total length of the cave is approximately 1500 m. Socheon Cave entrance is located in yet another tree-lined, fenced-in spot. It is a clamber down on to a boulder pile and then the cave passage proceeded for a couple of hundred metres to a skylight. The cave is approximately 3.1 km long and again features many lava formations such as benches and lava stalactites. This cave also contained ancient pottery which was marked off. The floor in places comprised Aa lava and was difficult to walk on. After too many unstable boulder piles to climb over I decided

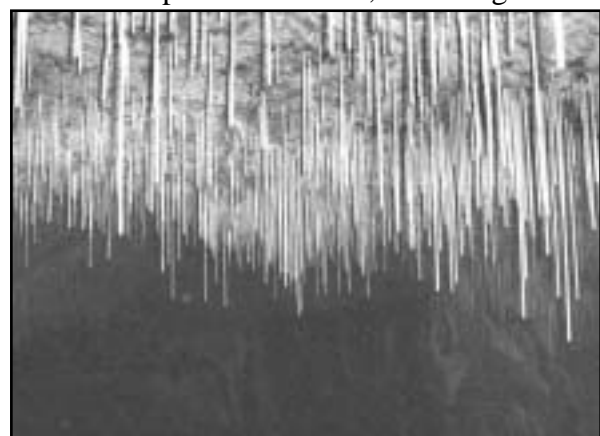
enough was enough and made my way slowly back to the entrance, acting as a stooge for the photographers on the way.

September 8th was the day when we were allowed into the most fragile cave on the island. This day the party was split into two with one half visiting Manjangul again and the other Yongcheondonggul Lava Tube in the morning and then changing over to the opposite after lunch. We visited Manjangul in the morning and visited the upstream upper level of the cave first. This I found very hard as there was a lot of breakdown on the way. I had found caving in most of the caves very difficult due to the very high humidity which made my glasses steam up constantly so I couldn't actually see where I was going and clambering over huge piles of unsteady breakdown boulders defeated me toward the end. I therefore went back to the entrance and revisited the show cave section. After I had had a gentle amble down this passage - I think all the boulders which had been in this section had been dumped in the part not open to the public! - I was waiting quietly outside the cave when Milche rushed up the two flights of stairs and dragged me back down to look at the lower level of the cave. This was railway tunnel sized, flat floored passage for a couple of kilometres and apparently discussions had been had about caving by skateboard, mini scooter, quad bike etc.

After lunch we were taken to Yongcheonggul. This cave was discovered by road workers who were placing an electricity pole at the side of the road and broke into the cave. The downstream side of the cave consisted of lava falls and much breakdown again and I got so far and then decided to turn back - again unable to see where I was going and very unsure of what I was doing. I made my way back to the entrance ladder and was sitting there quietly when the party which had gone downstream returned first. Kyung Sik sent me off on my own to look at the pretties. A path had been marked out very carefully to avoid damage to the majority of the cave but it was very difficult to avoid standing/walking on the calcite floor. There was so much calcite decoration in this part of the cave, including curtains, stalagmites, stalactites, calcite floors and straws, making it



**The entrance to Yongcheonggul.
Photo: P. Collett**



**Some straws in Yongcheonggul
Photo: K. Mills**

unique in the world for a lava cave. The calcite formations came about because of sand deposits on the surface above the cave which allow the water to seep through into the lava and produce calcite formations most often found in limestone caves. It was a very eerie but gratifying experience walking up the passage on my own and having to be very careful to avoid touching the formations, including 20ft long straws hanging down the middle of the passage. Once I had had my fill I made my way out and sat on the surface in the sun watching the women working in the fields until everyone else caught up with me.

The next day's field trips were all to surface features including some coastal tunnels dug out by the Japanese during the war to hide their fast attack boats. The final day's field trip was again to Manjangul but given the fact that I had broken a toe (can't claim a caving injury, tripped on the carpet in the hotel bedroom!) and that I was by that time all caved out, I opted out of the 4 km each way trip downstream beyond the big formation, and the trip to Gimnyeongul which was another part of the same lava flow, had been open to the public but had been closed due to safety concerns, instead travelling into Jeju City to visit the Folk Museum and the Natural History Musuem and just having a break.

The following day the Symposium and the field trips were over and everyone moved on. We flew back to

Seoul and on to Kota Kinabalu on our way to Mulu.

Mulu was something else. We could not get accommodation in the National Park but stayed in the Royal Mulu Resort Hotel, just outside the park. On the afternoon of our arrival we walked up to the National Park



Entrance to Deer Cave, from the inside

Photo: K. Mills

HQ to see what we could arrange. Our travel agent had already arranged trips for us to Lang and Deer Caves one day and Wind and Clearwater Caves the next - we decided to arrange these in advance because it is an awful long way to go to find we couldn't visit any of the caves. However we managed to book a canopy walk in the rain forest for the next morning before walking up to Lang's Cave and Deer Cave in the afternoon. I have to say walking anywhere in that heat and humidity was quite a challenge but we thoroughly enjoyed our walks through the rain forest as well as the caves and watching the bat flight. The following morning we were collected from the hotel by longboat and taken to Wind Cave and Clearwater Cave, visiting a native village on the way. The water levels were quite low and in places the guide had to use an oar to help us on our way. The trip included lunch in a picnic area outside Clearwater Caves and the chance to swim in the river. We were then taken back to the hotel.

I won't try to describe the magnificence of the caves in Mulu - much has been written about them elsewhere - but I will just say that all four caves we visited were just stunning and well worth the effort of getting there.

After we left Mulu we went to Kuala Lumpur for a couple of nights to visit Batu Caves and Dark Caves. Batu Caves house a Hindu temple and have 272 steps up to them, all numbered, lots of scavenging long-tailed Macaque monkeys on the way, huge entrance and souvenir shops within the portal and outside is a 43 m high gilded statue of Murugan. After we had visited Batu we went on to do an 'educational trip' in Dark Caves - to the left of the entrance of Batu and just below the top of the steps. Here we were given a helmet and light each and taken on a 45 minute guided tour. Once we had established that we were cavers we got a very interesting guided trip through huge passages to an opening in the roof with a rope hanging down where further exploration had been taking place. In the entrance and first part of the cave there is a lot of bat guano and this was alive with cockroaches. The cave is quite well decorated with stal, curtains and gours - not in the same class as some of the others we had seen but still well worth the visit. There is a much longer 'adventure' trip available but this has to be booked in advance and we decided not to do this. (See <http://www.darkcave.com.my>)



Batu Caves with Buddhist Temple

Photo: K. Mills

From Kuala Lumpur we flew down to Sydney. Here we were met by Julia James from the airport. We had met her in Korea and when she heard we were coming to Australia she offered to meet us from the airport. We went to her house and got the use of her washing machine - very welcome after three weeks away from home and a 15 kg weight allowance going to Mulu! We were given a tourist guide to Sydney and then a meal and overnight accommodation. The following morning we collected our campervan and headed off to the Blue Mountains and Jenolan. The road down to Jenolan is very narrow, steep and windy, and a challenge in a large camper van, but I understand that they run a one-way system on the roads in and out during the peak hours of the day. Julia had a previous engagement on the Friday night but had arranged for us to stay in one of the car parks (complete with toilets and showers) from where she collected us the following morning at 9.00 am. She produced a key to the caves and off we set on the 'Julia James Jenolan Experience'. In the morning we covered all of the north side of the caves and in the afternoon most of the south side. It is very hard to convey the size of the caves, sufficient to say they were enormous! We managed to visit a huge amount of cave and much more than we could possibly have covered if we had gone there on our own. It

was also free! Our grateful thanks go to Julia for a superb experience. We were also invited to join her and her friends for dinner that evening.

The following morning we set off south towards Canberra, visiting Wombeyan Caves on the way. The road down to Wombeyan is 15 km of unsealed road down into a deep gorge with a very idyllic campsite at the bottom. Here we did two trips: Wollondilly (45 minutes) with a very enthusiastic guide and then the self-guided Fig Tree Cave, coming out through Victoria Arch which returned us to the car park. The caves are very well decorated, contain lots of steps - a great feature of all the caves we visited



Victoria Arch, Fig Tree Cave, Wombeyan
Photo: K. Mills

in Australia, and are well worth a visit.

