

(A Local Group within the Geologists' Association)

NEWSLETTER SPRING 1995

Vol 3 - No 14

MEMBERS CORNER

Intrepid FGS travellers away during March included Jackie and Aubrey Clark, Singapore. Jill and Colin Brash along with Cath Clemesha, Daphne and Clifford Tarbox all to New Zealand. Kate Jemmett, India. Let us know where you have been recently!

Featured in this NEWSLETTER is an account of a field trip to Malham Tarn Field Centre August 1994 by your Editor. To the 18 members that participated it was an unforgettable experience.

An amusing geological list of howlers, contributed by Peggy Innes, follows.

Information available on three self-guided tours is reported by John Williams.

Santorini Enigma is a poem contributed by Ron Roberts is a fitting end for our missive.

FIELD TRIP TO MALHAM TARN FIELD CENTRE 19-26 AUGUST 94 by David Caddy

TITLE OF COURSE *SECRETS OF THE LIMESTONE DALES*

Eighteen members of the Farnham Geological Society arrived on Friday afternoon. Instructions in our Visitor Information Pack for getting to the Centre from Malham were terse; sign posts were practically non-existent. One member arrived next day by public transport.

1. The Centre called *Tarn House* is a solid stone built two storey building at least 350 years old but with many more recent additions and outbuildings. It stands 1316 feet above sea level. It was originally a fishing lodge but has been a Field Studies Centre since 1948. There was a splendid view over the Tarn. (A tarn is described as a small mountainside lake without obvious tributaries.) Malham Tarn does not quite fit the definition of tarn because it has a stream flowing in and one flowing out. However it is one of the very few lakes in the world in high mountain limestone country. The reason for its persistence is its base is mostly impervious folded Silurian rocks through which there is a thin layer of limestone under the northeasterly part. Its depth is for the most part less than ten feet.

About 50 sat down to dinner at long tables. There was a lively party of young Russians (non-geologists) who had been given a weekend holiday on completion of a business course. After dinner we met our leader Sid Perou, a colourful character and expert caving cameraman, who initiated us into the hazards and interests of caving.

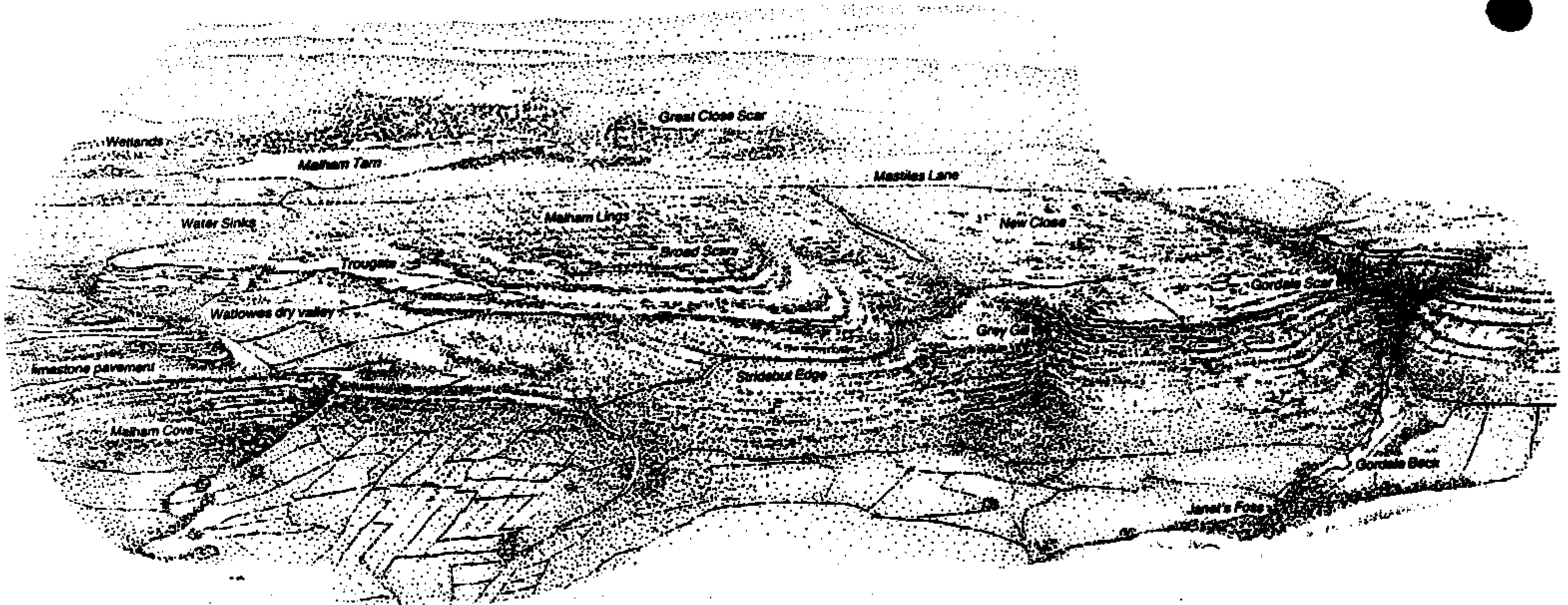
After breakfast on Saturday we prepared our own pack lunches and set out on foot for Malham Cove in brisk but dry weather. This is a favourite tourist spot; a sheer 300 foot cliff which had been a waterfall at times during the Ice Age. There were wonderful views all around. We then made our way down by the west side passing over a limestone pavement on the way. Our geological leader Dave Cronshaw told us about limestone country. Dave, who lives in Blackburn, knows the area well and has taken part in the Three Peaks Run - the peaks being Pen-y-Ghent, Ingleborough and Whernside, all over 2000 feet high. We were to see their flat tops on most of our trips around. These tops are composed of level bedded Millstone Grit.

