SICILIAN VOLCANO HIKE

Bob Mustow

I had always wanted to see a live volcano so I had booked myself on a Trekking holiday around Etna and the Aeolian Islands. "A week in the Mediterranean in October" I'd thought. Should I take T-shirts and trunks or waterproofs and fleece? It is just as well I went prepared because it was cold and wet when we landed and the airport, Catania, had been closed in the morning due to heavy rain.

There were strong squally winds overnight and in the morning Etna, a few miles away by minibus, was coated in fresh snow, unusually heavy for this time of year. We were unable to go very high up so we walked initially through pine woods and silver birch forest until we reached the site of the lava flow of 2002/3 (Fig 1). Here the trees were white sticks like skeletons, contrasting with the black lava.

Fig 1: Skeleton trees and lava flows 2002/3

The bark must have been roasted by the heat and then it fell off leaving the white wood underneath - most odd, but commonplace here. The lava itself had flowed over the ridge in various places in front of us and poured down the valley leaving wide swathes of black coke-like material giving the appearance of a black cultivated field flowing down the mountainside. Walking across it, although it looked loose like a bed of clinker, the whole lot was welded into one piece of rock (Fig 2). As it cooled, the surface must have been solidifying and breaking up as it moved along on the still plastic material underneath. We came across the remains of a ski lift buried in the lava near here.

Fig 2: Walking on lava

An interesting feature on the way was a 'lava cannon' (Fig 3), a tube of rock about one metre outside diameter and half a metre inside and several metres long. It was caused by a tree becoming encased in lava. Eventually it rotted away, leaving the hole.

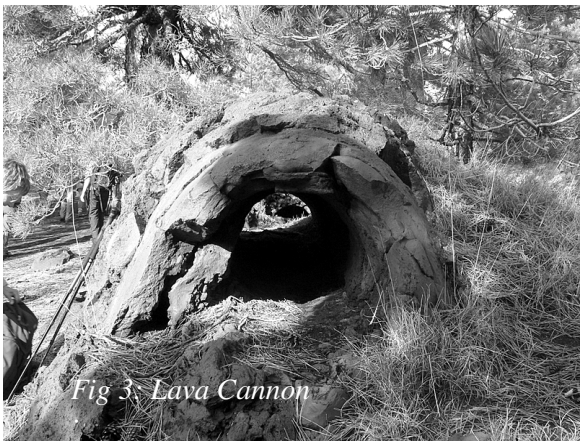

Fig 3: Lava Cannon

After a while we came to a sizeable crater and our guide, Luca, pointed out that it was one of a number in a line up the hillside. A fault line had allowed a small eruption first, possibly a mile or half a mile above us, and then the fault had split open in a series of earthquakes causing more eruptions to occur at intervals down the hillside, each one being bigger than the one before ending with the biggest at the bottom, a bit like shirt buttons popping one after another after a blow-out meal. Photos from space from the ISS show these eruptions formed a line of evenly spaced dots down the mountainside. From the lower craters the now familiar matt black lava was drained from a subterranean reservoir and had flowed down the hillside off into the distance for at least three kilometres, splitting into tributaries and even running uphill over low ridges where forced to. Luca pointed out the skeleton trees below us, and also a group on the far side of the flow which was about half a kilometre across. The flow had

Fig 4: Lava flow over forest

completely destroyed a forest (Fig 4) and we were standing maybe 50 metres above where it had been!

The geology of Etna is confusing and much debated. It does not appear to come under any of the three tectonic processes: destruction (subduction), construction (rifting) or hot-spots. Etna seems to be at the junction of a number of tectonic slabs which have moved in various directions. There is a suggestion that the Eurasian plate, which is about 2km lower down at this point, has subducted under the African crustal plate, has taken it down and pushed it back underneath itself. By the way, I am no geologist so you need to refer to books and the web. You must also read John Parkins' article "The Aeolian Islands" in the Bath Geological Society Journal No 24, Autumn 2005.

