

(A Local Group within the Geologists' Association)

## Newsletter December 1999

Vol 3 - No 25

For those members of the Society who were lucky enough to see the last Eclipse of the Millennium we have to thank Paul Olver who, with Diana Smith conducted us to the perfect place at the right time.

For myself this was my first tour of Continental Europe and probably my last one. Most of the countries were seen from motorways. We noted the high standard of agriculture in France and especially Germany. The German farmers made very efficient use of their land and usually had two different crops right alongside one another - one wondered how they harvested the first strip. There was much maize grown besides sugar beet and cereals. All their crops looked very healthy. But where were the cattle? We saw more cows in pasture in Belgium than in France and Germany put together. I was able to pat a brown cow only in the Habachtal valley in Austria.

The motorways on the continent were very well built and organized, never overcrowded. The good old British contraflow was conspicuously absent.

The only French town we stopped in, Woippy, near Metz, was a perfect example of laissez-faire - industry commerce and residential property in an ugly jumble. We had two nights in Germany, in Nördlingen and what a delightful little town it was, with its ancient town wall and towering church. Some of the roads were being resurfaced with granite blocks while we were there. A view of the town from the top of the church tower showed how firmly the planning authorities were in control.

We saw very few brick faced buildings on our tour; most of the walls were cement rendered and painted in tasteful colours.

Some of us may have expected that English would be the *lingua franca* on the continent. That was definitely not the case and we were grateful for the efforts of Michael Cotton when in Germany or Austria. He spoke for us as a group on many occasions.

This Newsletter is mostly the work of Peter Cotton and we are all in his debt. The epic poem is by Ann Bower and we also have to thank Judy Richardson for the vivid pen-and-ink sketch.

We also include a selection of the limericks which members produced while travelling on the Eclipse Trip.

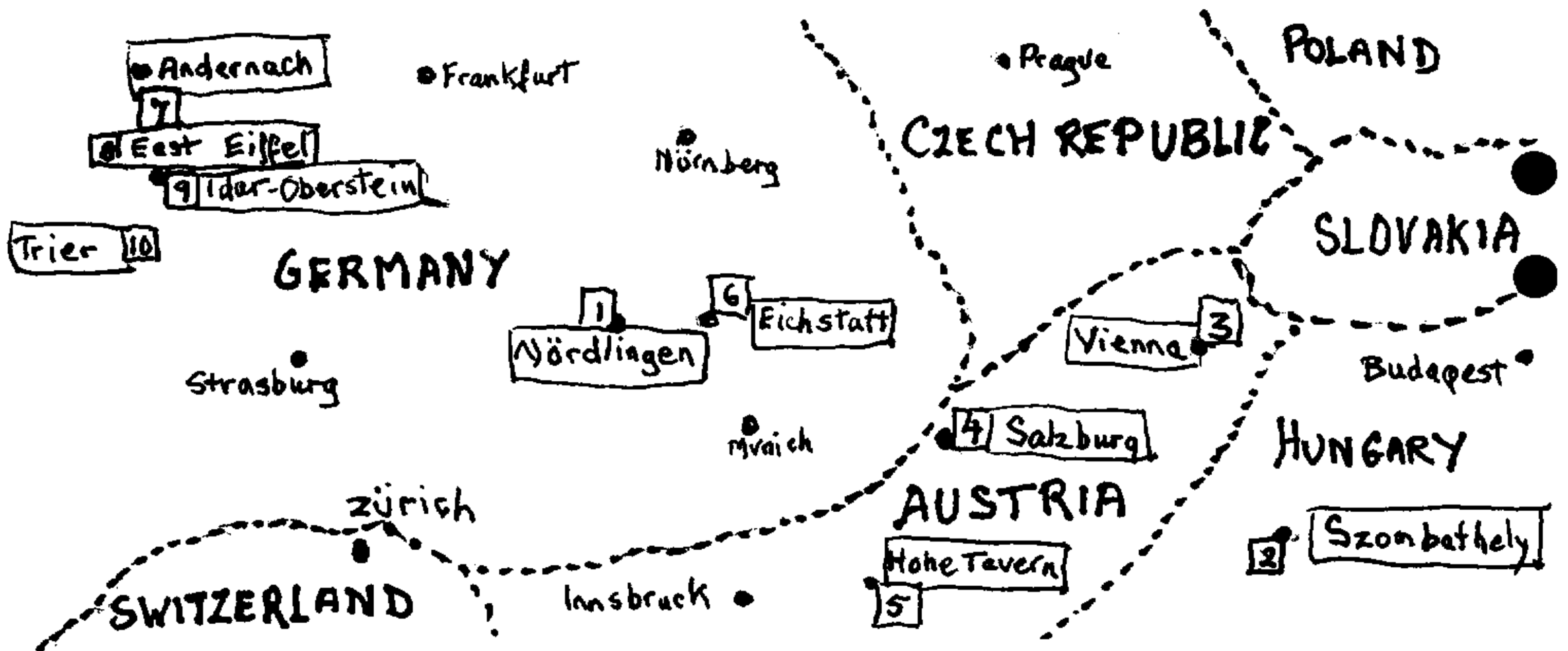
We are glad to learn that Lyn Linse is making steady progress in convalescing after the serious operation which she underwent while we were touring on the continent.