At the bottom of the cove we found a small river issuing from the base. This stream had left Malham Tarn but had soon gone underground at the Water Sinks (894 655). After a very heavy rain a thin trickle of water actually reaches the Cove as in 1969. However August is about the driest time of year and all rivers are running low.

Lunch was taken in Malham village on benches at the green and we were besieged by dozens of the local ducks. They were not disappointed.

Then we headed for Gordale Scar which lies about 1 1/2 mile NE of Malham village and the same distance due EAST of Malham Cove. On the way we passed Janet's Foss where a stream slides down a tufa bank about 16 feet high. This stream is Gordale Beck. Gordale Scar is a spectacular gorge formed during the Ice Age. It was a steep scramble up to a gentler slope. There was no water flowing in the Gordale Beck at this point.

We returned along more or less level tracks and having covered a good eight miles tea and dinner were more than welcome. The day ended with a talk and video show by our leader.



sketch map of limestone country in area of Malham Tarn

The next morning we left just before 10 AM in two minibuses with forward facing seats with lap belts. The weather was fair and our goal a stream from Pen-y-Ghent. We stopped by Pen-y-Ghent House (859 737) and walked upstream. Our aim was to study rocks in the stream and collect fossils of the Yoredale Beds. These are a rhythmic series of beds representing deltaic and marine facies.

Thin coal
Sandstone
Shale
Limestone

Each series is called a cyclothem. The coal beds are often missing and the limestones most reliably present. There are up to eleven limestone beds. Because of varying hardness of the different beds the hill and valley sides often have a stepped appearance. Above the Yoredales are the sandstones of the Millstone Grit, below them the Great Scar limestone.

Many of the limestones we encountered in the stream were very fossiliferous and the fossils stood proud due to the acidity of the river water. Then we trooped back past the minibuses and down Pen-y-Ghent Gill in lovely sunshine. Splendid views and wonderful limestone vegetation made this, for me at least, one of the highlights of the trip. We ate our packed lunch by the riverbank. From time to time the stream went underground to reappear yards later. We then had a long slog to Litton (906 741) where we eventually boarded the minibuses and so back to base. The pub at Litton was closed.



picnic on the riverbank

On Monday morning in overcast weather we headed for Ribblesdale, stopping at the information centre in Horton-in-Ribblesdale. Then on to the viewing point on the Ribblesdale Viaduct. We were lucky to see a two-coach train going along the viaduct - so more photos! Onwards toward Chapel-le-Dale where we left the minibuses. We walked south towards Ingleborough making for Sunset Pot (not marked on the OS map) passing a huge conical hole called Braithwaite Wife Hole. Sunset Pot was quite a small hole with just room to stand up in the entrance. It had been the scene of a cave rescue attempt which Sid had been involved in. Back over a limestone pavement and so to the Old Hill Inn and Chapel-le-Dale for lunch. Then off to Alum Pot (774 756), a vertical 240 foot deep hole inaccessible except by rope. Several small potholes nearby were explored.