From here we went on to Canberra where we had been invited to stay with another couple we had met in Korea, John Brush and Marjorie Coggan. They took us on a tour of the city before dinner with another caver friend. In the morning John took us out to Yarrangobilly Caves, an area where he had spent a great deal of time exploring. He had arranged with the National Park Warden for a key and off we went to Jersey and Jillabenan Caves along



Carlotta Arch, Jenolan
Photo: K. Mills

with North and South Glory, where we were given a demonstration of the new LED lighting system being installed. The guide who gave us this demonstration had taken Snab round the cave last year and had been to the Bone Caves in Sutherland with some cavers whilst on a Haggis Backpackers Tour about three years ago.

That night we stayed back up on the plateau at Yarrangobilly Village (which consisted of a derelict hut and a toilet block) about 5 km from the cave. It was raining very hard all night (I'm told that 70 mm of rain fell overnight) and before we left the valley where the caves were, the park warden had had to go and cut up a fallen tree which was blocking the road out. When we arrived at the campsite I looked at the area and decided we would not take the camper down onto the grass, but stay up on hard ground - in retrospect a very good idea. By morning the river had risen considerably and the lower area was under water!

After that we headed off south towards Melbourne, spending the night at Geelong, and then along the Great Ocean Road and on to Naracoorte which we had been told we could not miss. We arrived fairly early in the morning and arranged to do the self guided Wet Cave (not wet at all, in fact very dead), the Alexandra Cave (45 minutes) and Victoria Cave (one hour). Alexandra was well decorated as was Victoria but the 'high point' of Victoria was the archaeological excavations of the fossil remains. Perhaps by this time I had just seen too many caves and too many formations but it didn't impress me all that much.

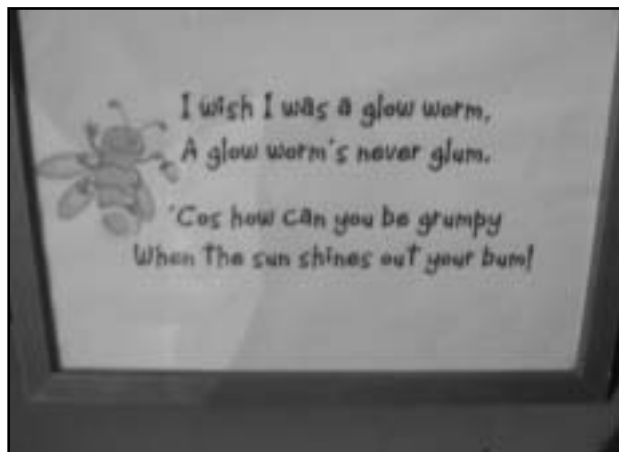


Looking out of North Glory,
Yarrangobilly
Photo: K. Mills

Our Australian trip ended with a drive to Adelaide, overnight stay and flight back to Sydney before going on to Christchurch in New Zealand. We visited NZ three years ago over Christmas to attend a wedding and had managed to do quite a lot, but failed to reach the south end of the South Island so this time we concentrated on that area. We drove down the east coast to Dunedin and then across to Te Anau, arriving late afternoon. This was just in time to arrange to visit the cave that evening and arrange a visit to Milford Sound the foll-

owing day.

Te Anau Cave is visited by boat from Ta Anau. The cave is on the other side of the lake and is a glow worm cave. The boats took about 80 of us across the lake, about a 30 minute sail with stunning views all round of the mountains and when we disembarked we were divided into parties of about 15 and taken round the cave. Te Anau is a very active stream cave full of noise and rushing water. You walk on cantilevered walkways over the river up to a landing stage where you board a boat which takes you round the chamber to see the



A Glow worm's thoughts at Te Anau.

Photo: K. Mills

glow worms before returning to the main stream passage and coming out by the same route. The guide goes to a great deal of trouble to ask people to make no noise so as not to disturb the glow worms but he has to shout over the noise of the rushing water to make his point. While we waited for the other parties to complete their trips (I have to say it is worth being in the first party) we got free hot drinks and there was a short forest walk to do. The guides also gave a talk in the cave house and there was a small museum to look at. After cave after cave with so much stal to see it was a wonderful way to end the caving part of our trip.

The following day we took a bus tour to Milford Sound which included a boat trip out on the Sound. It was a magnificent morning weather-wise and we had a super trip. We had planned to fly back by helicopter over the mountains to be collected later by the coach but the weather closed in and the others in the party who had agreed to do this pulled out so we could not go either. A pity, but if we had done that we would have missed out on the other stops on the way home, including a walk to 'The Chasm', a rushing river down through water-worn pots.

The rest of our trip consisted of driving up to Queenstown then to the east side of Mount Cook before driving back to Wanaka and then over the Haast Pass and up to the Tasman and Franz Joseph glaciers before driving back over Arthur's Pass to Christchurch. We had planned to visit Cave Stream Scenic Reserve on the way back but found this closed - we were told for renovation and improvement - but we hope it is not being made into another show cave. In the past it was free access.

It was a wonderful trip and I did more caving in the 5½ weeks than I have done in perhaps the last 15-20 years! Quite a lot of it was in show caves but even there we got into parts we would never have reached without the efforts put in on our behalf by the people we met. Our grateful thanks go to Professor Kyung Sik Woo and all those involved in arranging the Symposium on Vulcanospeleology. The arrangements went very well and we were exceedingly well looked after by all the members of the team. We also thank Julia James and Al Warild in Sydney and John Brush and Marj Coggan in Canberra. Their hospitality made such a difference to our trip and meant we got to places we could never have managed on our own. Thank you all. I hope one day we can repay some of the hospitality.

Useful websites:

<http://vulcano13.org/eng/>
www.darkcave.com.my
www.mulupark.com
www.royalmuluresort.com
www.jenolancaves.org.au

OVERVIEW - CAVING IN THE ABODE OF THE CLOUDS - 2009

By Simon Brooks

Despite a low turn out from the GSG, namely Hugh Penney and Simon Brooks, an international team totalling 28 cavers (comprised of 13 from India, 7 from the UK, 3 from Switzerland, 2 from Denmark, 1 each from Austria, Belgium and Germany) spent up to three and a half weeks (2nd to 25th February) in the Jaintia Hills district of Meghalaya. The focus of activity was once again on the caving areas of Shnongrim Ridge in the Nongkhlieh Elaka and Pala Ridge in the Samasi/Kopili area.

Over this period a total of 37 caves were explored, mapped and photographed to discover 12,696 metres of new cave passage. Of the 37 caves explored, 30 were entirely new caves with the rest being extensions to caves/systems that had been partially explored in previous years. Key elements of this year's expedition include:

Exploration in the southern section of the Shnongrim Ridge (Lelad/Tangnub area)

* The ongoing exploration and the linking of **Krem Thapbalong Sim** (Hummingbird Cave) and **Krem Shyrong Shrieh** (Monkey Skull Cave) to create a single system (named Humming Monkey System) of 5,488m in length. The initial exploration of what was two separate caves began last year in a typical "the best bits are always found on the last few days on an expedition" style. The extensions and linking of the two caves has created a single system consisting of two fine entrance series that descend by a series of magnificent clean-washed shafts to a depth of -110m whereupon superb river passages are reached which exit at the foot of the ridge near Umthé Village.

* The exploration of the impressive Tngaw Doline (Ape Doline) led to the discovery of the 1,788m long **Krem Tngaw (1+2)** (Ape Cave 1+2) that contained a 70m deep pitch as part of its vertical entrance series leading to yet more typically delightful Meghalayan river passage.

* The descent and exploration of many shafts in the Lelad area that exploited the 'naming of caves after a variety of local birds -theme' and yielded many largely vertical caves such as: **Krem Sim Rwai** (Song Bird Cave) 158m, **Krem Sim Heh** (Big Bird Cave) 102m and **Krem Sim Suk** (Easy Bird Cave) 900m. The names got even worse as more shafts were found so the list stops here.

* The relocation and ongoing exploration of **Krem Umthe** taking it from its 1999 length of 139m to 518m. A group from Wells Cathedral School as part of an overseas Duke of Edinburgh's Award expedition had initially explored this cave in 1999. However, the exact location of the cave had been lost and when found the survey produced in 1999 seemed to be of an entirely different cave. As a consequence it was completely re-surveyed this year and found to be quite extensive and complicated and an ideal survey training location for the Indian Navy Team who were part of the expedition this year.