David Caddy

## European "Eclipse Tour" August 1999

On Thursday 5th August members of the Society embarked on their coach at Farnham station and headed for Dover, picking up en route further members at Guildford and Leatherhead. In all, 50 members took passage from Dover including Sue Olver and family who travelled by car throughout the trip. About half the party were newer members, many of whom have continued to participate in Society events and thereby strengthened the Society. Diana Smith and Paul Olver were our joint leaders and one appreciated at the outset the tremendous amount of planning that had gone into this trip. By the end of our tour we were to appreciate even more their diligence in looking after such a large party and returning to the U.K. with everyone who set forth some 18 days previously.

Although the highlight of the tour was planned to be the viewing of the total eclipse at the prime location of Szombathely in south west Hungary, the itinerary included visits to many geological sites in Hungary, Austria, Bavaria and Germany. In this and the following newsletter a summary of the highlights of the whole tour will be given. In order to provide some geographical orientation for the sites described, the map below shows (more or less to scale) the locations of places visited. These are "boxed in" to distinguish them from other place names and in each box the number relates to the sections of the following text. For British people doing a tour such as this in the south east of mainland Europe the movement of traffic between adjoining countries is astonishing; at each rest stop on the motorways lorries from the various countries could be observed coming and going as well, of course, on the large amount of goods being transported along the main rivers and canals.



## 1. Nördlingen and the Rieskrater

Some 110 Km north west of Munich in Bavaria lies the Ries Meteorite Crater complex which we visited during a two night stay in the ancient walled city of Nördlingen. Nearly 15 Ma ago a stone meteorite 1 Km in diameter struck the tertiary rock surface in the middle of a triangle formed by the present cities of Nuremberg, Stuttgart and Munich. At a velocity of up to 40 Km per second it penetrated nearly 1 Km into the basement rocks of the area; this impact created energy equivalent to 250,000 Hiroshima bombs.

The party first visited a subsidiary crater at Steinheim some 40 Km from the main crater; this is one important example of the secondary effects over a wide area of the main impact. Before visiting the main crater, 25 Km in diameter, we went to the Rieskrater Museum in Nördlingen to meet our guide for the day, Dr. Michael Schieber, who is the Museum Director. The building contains an excellent display of both geological and astronomical aspects of heavenly body collisions including the theory that in its early years the Earth was struck a glancing blow by another large body, part of which attached itself to the Earth and the rest went into orbit as the Earth's moon. With regard to the Rieskrater it is only 40 years ago that the origin of this huge flat plain within the Jura mountain landscape and surrounded by a distinctive rim was conclusively established. During the previous 200 years there were inevitably many other explanations, some of them quite bizarre. Most favoured a volcanic origin.