At the Centre after the usual excellent dinner there would be a film by Sid Perou and later in the lecture room an exposition of the local geology by Dave of what we had seen during the day.

Tuesday Morning was foggy. We left all in the larger minibus for a road near Sowerthwaite Farm (773698). Our group started walking uphill noting large Silurian erratics on the skyline going towards Norber. First we examined an unconformity at (769 698) then on to the Norber erratics. This coincided with steady driving rain. These erratics are of Silurian sandstone perched on carboniferous limestone. Their presence saved the limestone beneath them from the same degree of erosion around as they were "perched" on limestones about a foot thick. We squelched back to the bus and were driven down to a pub by Helwith Bridge (810 695).

This evening we saw the moving film by Sid Perou of the rescue attempt at Sunset Pot in which a young caver died. After dinner the skies had cleared to give evening sunshine.

Wednesday was cool and mostly cloudy with rain on and off, heavy at times. We left for Ingleton to join the waterfalls trail of the River Twiss. A very helpful leaflet is available. The trail starts off on the west side of the river which flows roughly from north to south. A mile later we crossed over the Manor Bridge to the east bank. Here the river flowed from NW to SE, roughly along the line of the North Craven Fault and about 100 yards upstream the fault could be seen. To the west of the fault was Carboniferous limestone, to the east was late Ordovician shale. A large hole was present at the fault. This was where an adit had been driven in a vain search for lead minerals. A few hundred yards further we crossed back to the west bank of the river via the Pecca Bridge. This bridge was exactly by a slate quarry with vertical bedding and cleavage just below the Pecca Falls. These were most impressive. There are five main falls with a front drop of 100 feet over vertical beds of Ordovician sandstone (*resistant*) alternating with softer slate beds. Thundering brown and yellow water was just a few feet from the path.

Further upstream was the waterfall of Thornton Force but we were not so close to it. We then crossed the river again and returned on the east side but out of sight of the river. Rain was now steady and at Twistleton Hall Farm the farmer's son allowed us to shelter in a huge barn and have lunch. The group rejoined the minibus in Ingleton and made for Yordas Cave (705 791). A roaring torrent of water ran through it. We had a long journey back, passing through Dent and seeing, but not stopping for, the granite memorial to Adam Sedgwick who was born there.

Friday was the last full day on this trip and we all had to be up early to beat the queue going down Gaping Gill (751 727). Gaping Gill is the largest pothole in Britain. We left the centre at 0825 and climbed out of the minibuses in the big car park at Clapham (146 693). There was a long walk steadily uphill through very pleasant scenery. This was the

Ingleborough Estate owned and run by the Farrer family related to Reginald Farrer the plant hunter. We trekked through a narrow gorge at Trow Gill (755717).

Gaping Gill was like an encampment with tents here and there including loo tents (essential!) and a throng of people all busy. We had to leave our names, addresses, next of kin, etc., sign an indemnity and wear hardhats (supplied). Our group geared up and eventually descended one at a time in sort of a bosuns chair down 360 feet with water streaming down all the time and a constant roar of water down at the bottom. The bosuns chair was guided by a fixed steel cable as the landing point was not vertically below the top. Power for the winch was supplied by an electric generator. At the bottom was a huge cathedral-like cavern with a stream rushing along the bottom and torch lights all over the place. The scene reminded one of Dante's Inferno but substituting water for fire. The person manning the landing point was in a constant spray of water and had to be replaced regularly presumably because of the chill factor. Certainly this reporter was not sorry to be hauled up after about an hour, returning to quiet, sunlight and warmth.

Lunch was taken on the site, then back the way we had come. We visited Ingleborough Cave en route and for £3.00 per head we saw in a well lit and commercialised cavern various stalactites and dripstone formations guided by a young lad with the usual facetious patter. The journey back to the centre was uneventful. After dinner we bade farewell to our leaders and dispersed the next morning.