* The following up of leads in the Tongseng area to find yet more vertical systems, the most notable of which were **Krem Mura 3** with a vertical entrance series comprised of pitches of 35m, 5m, 26m and 13m with a total of 400 m of passage and **Krem Niakrong** which added 210m to the now 3,048m long **Krem Umsohitung**.

* The extension of the surface mapping project to the southern area of the ridge, which in combination with the cave mapping gives a clearer picture of the geomorphology and hydrology of the area. This exercise alone continues to play a significant role in unlocking the secrets of the ridge, contributing to the locating and exploring of additional significant cave systems as detailed above and giving a much better understanding of how the caves on the ridge were formed.

* The discovery and exploration of the above and other new caves that have once again increased the

total length of cave passage explored and surveyed on the Shnongrim Ridge from 148.3 kms to 157 kms, firmly maintaining this area as the greatest concentration of cave passage in one place within the Indian sub-continent.

* This year was the last of the large infamous Shnongrim Ridge camps as a base for the expedition. The fact that many of the big systems on the ridge are now believed to be explored, and the need to move into new and unexplored areas, will mean that from 2010 onwards the Caving in the Abode of the Clouds Project will operate on a more mobile basis using a network of satellite 'camping style' camps based on local villages and areas. This will be a return to a style of exploration that served well in the early years (1992 to 1996) of the Project.

Exploration on the Pala Ridge in the Samasi/Kopili area to the north/north-east of the Shnongrim Ridge.

* The continued exploration of the excellent river cave of Krem Labbit Kseh in the Kopli Valley area, taking it from 883m to 1,652m in length and very much ongoing.

* The reconnaissance and exploration of new caves in the vicinity of Umkyrpong Village that identified many new caves and the exploration of the horizontal **Krem Wah Mytngam**, 406m, **Krem Salang Sink**, 462m and **Krem Dienjem**, 1,328m. These caves proved to be a mix of large dry horizontal passage or river passage that required some significant swims to explore. **Krem Dienjem** is of particular interest in that it contains a significant amount of 'as yet' unexplored river passage that is heading directly towards **Krem Tyngheng**. This cave is believed to be the resurgence for Tyngheng and there is a very real possibility that it will be connected with Tyngheng in future years to create another 20+km Meghalayan river cave.

* The further exploration of **Krem Tyngheng** that added some more wet canal passage in an already complicated area of the cave. Using cutting edge technology in the form of a bamboo maypole bipod, an electric drill and some bolts, some previously inaccessible roof passages near to the entrance of the cave were entered. Further into the cave a 'throw the rope over a reasonably stable looking rock bridge in the roof of a passage, tie it off and convince one of the team that it is okay to prussik up the other end of the rope technique' provided access to more roof passage. Together these two pleasant sections of roof passage and the wet canals yielded another 484m of passage, taking the cave to 12,887m in length and from India's 6th longest cave to the 5th.

There were other aspects that were of particular interest in this year's expedition.

10 of the 13 Indian cavers were from the Indian Navy. The Indian Navy is seeking to establish caving as one of its main adventure activities and the European team members provided SRT and cave exploration/surveying training to the Indian Navy personnel as part of the expedition. The Navy personnel quickly gained skills in surveying and SRT and proved their competence as able expedition members and it is hoped that future exploration in Meghalaya will involve a team from the Navy. They certainly added an extra dimension to the expedition and one of the European team members, who will remain nameless, summed up one morning in a statement that said "I am quite looking forward to going down with the Indian Navy."

The techniques used in surveying caves also took a significant step forward in Meghalaya this year. Using the recently developed DistoX (electronic compass, clinometer and measuring tool) running alongside a PDA, data collected underground was 'blue-toothed' directly from the DistoX to the PDA allowing the surveyors to draw up the surveys as the caves were actually being explored. The surveyors on this year's expedition were unanimous that this represents the future of cave surveying.

The weather in north east India was also somewhat hotter and more settled than in previous years. This had the advantage of making the camp on the ridge very pleasant but had the disadvantage of bringing out a number of snakes from winter hibernation. During the course of the expedition the snake sightings had reached

about seven, some of which were worryingly close.

To date (March 2009) the whereabouts of some 1,226 caves/cave sites are known in Meghalaya of which 758 have been explored/partially explored to yield in excess of 330 kilometres of surveyed cave passage, with much more still waiting to be discovered. Much of the cave that has been explored in Meghalaya to date is impressive river cave mixed with huge relic passage and more recently magnificent clean washed shafts that create cave systems equal in size and beauty to any found elsewhere in the world, maintaining Meghalaya's status on the world caving map as a significant caving region.

In the achievement of the above the Caving in the Abode of the Clouds Project is indebted to the help and support it has received from: the Meghalayan Adventurers Association; the Government of India Tourist Office (East and North East India) Kolkata; the Meghalaya State Tourism Department; officials and Government Departments within Meghalaya and, very importantly, the people of Meghalaya. Particular thanks go to Brian and Maureen in Shillong who have both a major role in organising the expedition each year, put up with their home being used as a kit packing area, kit unpacking and washing area, place to eat, place to sleep, place to park expedition vehicles etc., etc.

MCGREGOR'S CAVE - A VICTORIAN SUMMER HOUSE

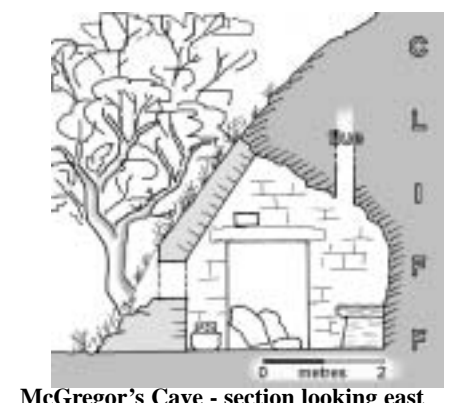
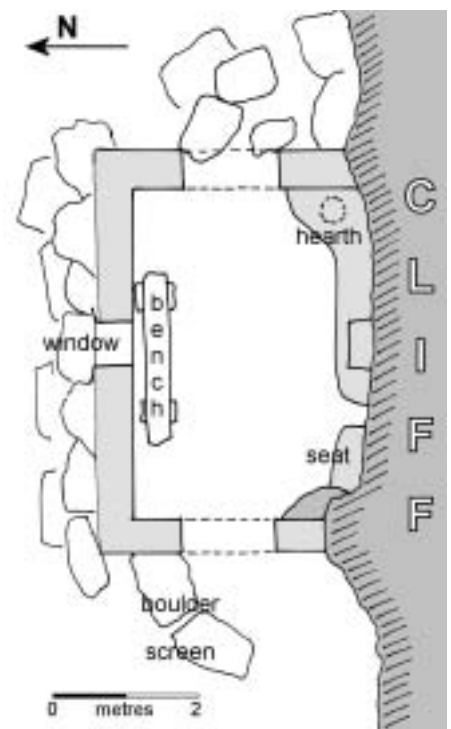
By Ivan Young

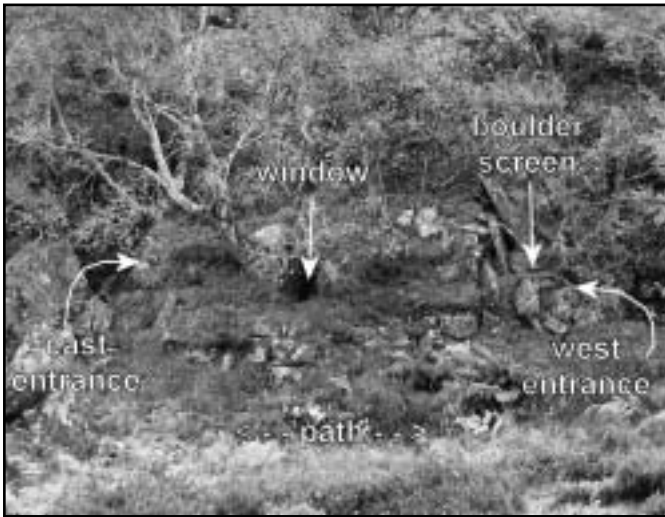
Reading an early draft for the next edition of *Caves of Schiehallion*, I came across a cave name I didn't recognise - McGregor's Cave. The only information was its location on the south side of the River Tummel, east of Dunalastair Water. Later came an enquiry from a television company making the *River Journey* series starring Griff Rhys Jones whose cross-country trek was to include the River Tummel - "Is there a cave he could stay in overnight?" This resurrected my interest in finding out more. A little Internet research found that it was not a natural cave, but artificial, taking advantage of an overhanging cliff. It turned out that nobody from the GSG had been there. Hence one day last October saw Mark Lonnen and I taking a short diversion while en route to Appin.