Anyway, next day we went by minibus to just below the snowline and walked to the Valle de Bové, a feature on the south side of Etna which appears to be where a huge part of the side of the mountain blew away a few thousand years ago causing huge tsunamis (there is some debate about the details). The Valle de Bové has some fine cliffs revealing numerous layers allowing the history of eruptions to be traced back through thousands of years. There are also some spectacular dykes, like 10 metre high walls, where lava has been forced up through cracks in the surface which has then been eroded away (Fig 5).

Fig 5

Walking back, the scenery was most unusual being predominantly snowy white with contrasting patches of black windblown volcanic dust (Fig 6). A vin brulé was most welcome here in the mountain restaurant which we had to walk to as the road was an icy slide. Incidentally there is a chair lift to the summit and a small ski resort but the weather was too bad to get near it, being like Ben Nevis in winter.

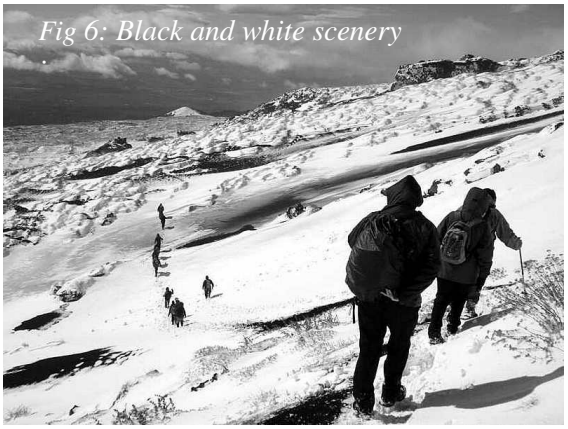

Fig 6: Black and white scenery

On the way back we were puzzled when the minibus stopped and we got out in the middle of a featureless area of an old lava flow. But behind the rusty road barrier was a small hole in the ground and, descending carefully, we found ourselves in a lava tube mostly tall enough to stand up in and about 4m wide, and in places squashed oval causing us to stoop, being careful of the razor sharp protuberances and the bats. It ran for maybe 100 metres (Fig 7).

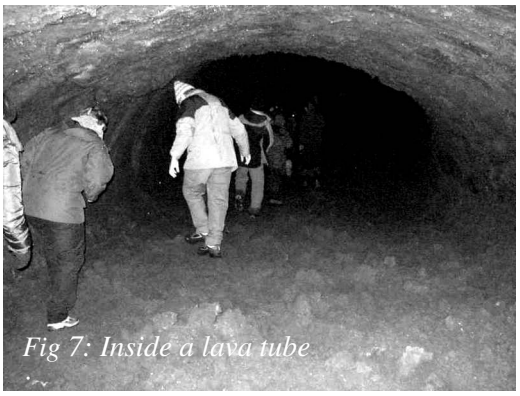

Fig 7: Inside a lava tube

That evening we walked around our hotel which stood within previous eruptions (1928 I think) which had poured in wide rivers down the hillside and narrowly missed it.

The weather had been so bad the ferries had not been running to the Aeolian Islands for several days. It is, after all, where one of Odysseus's sailors had opened the bag of winds with disastrous results. So we were up at 3:30am and shepherded onto our minibus to go to the port at Melazzo and find out what's going on.

In the event we caught a ferry at 7a.m. and headed for Stromboli (Fig 8) with a 1% possibility of ending up in Naples if we are unable to land! From the boat the distant Stromboli looks like a typical volcano with steam and smoke rising from a summit crater. But in fact there is no summit crater; the eruptions occur from an area about 100 or 150 metres below the top, down the steep western side which is the 'back' as you approach it from the Sicilian direction. It is hard to believe the sea is 2,000 metres deep here, and the mountain itself is over 920m high so in total it is nearly 3,000 metres high. It has erupted pretty well continuously for thousands of years.