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GEOLOGICAL HOWLERS by Peggy Innes

Inspired (?) by reading *Geological Howlers, Bones and Bloomers* (but not plagiarized)

Definitions

ANDALUSITE - A native of Andalusia.
CALDERA - What witches use for their spells.
DRUMLINS - Little drums.
PETROLOGY - The study of fuels.
DREIKANTER - What horses do in the desert.
MARCASITE - Sign post.
SLICKENSIDES - Oil spill on the beach.
CRUSTAL SHORTENING - Oven too hot.
FOLDED BEDDING - Tidy minded
CRUMPLED BEDDING - You can make up a definition.
RADIOMETRIC DATE - Arranged over a Citizen Band radio.
FACIES CHANGE - Face lift.
ANORTHOSITE - Library.

Misunderstandings and Definitions

What do you call a rock that has been changed by heat and pressure. METAPHORIC
Acidic lava is less vicious than basaltic lava.
The use of Inferior Oolite is discouraged for buildings of prestige.
Huttons Unconformity was that he was unconventional.
A normal fault is a common mistake lots of people often make.
Exfoliated rocks are peeled before they are heated.
The Ludlow Bone Bed is in an old cemetery in Ludlow.
Dinosaurs lived to a ripe old age. They were 200 million years old when they died.

Dinosaurs died out in the Platonic Period.
Igneous rocks keep their crystals hidden underground.
Sedimentary rocks just sit around in layers.
Inliers are older rocks surrounded by younger rocks because old people like to lie in.



SELF GUIDED TOURS by John Williams

Durleston Country Park

Situated just to the west of Swanage the Country Park contains various walks of a Natural History variety including a Geogical Walk which covers Portland Stone in addition to the Industrial Archaeology relating to mining and transport of their building stone. An information centre holds interesting displays along with leaflets for the walk.

If there is time you may wish to make a short diversion to Langton Matravers where there is a small museum with an interesting display of the local stone and it's extraction.

For the more advenferous it is possible to scramble over the rocks around Peverill Point and collect some Purbeck Marble form the foreshore which you can bring home as a momento or even polish.

Crickley Hill

If you venture towards Gloucester via Cirencester, you can make a short detour at Birdlip, signposted to the "Scenic Viewpoint" and view the Cotswold Scarp and the Severn Vale. On a clear day you will be able to see the Malverns and if you are fortunate, even the Brecon Beacons. At the viewpoint there is a small display of geological exhibits and also a map of outstanding features.

Just beyond the "Air Balloon" there is Crickley Hill Country Park which has a geology trail and a museum. It also has an archaeological site. A convenient spot to break a journey and spend an hour or so exploring limestone. Leaflets can be obtained from the kiosk.

Industrial Archaeology, Geology and a Roman Villa

One can stroll along the track bed of a disused railway through Cotswold limestones combined with a visit to a National Trust Roman Villa at Chilworth. To find it look at a detailed map of the Cotswold area to the North West of Swindon. A leaflet on the geology trail is available from the Gloucestershire Museum



STOP PRESS Changes to the 1995 Programme

Please add to or revise your Programme of Events. July 14 Members Evening talks will be given by Kate Jemmett on a selection of South American gemstones. Janet Catchpole and Tony Brown present their adventure in Norway. Daphne and Cliff Tarbox will relate some of their recent New Zealand experiences. December 8 Dr Ted Finch will replace John Williams as speaker. His subject will be *An Update on Microfossils*.

USA 1996 FIELD TRIP: 21 members have signed up. A few more places are left!

SANTORINI ENIGMA

Beneath Aegean's wine dark sea
Some sixteen fifty years BC
Poseidon, burrowing like a mole,
Did excavate a damn great hole.
It still exists until this day.
Some call it Santorini Bay
But *cognoscenti* say 'caldera'
And geologists converge on Thera
Calling every rock in sight
A *dacite* or an *ignimbrite*
And seek to prove with jargon manic
Its origin is just volcanic.
But may not this Poseidon bloke
Have merely done it for a joke?
Or Paleolithic supermen
(Envisioned by Van Danniken)
Have made an error in a sum
Involving rich uranium?
Surely it would be a pity
Not to form a small committee
And strive with all our main and might
To put the murky record right
Thus bringing glory plain to see
To British Natural History!

The trouble meddling with the Gods
They are such bloody-minded sods.
One misplaced word is quite enough
to end up as a pinch of tuff.
'Poseidon! Should we question Thee
Go easy on seismicity.'

Ron Roberts
September 1994

Our thanks to Marybeth Hovenden

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