I drove past the northern slopes of Schiehallion to park at the start of the private road to Crossmount. This leads quickly down to Dunalastair Water, a comparatively recent addition to aquatic Scotland caused by a dam 1.5 km downstream flooding about 1.5 sq km of floodplain east of Loch Rannoch. As the loch narrows the track ends at a house. Note that despite what several modern maps show, there is no longer a bridge across the river here. There used to be a 100 foot long iron bridge constructed in the 1800's, but now only the piers remain. From there a path leads onwards through the forest contouring the hillsides above the dammed Tummel River and reaches the cave a total distance of about 2 km from the public road.

The path passes in front of the cave which faces north and has two entrances to east and west. It could easily be missed. From the path it looks like any other bit of heather and tree covered hillside. The window might give it away, if the overhanging branches don't hide it.

The cave has been constructed by building a wall about 2m high then sloping its continuation inwards at about 60 degrees to meet the overhanging cliff. This has produced a single room 4.6m long and up to 3.3m





External View of McGregor's Cave looking south.

Photo: I. Young

wide. There is a ledge along the back wall which has evidence of being partially tiled at one time with a hearth at its eastern end. The western end of the ledge is lower and could be used as a seat. The apex of the arched ceiling is 3.3m high with a flue above the hearth. The two entrances would have had doors at one time, but no woodwork remains. Both have small rectangular ventilation (?) holes above them. Outside the west doorway a screen of boulders has been built up hiding the doorway from view. An untidy pile of boulders outside the eastern doorway is quite probably the collapsed remains of a second screen. There is a small unglazed window (0.52 x 0.65 m) looking north.

More research since our visit found sales literature for the Dunalastair estate in 1883 and 1890 (ref.1). The main residence was Dunalastair House, built around 1852 on the northern side of the Tummel and now a burnt-out ruin. Recent references appear to have elevated it to a castle, but it was never that. The 1883 sales brochure in describing the grounds has this to say about the cave on page 12 (ref.1, DP038529):-

THE ROAD TO MACGREGOR'S CAVE

May be mentioned as being perhaps one of the most enchanting

It passed under beautifully Shady Timber, and has been recently constructed at great cost, in order to allow Carriages to ascend the Rocky Height where the historic bandit is said to have made his abode. A SUMMER HOUSE has been erected here in the Rocks, and is so constructed as to be almost unobserved, and is in keeping with the wild nature of the spot.

Also in the brochure on page 13 (ref.1, DP038530):-

MACGREGOR'S LEAP, where the celebrated outlaw is said to have jumped the River, when he was pursued, is also a noted spot in the History of Dunalastair.

I couldn't find any other references connecting Rob Roy McGregor to Dunalastair and suspect both connections are more sales patter than fact. The cave is definitely a Victorian construction dating to between 1852 and 1867 since it appears on the 1867 6" map (ref 2). The cave is still in good condition but the track leading to it has deteriorated badly. It certainly isn't carriage-friendly any more.

The cave appears to afford reasonably dry accommodation provided the weather isn't blowing in through the unprotected east doorway. Anyone considering a stay would be advised to consider taking a tarpaulin and a couple of lengths of timber to cover the doorway to windward. I reported this to the TV company, but it appeared schedules had tightened and Griff Rhys Jones no longer required overnight accommodation of that type en route. The River Journey series will be broadcast on BBC1 sometime this spring.



Inside view looking east with hearth behind Mark Lonnen.

Photo: I. Young

References:

- (1) Royal Commission on the Ancient and Historical Monuments of Scotland: digital images for Estate Exchange, no. 1517 Sales Brochure DP038517->31 and Estate Exchange, no. 1518 Sales Brochure DP038762->65 & DP038780->99 available online at <http://canmore.rcahms.gov.uk>
- (2) Ordnance Survey: Six inch 1st edition Perthshire Sheet XXXVII 1867, viewable online at <http://www.nls.uk/maps/os/6inch/perthshire.html>.

CAVING WITH A BEARD: AN EXPERIMENT

By Richard Simpson

It had been some weeks since I was last underground and having neglected to shave the growth from my chin during this time I had the start of a decent beard, but it was while shaving this off, as it didn't really suit me, that I got to wondering about a few things. Why is belly button fluff blue? If you run out of invisible ink, how can you tell? Do sheep get static cling when you rub them together? Would sporting a beard help to make me a better caver? As it was raining outside I decided to give the sheep question a miss and turned my attention to the quandary of the beard.

Looking through photos from past newsletters and bulletins there appears to be a proportion of members with this facial fuzz and while this may be a fashion statement I can't help thinking that there is something else to it because as fashions change the manicured beards remain. With this in mind I decided to try to find out if there was a case to answer.

My first thought was to send out a questionnaire and analyse the results, but this would take some time and to be honest I couldn't really be bothered, but as there is no substitute for first hand experience I decided to take a leaf out of any good scientist's book and experiment on myself. As cultivating another growth would have taken some time I decided against this (especially when you have to go through the itchy stage again!) and the only thing I had which could double as a beard was the family heirloom, but I certainly wasn't going to be putting that tatty merkin anywhere near my face so I had to settle for obtaining a beard kit from the local toy shop. At least I could be confident that it had been kept sterile within its packaging. The next step was to find a control site. I decided it had to be a part of cave passage which as a fresh faced (well, stubble free!) caver I had found awkward and as many Skye caves fall into this category I chose to use one from the Coille Gaireallach area. The entrance was an easy couple of metres crawl along a stream passage and a drop into a low stooping chamber with another small stream appearing between too low passage behind. From here it was a low crawl of about 15 metres downstream, passing chert covered walls to a drop into another smaller chamber where it was possible to turn around. Another few metres of crawling led to the squeeze which involved lying on one side and corkscrewing between narrow walls and jammed hanging blocks to a sump. After returning to the surface I repeated the descent with the beard and it actually felt a little easier. Whether the beard gave extra confidence or agility or I was just familiar with the system, I could not be fully sure.

As caving is not the sole domain of the bearded or bare skin chinned male it occurred to me that another equation had to be added to this carefully staged experiment. While not all females find it easy to grow facial hair to some distinction (unless you are a troll or have a part in a travelling circus) it would be unfair not to have equal representation. So, not to be put off by a certain difference in anatomy, a slight compromise had to be endured but which as I'm sure you'll agree does not detract from the overall conclusion.

Since *the* ultimate compromise would be taking things a bit too far, even for such a deeply philosophical issue that this experiment provokes, I raided the wife's wardrobe and found the perfect outfit in an old but well kept bridesmaid's dress. Ignoring the diminishing shouts as I hurried out of the house, I made my way back to the control site where I donned the test garment. Luckily, I had had the forethought to purchase two sets of beard kits just in case the first set became unusable, so I used the unopened kit in order to stop any cross-dressing oops!! I mean contamination from voiding the test. It was at this point that I met a couple who were passing near the cave entrance while out for a stroll but thankfully Halloween had just past some weeks earlier so the couple were left in no doubt that this was not a prank. Having been through the cave several times now I was expecting it would feel like putting on an old slipper (a comfortable fit) so I meticulously carried out a reconstruction of the first experiment but the slipper turned out to have been chewed by the dog, pissed on by the cat and then used to skelp the arse of a misbehaving child. Ironically, movement in this free flowing outfit proved to be restrictive as the dress kept catching on the rock protrusions and had to be de-snagged which involved many ripping sounds while the spectre of my scornful faced wife looked down at me. The squeeze

didn't fare any better even with the beard, but taking into consideration that I have never caved as a woman before I felt this passed rather well despite emerging from the cave looking like one of the ugly sisters who has been attacked by a family of hungry wildcats.