From the Museum we were taken by Michael Schieber to various points around the huge rim from which special local features were observed in quarries as well as viewing the whole topography from different angles. An excellent little guide book from the Museum covers the whole subject well but particular points we noted on our tour of the crater were:-

- (i) The creation of a new unique rock called Suevite which contains much of the melted crystalline basement rocks together with varied proportions of the pre-impact sedimentary rocks. Suevite is a grey-blue rock extensively used over the centuries for building purposes both in the Nordlinger area and also shipped by the Romans via the nearby River Danube to other parts of their empire.
- (ii) Although the meteorite itself vapourised, the pre-impact sedimentary rocks suffered various fates. Approximately 150 cubic kilometres of rock was destroyed by mechanical break-up and melting and this molten rock was deposited inside and outside the crater rim in vast blankets. Small hills are observable inside the rim which are the result of "bounce-back" of the impacted rocks.
- (iii) Outside the rim whole megablocks of Middle Jurassic and older layers of sedimentary rocks were lifted out of the depths and transported to the surface where they rest unconformably on the surface of younger tertiary rocks.

The whole day gave us a fascinating introduction to one of Europe's most famous geological sites. We did, however, have time to wander around the walled city of Nördlingen and admire its medieval architecture. Many of the party climbed the Daniel tower of St. George's Lutheran church built of suevite; from the top a marvellous view both of the city and the nearby crater rim can be obtained.

In conclusion our visit to Nördlingen was the first opportunity to sample some of the local brews. The fields of hops we saw from the coach in much of Bavaria bear witness to the favourite pastime of drinking beer. It must also be recorded that our arrival in Nördlingen presented our driver, Brian, with a major problem in taking the right roads to park by our hotel. We had to resort to summoning the chef from the hotel to act as our guide through the maze of streets and this event gave rise to one of the best puns from Sally, "This must be a Cook's tour".

## 2. Szombathely Field Trips

We arrived in Szombathely on the afternoon of the 10th August having encountered the first tedious border crossing from the EEC to Hungary south of Vienna. First impression of Hungary such as the state of the roads and countryside were favourable, given its relatively recent freedom from Communist rule. There were, however, many Trabant cars on the roads leading to the thought that there may be a good cross-border trade from the previous East Germany of second-hand Trabants as the Germans trade up into more expensive cars.

On the first evening most of the party found their way to the lively town centre for a meal in one of the many open-air restaurants serving good food at very low prices - £10 for two! In the main square coloured plastic globes had been set up on stanchions representing the sun and planets. The globes were to scale and their position in the square was relative to the distance each planet is from the sun. Not only the planets but their moons and Saturn's rings were depicted. Clearly this town was taking the forthcoming eclipse seriously.

On the day after our arrival in Szombathely we had a series of field visits. Surprisingly we purchased our picnic lunch requirements from a Tesco shop! Geographically Hungary is dominated by two plains separated by the Transdanubian Mountain Range. By far the larger of the plains is the Great Hungarian Plain, home to the Magyar horsemen. Our guide for the day was a petite young lady, Dr. Enikô-Bali, from Budapest University. Unfortunately she had a quiet manner of speaking and her English was somewhat hesitant. This meant that only those close-by could hear her explanations which she illustrated throughout on large sketch pads drawn as she was speaking. However, she had produced a guide covering the various stops we were to make and this, coupled with the write-up in the tour booklet, meant that we had a reasonable idea of what we were looking at.

The first stop was at Sintérlap quarry where Cretaceous Aptian limestones were seen containing many rudists. From here we went to a quarry at Nagytárkány where Eocene deposits containing nummulites were seen. After lunch, taken in the shade of a wood above our next quarry stop at Darvastó, we saw bauxite deposits with very colourful red clay beds. During lunch a large praying mantis took a liking to David Caddy but could not be persuaded to act as his guardian for the rest of the afternoon! Unfortunately David lost us on the way to a slagheap but, experienced as he is in these matters, he asked a local peasant to bring him back to the coach in his old truck. The aforementioned slagheap was located within a coal mining complex in the Ajka Coal Basin where extensive overhead conveyor systems join the various mines. Scrambling over the slagheap - not a pastime to be recommended - we found a large quantity of gastropods.