While careful efforts have been made to produce realistic results, some variables must be taken into account. With this in mind I have to conclude that the experiment has sadly proved inconclusive. However, if there is any person or persons willing to follow up this research then other options may be to try it with different styles of moustache or goatee and you could even mix and match this with say....a bikini or mini skirt accessorised with suspenders while SRTing.

NB: As no real care has been taken to deliver accurate results, I have embellished this factual(ish) article to hide the fact that nothing really has been achieved by wearing either a fake beard or dress or indeed the pair as an ensemble and so the results should be taken with a pinch of salt or even a dash of some fine whisky if it's not too early.

PS: I can now confirm that sheep do suffer from static cling.



SKYE CAVE SONG (Tune: Over the Seas to Skye)

Bring ladders and ropes and snap links, for dopes
who knot tying never should try.
Bring oodles of beer we must have good cheer
when we go caving on Skye.

Chorus: *This is a song that potholers sing
When they go caving in Skye.
Make sure the tackle you ruddy well bring
is the best you can beg, steal or buy.*

If somebody's sheep are all in a heap
down a bit hole you've dug.
Just fill the thing in and put on a grin
you might even give a wee shrug.

Chorus
In days of old people found gold
at McCoiter's Cave over Portree.
But, sighs and groans we only found bones,
that the polisman came up to see.

Chorus
Some people rave about the Spar Cave
when they go visiting Skye.
The Nursling 'tis said, was found by a maid
who, by his side had to lie.

Chorus

A LIGHTWEIGHT STATE-OF-THE-ART CAVING LIGHT DESIGN

By Dave Warren

My current caving light is now 10 years old and has some electrical problems, so I thought I'd review the state-of-the-art technologies for lightweight portable lighting and see how close commercially available products are.

Any caving light is a trade-off between the following factors:-

- * Light Output
 - o Minimum of 100 lumens (About twice the brightness of the speleo-technics FX3)
 - o Pilot light of 25 Lumens (I estimate FX3 is 20 Lumens).
- * Duration
 - o Minimum of 6 hours at full power, 12 hours at half power (FX3 is 9Hrs on main beam, 23 hours on pilot)
- * Size and Weight
 - o As small and light as possible to meet above criteria. Ideally can be fitted on a helmet without problem. (FX3 weighs 1.6Kg with a weight on helmet of 250gms.)
- * Reasonably Priced
 - o Less than £80
- * Waterproof and Rugged
 - o Not discussed here

Light Output

To design a product with a reasonable light output, for a reasonable duration and a reasonable size battery (and at reasonable cost) requires optimising light efficiency. Although related, maximum light output is not considered here. The table below lists the standard technologies and their efficiencies (I've included some impractical technologies as a reference):-

Technology	Efficiency (Lumens/Watt)	Notes
Tungsten incandescent	5-15	Higher efficiencies have shorter life
Tungsten glass halogen	24-35	Higher efficiencies have shorter life
Compact fluorescent	60-72	Too large for caving
High power LEDs	80-95	State of the art today
Xenon arc lamp	30-50	Expensive car headlights
Metal halide lamp	65-115	Large high power lights only
High pressure sodium	150	Large high power lights only
Low pressure sodium	180-200	Large high power lights only
Theoretical maximum	683.2	Green Light

As can be seen in the table, the state-of-the-art High Power LED is now the most efficient practical portable technology. Furthermore they are robust, compact, reliable, reasonably priced, have a long life and can be dimmed to <1% of their full power output without impacting the light quality or efficiency.

The efficiency of these high power LEDs is improving at 20-40% every year, with efficiencies of >200

Lumens/Watt expected within 3 years. The table below looks at the leading-edge products available today (February 2009). Unfortunately these leading-edge products are about twice the price of the variants that are 70% as efficient.

Manufacturer	Model, bin	Min Flux (lm)	Max flux (lm)	@I (mA)	@V	Eff. (lm/W)	@ Junc °C	Junc 100 °C	700 mA (min)	1000 mA (min)
Cree	XR-E, Q5	107	114	350	3.3	93	25	85%	181	235
Cree	XP-E,R2	114	122	350	3.4	96	25	78%	200	NA
Lumileds	PWC1-0100,N	100	120	350	3.15	91	30	85%	170	NA
Soul	X42180,U	91	110	350	3.25	80	25	80%	163	218
Nichia	NS6W183T, C230	110	120	350	3.25	97	25	90%	230	NA
Nichia	NS6W083BT, B10	100	110	300	3.4	84	25	NA	NA	NA

As can be seen from the table above, all these LEDs meet the 100 Lumens criteria, and require about 1.1 Watts input to archive this. Keeping the LEDs cool is essential to keep them efficient and give them a reasonable life. An LED that runs cool and is not over-rated can have a life of >50,000 hours. (The junction temperature at which the efficiency is specified is not possible to achieve in continuous operation, which is why I've shown the de-rating for a junction temperature of 100°C.)

LED Colour

All the white LEDs discussed above produce light by a two-stage process; a blue LED excites a white phosphor that produces white light. Many of the older white LEDs have the distinct blue glow of the underlying LED. Even these modern LEDs have a colour defined as "cool-white". Cool-white is the most efficient white LED, but other whites are available. The table below lists the colour options of Lumileds, along with the efficiency. (Technically, the colour is defined by the "colour temperature".) As a reference, bright mid-day sun, has a colour temperature of 6000K.

Colour Name	Peak Colour Temperature	Colour Temperature Range	Min Lumens @ 350mA	Colour Rendering Index
Cool White (more blue)	6,500K	4,500K - 10,000K	100	70%
Natural White	4,100K	3,500K - 4,500K	80	75%
Warm White (more red)	3,100K	2,540K - 3,500K	60	85%

When comparing LED efficiency it's important to look at the colour temperature!

The Colour Rendering Index is a measure of the ability of a light source to reproduce the colours faithfully in comparison to an "ideal natural light source". Although the measure is often criticised for comparing different light technologies, but it's the best we've got!

The Power Regulator

Power LEDs require to be driven at a constant current. The voltage will vary between LEDs, and with cur-

rent and temperature. Furthermore, the battery voltage will drop as it's discharged. The cheapest way of implementing this is a resistor, but this is <65% efficient and will dim with reducing battery voltage. A more efficient mechanism is a switching regulator, which achieves >85% efficiency and will maintain full brightness until the battery is discharged.

An extra complication with the practical batteries described below, driving a single LED, is that sometimes the battery voltage is higher than the LED (Battery 4.2V, LED 3.1V) and sometimes it's lower (Battery 2.8V, LED 3.7V). This requires a regulator that can reduce the voltage (buck) or increase it (boost), called a buck-boost regulator (surprise, surprise!). Fortunately these are available as integrated circuits which only require a few other components to be operational.

The Battery

A 1.1W LED, driven from a regulator with an efficiency of 85%, with a life of 6 hours requires a battery of at least 7.8Watt hours. The table below looks at the possible, reasonably priced, rechargeable battery options that would provide a minimum life of 6 hours with a 1.1W LED and an 85% efficient regulator:-

Technology	Voltage/Cell	No of Cells	Capacity (Ah)	Power (Wh)	LED Hours	Size (Length xDiameter) mm	Volume (mm ³)	Mass (gms)
Ni-MH	1.2	3	2.8	10.1	7.8	50 x 14 (x 3)	23,100	86
Li-ion	3.7	1	3.0	11.1	8.6	65 x 18	16,550	45

In the table above, the Li-ion battery has several advantages:-

- * Slightly higher capacity
- * Approximately 2/3 the volume
- * Approximately 1/2 the weight.
- * No memory effect
- * Self discharge rate of <x% per month (as opposed to x% per month for Ni-MH)
- * >500 charge/discharge cycles.

However there are also some disadvantages (all manageable):-

- * If discharged below 2.7V the battery is irreparably damaged (Protected batteries have an on-board chip to turn them off at 2.75V.)
- * If charged above 4.2V they will burst into vigorous flames (Protected batteries have an on-board chip to limit this.)
- * The charger must have special characteristics.
- * Greatly reduce their life, at temperatures above 40°C. (not a problem in Scottish caves!)
- * There is an ageing effect which reduces their capacity by approximately 5% per year.