Before returning to Szombathely we made an unplanned visit to a local glassworks at the invitation of another young graduate from Budapest University whose mother is the Quality Control Manager at the plant. Without any protective clothing whatsoever the party wandered through the large factory populated by an army of glassblowers carrying molten chunks of glass from ovens to benches where they were being fashioned into various glass shapes. A British factory inspector would have taken one look inside the factory and closed it on the spot! Nevertheless it produced some high quality products which were purchased by many members in the factory shop at very reasonable prices.

### The Eclipse August 11th 1999

The air of anticipation among members on the morning of the eclipse was very high but the rain clouds caused Paul to consider an alternative site to the one planned on Sag Hill; fortunately the weather improved once we were on the road. At this point the description of subsequent events is best recorded in a set of verses penned by Ann Bower and a sketch drawn by Judy Richardson of the "Ceremony of the Bedsheets".

## ECLIPSE

August 11th. Eclipse Day.  
Long awaited; anticipated.  
But - there's rain!  
Is all in vain?  
Will clouds go past?

Encoached we make our way  
To far volcanic spot.  
Clouds thin! Skies blue!  
The day will soon be hot.  
It's a miracle!

Once there we start to climb  
Up Sag Hill (pronounced "Shag").  
So many steps! Then more and more!  
Leg muscles feel the drag.  
Do we climb so high for a grandstand view  
Of this great celestial drama?  
At the top, what a sight!  
A circular panorama.

Then commences - *sheet laying*;  
"The Ceremony of the Sheets".  
True alignment; pure refinement;  
No wrinkles, no ruffles, no pleats.

Sixty metres of pure white cloth  
Stretched across that grassy plain.  
Anchored with rocks to keep it flat,  
Re-aligned, then anchored again.  
Like some great prayer mat for religious rite.  
Would we pray to the moon and the sun?  
Then onto the mat jump mantis after mantis  
And by them the praying is done.

Tripods erected.  
Telescopes pointed.  
Cameras ready to roll.  
More crowds arriving;  
All creeds and all ages;  
All sharing one singular goal;  
To witness this scene -  
This once in a lifetime,  
This event that no-one can control.

Excitement is mounting.  
Zero-hour nearing.  
First contact has almost been made.  
Blue sky up above -  
Just the odd little cloud;  
On clear stage will this drama be played.  
Then -

A great cheer goes up!  
First contact is made;  
Scene one of this drama begun.  
We can all see quite soon  
That the encroaching moon  
Has taken a bite from the sun.

Excitement still glowing;  
Telescope showing  
Image projected on screen.  
Camera wielded  
Eyes Mylar-shielded;  
Ne'er before was this spectacle seen.

The bite out gets bigger,  
Then a great groan is uttered  
By this crowd who react as though one.  
The view is restricted,  
The spectacle shrouded  
By a small cloud that covers the sun.

Cloud gone; look around  
At the colourful crowd  
That covers this Magyar hill-top.  
Eating and talking,  
Viewing and walking;  
Camaraderie; excitement non-stop.

Sun three quarters eaten;  
Breezes increasing  
Temperatures less than they've been.  
Daylight is dimming;  
White T-shirts are greening;  
An eeriness enters the scene.

Ten minutes to eclipse;  
We straighten the sheets,  
Closely watched by less boisterous hordes.  
They've respected our prayer mat,  
Stepped over, around it.  
Now they wonder what rite it affords.  
We line up along  
Our virgin white strip,  
Closely followed by a surge from all round.  
Our sheets have become  
The focus for many -  
An altar cloth crossing the ground.

We wait. Nothing happens.  
Is it time? Will they come?  
Will the shadow bands show themselves to us?  
Are we wrong? Wrong alignment?  
What will we tell them?  
If the shadow bands hide themselves from us.

Anxious moments. Anxious moments.  
Dimming hopes and dimming light.  
All those people to explain to  
That we got it wrong, not right.