Size, Weight and Cost

The topology of any caving lamp is strongly influenced by the battery. The traditional Oldham has a heavy battery that needs to be carried on a waist belt. It consequently needs a heavy and rugged cable to connect it to the headset. More recently, there have been cap lamps with the battery at the rear of the helmet and the headset at the front. These require a shorter cable that is lighter and less rugged.

If the battery is light enough to mount in the headset, the whole assembly can be even more robust since it

has no external cables. I experimented and concluded (subjectively) that 150grms can be easily carried on the front of a helmet without unbalancing it, providing it was a reasonable size.

I've done a quick, "back of an envelope design" using the LED and regulator in assemblies. In the table below I've listed the approximate size and weight of the assemblies and an overall product:-

Component	Length mm	Diameter mm	Weight gm
LED on PCB + Polymer Optics Limited Collimator (estimate)	15	18	12
Regulator & Switch (estimate)	10	18	8
Battery	65	18	45
Tubular Aluminium case (2mm thick)	90	22	30
Approximate Overall Size and Weight	90	22	95

In this envisaged design, the battery sits across the front of the helmet, with the light pointing forwards, as shown in the picture below.

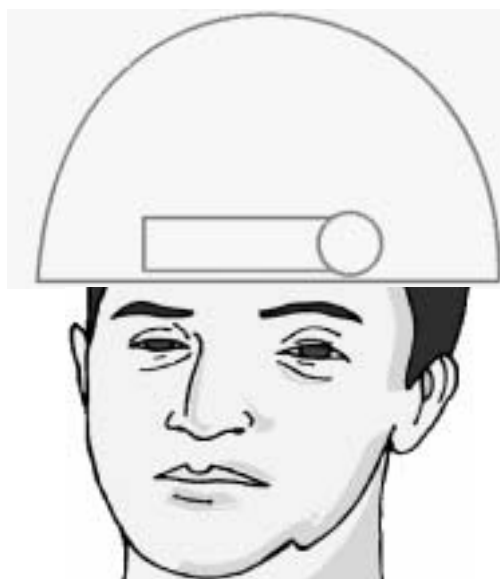


Diagram showing the light fixed to the front of a helmet (where it is best protected and contributes nothing to bulk).

What would be the cost of such a light? The most expensive parts are the LED and optics (about £10), regulator parts (about £5) and case (about £10). These are for a 1 off process. The 100 off price is about 80% of this. There's a rule of thumb in electronics that a product is about 4 times the component cost or £80. (I haven't included the battery here, which is available separately at about £4 each.)

Commercial Products.

There are many manufacturers of "Maglite" type aluminium torches, with a wide range of prices. A few use rechargeable Lithium batteries and quite a few use high-power LEDs, however very few use the 18650 battery and latest LEDs. Furthermore, many of these use a bulky over-sized package to look impressive. (One of the terms to describe them is "tactical" which seems to mean "heavy enough to hit someone over the head with".) The efficiency of some of the electronics looks poor.

I found only one generally available product that came close to my ideal design (but not close enough). The Zibralight H60 is the same layout as I've suggested, has a length of 91mm, a diameter of 23mm and a weight, with battery, of 77g. It has a light output of 110 lm, for a duration of 4 hours and 45 lm for 10hrs. It cost £77 in the UK. Unfortunately it makes no attempt to focus the LED so produces a broad pool of light and no beam! It would probably be fine in some of the smaller Scottish caves, but not good enough for the glories of Rana hole!

Maybe I should build one myself?

IRAN 2008 - EXPLORATION AND MAPPING WITH THE DAMAVAND CLUB AND THE HAMADAN MOUNTAINEERS

By Simon Brooks

Overview

Between the 16th October to 2nd November 2008 I was pleased to be able to return to Iran where once I joined members of the Damavand Mountaineering Club in Tehran and the Hamadan Mountaineering Club in Hamadan to visit, explore and survey caves in the north and central west of Iran. This visit built on the contacts I had made on visits to Iran in 2006 and 2007 (see Expedition Report, Iran 2007, 'Speleology' No.12, Summer 2008) and followed shortly after an International Speleological Expedition to Iran (ISEI-2008) organised under the banner of the UIS that took place between 23rd September and 6th October 2008.

The prime objective of this trip was to survey and explore **Ghar-e-Danial (Danial Cave)** in the Mazadaran karst area on the southern edge of the Caspian Sea and to complete the exploration and surveying of **Ghar Sarab (Sarab Cave)** that is in the Hamadan Province in central west Iran. The second (and arguably the most important) objective was to spend time and undertake some more cave exploration with my Iranian friends and continue the training of Iranian cavers in the skills of surveying and recording caves. During the course of this visit 2,158m was surveyed in **Ghar-e-Danial**, 13.6m in **Ghar Danial Kuchik (Small Danial)**, 9m in **Ghar-e-estakhr (Pool Danial)** and 1,176m in **Ghar Sarab** taking the latter to 2,959.8m in length.

Tehran and Ghar-e-Danial (Danial Cave) in northern Iran

Arriving in Tehran on the morning of 16th October I was met by my friend Babak at the new Imam Khomeini International Airport and taken back to his home, whereupon we then went for a traditional Iranian breakfast of 'Kale Pache' (boiled sheep's head), which is actually a lot more tasty than it sounds. The rest of the days were spent walking in the mountains to the north of Tehran where we took the ski lift up to the Tochal Cafe/restaurant to take in the mountain views and the views back over Tehran. Contact was then made with Afshin Yousefi and Kazem Faridyam from the Damavand Club in order to organise the programme for the following week after which we went to the Daraband walking point in the north of Tehran.

With Tehran nestling into the southern flanks of the Alborz Mountains there are a great number of walking and skiing areas within less than an hour's drive from the centre of Tehran. Daraband was busy as the Iranians are great lovers of the outdoors and many enjoy walking and eating out with friends in the countryside.

The next day I was collected by Kazem from the Damavand Club and we drove north of Tehran to the town of Fasham where we joined a gathering of senior members from the Damavand Club who were having a Breakfast Party. This was an excellent social occasion with much feasting, some walking and a chance to meet many of the older Damavand Club members who had pioneered much of the early cave exploration and mountaineering in Iran. At the invite of one of the senior Damavand Club members Kazem and I made an afternoon visit to the nearby Darandsar Ski Slope that is owned and managed by the Damavand Club. Here we took the newly commissioned ski lift up to the new ski lodge that was nearing completion ready for the forthcoming November to April ski season. The facilities were impressive and the view from the ski lodge over the mountain peaks stunning. Leaving Fasham in the late afternoon Kazem and I then went back into Tehran to Afshin Yousefi, Leila Esfandiary and Mehdi Farahani. We then drove north from Tehran to the town of Chalus on the edge of the Caspian Sea and from there to Motelghu City where Damavand club member Mr Ahmad Refiee has a villa. Motelghu is essentially a resort on the southern coast of the mighty Caspian Sea and Mr Rafiee's villa was to be the base for the following week's cave exploration.

Saturday 18th October saw the first day of surveying in **Ghar-e-Danial** where Afshin, Leila, Mehdi and I sur

veyed 274m in the entrance passages and took some photographs in the large **Talar-e-khoffash** (Chamber of the Bats) that lies some 200m into the cave. Afshin left for Tehran that evening and the following day Leila, Medhi and I returned to the **Ghar-e-Danial** where we surveyed onwards to **Talar-e-khoffash** where we were joined by Taher Shahvari, a Damavand Club member who lives in Motelghu City and Ahmad who had driven up from Tehran that morning. Together we surveyed another 300m of cave passage including **Talar-e-khoffash** which is now believed to be the largest known chamber in Iran with a width of over 60m and a length of over 110m. That evening we returned to the villa and then went to Chalus for an evening meal as guests of friends of Leila. Leila travelled onwards to Tehran later that evening and the rest of the team returned to Ahmad's villa in Motelghu.

Monday 20th October saw the team consisting of Mehdi, Ahmad, Taher and myself back in **Ghar-e-Danial**. An added dimension to the day's caving was the use of Taher's 'Very British', series three Land Rover as transport to and from the cave - Eee it were just like caving in t'Dales. Over the course of the day another 380m of excellent river passage, cascades and streamway were surveyed from **Talar-e-khoffash** to just beyond the 'duck' at **Gozar-e-Javaanshaad**. **Gozar-e-Javaanshaad** is a very significant point in **Ghar-e-Danial** as it is the point where the cave was originally thought to end. However, a caver by the name of Ali Javaanshaad passed this obstacle many years ago to reveal a substantial amount of cave beyond this point. To an experienced caver the significance of this obstacle and the promise of what lies beyond is all too apparent by the howling draught that greets you as you prepare to pass through this classic 'chin-in-the-water' duck. Shortly after this obstacle is another feature that the Iranians have named **Aab va Baad** (Water and Air). Here there is a choice of two ways on, a free diveable sump of 2m length or a small crawl above that carries a fearsome draught. That evening Mehdi returned to Tehran as he needed to be back at work. The following day Ahmad, Taher and I returned to the cave and surveyed another 364m of yet more magnificent and varied stream passage to reach the beautifully decorated **Talar-e-Rizan**



Passing a duck in Danial Cave, Iran.
Photo: S. Brooks

(Rizan Chamber/Chamber of Fallen Blocks). With the surveyed cave passage now being in the order of 1.3kms in length Ahmad went into town that evening to get some chicken meat so that we could celebrate our achievements by having one of Ahmad's excellent 'Juju Kabab Bar-B-Q's' back at the villa. That evening Majid Kashian arrived from Tehran to join the team.

Wednesday 22nd saw Majid, Ahmad and myself back in **Ghar-e-Danial** and a good eleven and a half hour trip saw the cave surveyed from **Talar-e-Rizan** to the current known end of the cave, yielding



Large chamber in Ghar-e-Danial, Iran
Photo: S. Brooks

another 833m of surveyed passage. Several side passages were left unsurveyed due to shortage of time. On returning to the villa and entering the data into the laptop it was realised that the cave turned sharply from its main direction of travel (south south east) to east north east. This suggests that one of the side passages may be the main way on and the Damavand Club members will be returning to explore and survey these at a later date. Over the previous four days **Ghar-e-Danial** had yielded 2,158m of passage and when the remaining side passages are surveyed is likely to be in excess of three kilometres in length. It is nonetheless a superb, varied and spectacular river cave.

On Thursday 23rd October Ahmad took Majid and I to Chalus where he said goodbye, as he was staying on for a few days more to do some D.I.Y. work on the villa, and we took a shared taxi back to Tehran. I then spent the next day in Tehran sightseeing and relaxing in the company of friends Babak and Sanaz.



A superb stream passage in Ghar-e-Danial

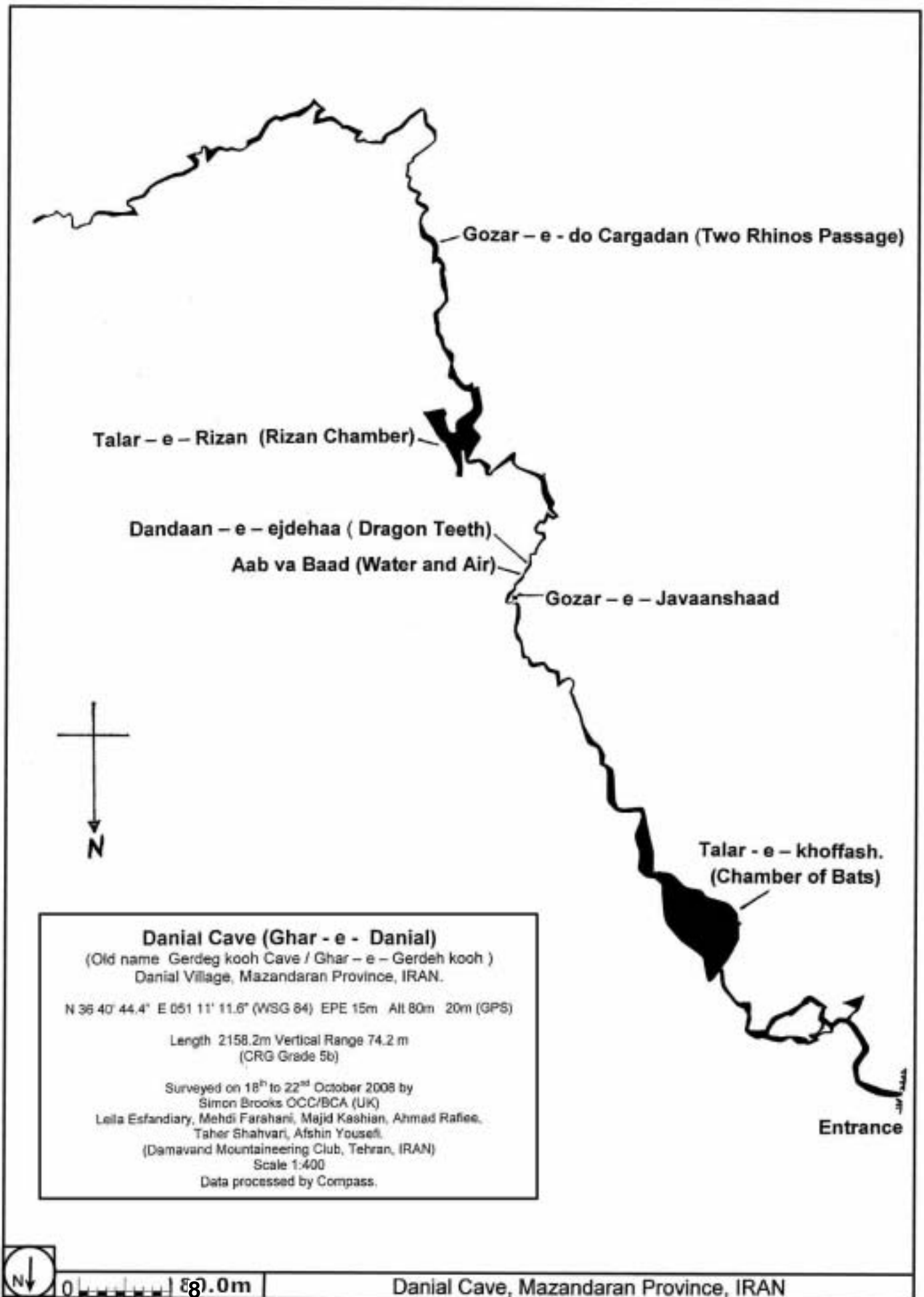
Photo: S. Brooks

Ghar Sarab, Hamadan Area

On the morning of 25th October I travelled down to Hamadan on the bus for the second part of the trip which was to continue the exploration and surveying of **Ghar Sarab**. Once in Hamadan I met up with Mehrnoosh Noorollahi from the Damavand Club and Yousef and Ali Nejaei from the Hamadan Mountaineers. The rest of the day was then spent in Hamadan meeting friends and discussing plans for the ongoing exploration and surveying of **Ghar Sarab**. The following morning Ali drove Mehrnoosh and I from Hamadan to Sarab village to meet Eshan Jabbari, Medhi Aslani, Hooman Farzanekari, Nima Jaddi and Saheed Oryanpour from the Hamadan and Bagher Softy from Esfahan who had travelled up to Sarab two days earlier. With co-operation from the village headman a comfortable expedition camp had been established in the local village mosque, which made for a comfortable albeit a rather unusual caving base.

Ghar Sarab had been the focus of visits and partial exploration by various Iranian cavers and climbers over the past 50 years or so. In 1973 a team from Napier College Edinburgh, comprised almost exclusively of GSG members, had made an expedition to visit **Ghar Sarab** that resulted in about 1.7kms of passage surveyed but left many un-pushed leads. European cavers in 2001 and Russian/Iranian and European cavers in 2006 visited the cave but due to a shortage of time no surveying was done. These visits however re-confirmed that Sarab was far from completely explored. Recent irrigation (2004 onwards) at the entrance to **Ghar Sarab** that sought to extract more water from the cave had mostly resulted in dropping the water level underground which had in turn revealed new passage. In 2007 a re-survey of the cave was begun as this was felt to be the only successful way of tying the new passages in the cave to the previously explored and surveyed passage. However, after five days surveying the 2007 team had only managed to survey about two thirds of the original system to yield 1,784m of cave passage, a significant amount of which was totally new and uncharted. With the original surveyed length of the cave being recorded at 1.7kms it was clear on this occasion that Ghar Sarab was highly likely to double its original length before it was fully explored.