Then, suddenly -  
Down the sheet come silent ripples;  
Faint and grey, a rushing fleet.  
Shadow bands - a shadow river  
Surging silent past our feet.  
Pointing to them draws attention;  
All can focus on the sight.  
Indistinct but live and flowing  
Passing in the fading light.

("Elusive" Patrick Moore had called them.  
Elusive, yes, without the sheets.  
Bravo, Paul, for breadth of vision,  
Allowing us such visual treats!)

Now all look up - it's nearly time  
For mystic merging of the moon and sun.  
What we came for, what was planned for,  
Long-awaited, has begun.

Then - "Diamond Ring", the wondrous jewel,  
Shining, sparkling, glittering, bright.  
Joyous symbol of the union  
'Tween Sun of Day and Moon of Night.  
Greeted by the crowd's gasped wonder;  
Gazing, marvelling, close to tears;  
Great emotions shared together.  
Then the diamond disappears.

How much better is Ann's verse and Judy's sketch in capturing the ambience on Sag Hill than straight text.

After the excitement of the event and now fully restored in the light and heat of a summer's day in Hungary, we did have some geological business to attend to in the afternoon. An 80 Km drive south east over the Central Mountain range brought us to the western shore of Lake Balaton which is a 70 Km long lake south west of Budapest and a playground for the capital and tourists. We didn't have much time to explore the interesting geology of the area but went on to a very long peninsular that stretches halfway across the lake at Tihany. Here we climbed to view a crater lake left by the Tihany Volcano which erupted some 8 Ma ago. A further climb brought us on to one of several old geyserite caves from which there were marvellous views over the small town of Tihany and over to Lake Balaton which was crowded with sailing boats. We then left for the long drive back to Szombathely reaching the Hotel Claudius by 9.30; a long and exciting day.

The following morning we set off for Vienna and in the next newsletter the rest of our trip through Austria and Germany will be covered.

Total Eclipse! Not total darkness  
Our hill is ringed by valleys in light.  
But dark enough to see corona  
And Venus shining as at night.  
Muted light and muted voices;  
All gaze heavenward, viewers down.  
Moon is ringed by bright corona  
Like a queen with golden crown.

All too fast the time has ended;  
Two minutes in a flash flown by,  
But another diamond twinkles -  
Gleaming gemstone in the sky.

Viewers up - the ceasefire over.  
Now eyes must protected be  
For the sun is taking over  
Where the nightlight used to be.  
Slowly light is spreading, growing;  
Slowly warmth increases too.  
People wake up; shake up; chatter,  
Sharing what we've all been through.

What a morning! What a memory!  
What a sight to tell our friends!  
What experience shared in Hungary!  
Now celestial drama ends.

## LIMERICKS FROM THE GOECLIPSE 1999 TOUR

A group of geologists from Surrey  
Toured Europe, by coach, in a flurry;  
As "umleitungen" were many  
They must 'spend a penny'  
At each Rasthof and Gasthof in a hurry!

Farnham geologists decided to travel  
To examine schists, granite and gravel;  
But to me, number one  
Was th'eclipse of the Sun,  
'Cos petrology I just can't unravel!

There once was a driver called Brian  
Whose courage we all can rely on;  
But a coach full of rocks  
Made him shake in his socks;  
Just wait till we load all the wine in!

There was a young man with a hammer  
Who was heard to excitedly stammer  
Oh what a classic  
This rock is Triassic,  
I'll chop off a piece for Diana!

A geologist, whom we call Paul  
On a Wednesday impressed one and all,  
When he put a white tent\* (\* - poetic licence!)  
On a volcanic vent  
And allowed an eclipse to enthrall!

There once was a lady called Sally  
Who made drinks for all in a galley,  
When confronted by francs  
Her reply was "No thanks"  
So pay up your sterling by Calais!

Hurrah for our friend Michael Cotton  
With his linguistic skills we're besotten!  
His German is great,  
With aplomb he'll translate,  
His efforts will not be forgotten!