Over the period of the next five days the nearby **Ghar Sarab** was photographed, surveyed and extended. The surveying was done by two teams with Eshan leading one and myself leading the other and the Iranian team members, with guidance from me, putting the surveying skills they had acquired last year into practice by actually surveying the cave. Once again the Iranian team members quickly gained competence in cave sur-



veying, proving themselves to be fast and accurate and Eshan in particular producing some very fine survey notes and sketches.

The first day's surveying in the cave saw a team consisting of Madhi, Hooman, Eshan, Nima, Mehrnoosh,



Passage in Ghar Sarab, showing changes from irrigation drainage

Photo: S. Brooks

Saeed and I concentrating on the passages around the Hamadan Passage that heads south west from the first major lake. Using an inner tube as a flotation device and by climbing along ledges, 157m of passage was surveyed and side passages linked into the main passage. In 1973 the Napier College team had found a large chamber at this end of the cave that they had called '**Hall of the Bats**'. In 2007 the Iranians could not find this chamber and there were questions as to whether it existed at all or whether access to it was now blocked. However, on this occasion climbing a short rift to investigate a dark space above saw us pop out into an impressive

upwards sloping breakdown chamber that was 40m in length and almost 35m wide at its widest point. As for the bats there was very little evidence of these. Before exiting from the cave we went to the lake at the furthest end of Hamadan Passage that represented the final survey point for 2007. Once here I took the inner tube and crossed the lake and beyond the cave continued, very much ongoing, but in a fashion that would require much swimming.

On Monday 27th October Eshan, Hooman and Saeed took the bus back to Hamadan to get supplies. Yousef Nejajei arrived from Hamadan and the team consisting of Mahdi, Hooman, Nima, Yousef and I, who had been waiting for Yousef to arrive, made a late afternoon start into the cave. Using an inner tube raft the first lake was crossed and we spent the rest of the day surveying side passages to connect these to the large boulder chamber known as **Cyrus Hall**. 250m of passage was surveyed. The ongoing impact of the irrigation work at the cave entrance had dropped the water levels in this part of the cave by a further 1.5m from what they were in 2007. As a result, what in 2007 had been pleasant canal passages were now muddy floored tunnels somewhat less attractive than they were previously. The team exited from the cave quite late meeting Eshan, Hooman and a friend of theirs, Jamal Baniamerian, also from Hamadan, back at the mosque. Once again a good communal meal was cooked and the day's data loaded into the laptop. The next day there were two teams in the cave, the original plan having to be modified due to the fact that the inner tubes required for floating in the cave had not materialised. Madhi and Eshan returned to the area in the vicinity of **Hall of the Bats** and surveyed another 216m of side passages. Hooman, Jamal, Mehrnoosh, Yousef and I went to the **Mushroom Lake** where we completed the surveying of various side passages. After which Hooman and I, who were the only ones wearing wetsuits, used the inner tubes as floatation to survey the major wet lead beyond **Mushroom Lake** to reach **Bagdad Chamber**. In this area of the cave a significant side passage was located that leads to some large lake chambers with ongoing passage. It was evident that this was totally new passage as it showed no signs of having been previously entered. After a couple of hours we returned to the waiting Jamal, Mehrnoosh and Yousef having surveyed 156m and taken several photographs.

Wednesday 29th October saw Jamal, Mehrnoosh and Yousef return to Hamadan with Mehrnoosh travelling onwards from there to Tehran. The rest of the team returned to **Ghar Sarab** where Hooman, Nima and I con-



Ghar Sarab (Ghar Sar-Ab)

Sarab Village, Hamadan Province, IRAN.

N 35° 14' 41.7" E 048° 15' 40.6" (WGS 84) EPE 8m Alt 2,200m ± 10m

Length 2859.5m Vertical Range 16.7 m
(CRG Grade 5b)

Surveyed on 21st to 25th October 2007 and 28th to 29th October 2008 by
Simon Brooks OCC/BCA (UK) Shary Ghazy DAV (GERMANY)
Mahdi Aslan, Jamal Beniamerian, Hooman Farzanehkar,
Eshah Jabbari, Nima Jadidi, Yousef Nejati,
(Hamadan Mountaineers SINA, IRAN)
Lilla Esfandiary, Mehrnoosh Noorollahi,
(Damavand Mountaineering Club, Tehran, IRAN)

Scale 1 : 200

Data processed by Compass.



0 40.0 m

Ghar Sarab, Hamadan Province, IRAN

tinued surveying the remaining passages in the vicinity of **Cyrus Hall**. Mehdi and Eshan equipped with wet-suits and inner tubes set off to explore the remaining wet leads on the northern side of **Hamadan Passage** where they succeeded in surveying 67m before disaster struck and a sharp rock sunk one of the tubes. They then returned, located Hooman, Nima and I and using what was now our only surviving inner tube assisted with the surveying of the remaining wet leads in the vicinity of the '**Sea of Tranquillity**' lake chamber. In this area and in the side passages leading off from **Cyrus Hall** another 300m of passage were surveyed. This took the total length of **Ghar Sarab** to 2,959m with several leads still remaining.



Members of the team enjoy a meal at Sarab Village

Photo: S. Brooks

Thursday 30th October the team packed, tidied the mosque and took a car back to Hamadan where that evening I gave a lecture on cave exploration in Iran (with Ali translating to Farsi), to members of the Hamadan Mountaineers and friends. This was followed by training workshops sessions on cave surveying and cave recording.

The next day Ali, Yousef and I went to visit the Alisadr Show Cave offices and meet the managing director and technical manager, as they wanted our thoughts and views on their ideas about further developments to the show cave. We learnt that Ghar Alisadr, Iran's most popular show cave, continues to attract many visitors with the annual visitor figure now being in excess of 700,000. That afternoon I bid farewell to Yousef, Ali and family and returned to Tehran by bus. Saturday 1st November was spent in Tehran meeting caving contacts and discussing future exploration plans. In the evening I gave a lecture on cave exploration in Iran and caving in Meghalaya to the members of the Damavand Club and Espilet Club at the Espilet club HQ in Tehran. Afterwards we all went out into Tehran for a meal and the following day, 2nd November, Babak took me to the airport and I flew back to the UK.

To mark the end of the visit and to say thank you for all the help and co-operation I had received over the previous weeks, I gave a set of surveying equipment consisting of a Suunto compass and clino, a tape and a survey book to both the Damavand Club and the Hamadan Mountaineers. This was both to show my gratitude but most importantly to enable the cavers from the Damavand Club to practice and develop their surveying skills. Recent reports from Iran indicate that they are making good use of this equipment.

Conclusion

Similar to the visits in 2006 and 2007, the 2008 trip proved to be excellent with some fine cave passage explored and surveyed and many new contacts made. Iran once again proved fascinating, the scenery was beautiful and spectacular, the cities busy and modern and the Iranian people hospitable, welcoming and friendly. The links I have made with the cavers from both the Hamavand Club and the Hamadan Mountaineers was strengthened and I continue to be very impressed by the enthusiasm and energy of both the young and older members of both clubs. The opportunities to spend time caving with club members and share skills and knowledge were possibly the most enjoyable and rewarding aspect of this trip. needless to say all being well a return is planned in 2009.

Team 2008

North/Mazandaran (Ghar-e-Danial) - Simon Brooks (UK), Leila Esfandiary, Mehdi Farahani, Majid Kashian, Ahmad Rafiee, Taher Shahvari, Afshin Yousefi (Damavand Mountaineering Club, Tehran, Iran).

Central West/Hamadan (Ghar Sarab) - Simon Brooks (UK), Mahdi Aslani, Jamal Baniamerian, Hooman Farzanekari, Eshan Jabbari, Nima Jadidi, Yousef Nejaei, Saheed Oryanpour (Hamadan Mountaineers Sina, Iran), Mehrnoosh Noorollahi (Damavand Mountaineering Club, Tehran, Iran).

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Traversing Ghar Sarab on an inner tube.

Photo: S. Brooks