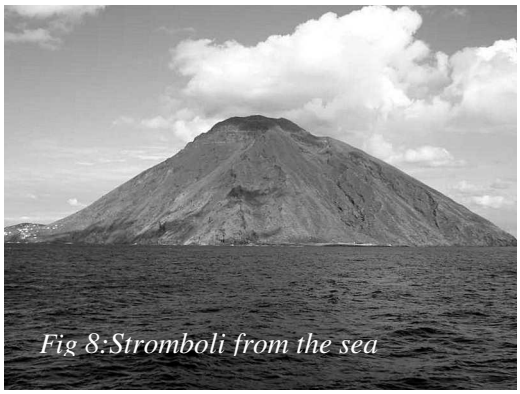

Fig 8:Stromboli from the sea

"Stromboli" (pronounced Strom-bo-lee locally) seems to be the name for an island, a town *and* a volcano. Here we were given a free pizza to make up for the missed breakfast, a bit of paper to sign to say our life insurance was invalid and a plastic helmet. Luca suggested the latter was just a formality as it would afford little protection from being hit by a large red-hot cow pat of molten rock.

In an orderly procession we steeply ascended the 3,000-foot high cone of black ash, arriving a little before dusk. The town was now a cluster of little white specs below us and round the corner loud, low, explosions were occurring every 10 or 20 minutes accompanied by clouds of steam, smoke, showers of red blobs and sort of squirting noises. We ate our sandwiches near a reassuring bomb-proof shelter while we watched the sun set in a red band over the sea. Although it had been hot and sticky down at sea level, up here it was cold and windy and all the fleeces, gloves and hats went on. When it was dark we continued the short distance to the summit and peered steeply down into the steamy gloom which was lit intermittently from below by a red glow. Eventually, after a lot of rushing and squirting noises, there was a deep boom and a huge shower of orange and red blobs of molten rock showered hundreds of metres into the air appearing above the steam clouds like a huge firework – stunning!

Visitors are only permitted a short time on the summit for safety reasons and so, after a quarter of an hour or so, we made our way down diagonally across a huge steep slope of black sand that went the whole 3,000 ft right from the top into the beautifully moon-lit sea way below.

Next day we moved on to Lipari, by hydrofoil this time as the weather had calmed down. From here we went by boat to Vulcano which is the name of the island, the volcano and this time I'm not sure if it's the town too! A steep climb took us to the rim at about 500m and, yes, there is a typical crater here. It is more or less circular, about a kilometre across (my guess) and higher on the other side (Fig 9). In fact the cliff on the other side has beautifully displayed thick and thin strata of variously coloured deposits from dark maroon to light yellow (Fig 10). Close by, thick clouds of steamy gas emerged from the rim and flowed close to the ground in the breeze. The view from up here was quite absorbing – Lipari is close by with hydrofoils plying in and out of the twin harbours and a chain of Aeolian Islands sit one behind the other off into the distance (Fig 11).

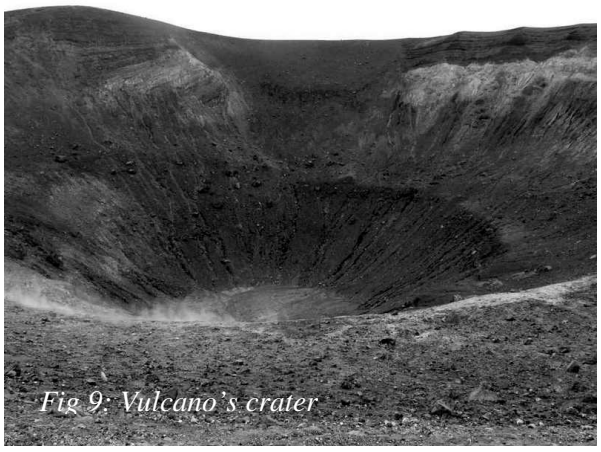

Fig 9: Vulcano's crater

Fig 10: Strata in cliff

Stromboli was visible some way off with its plume of steam and smoke just visible.

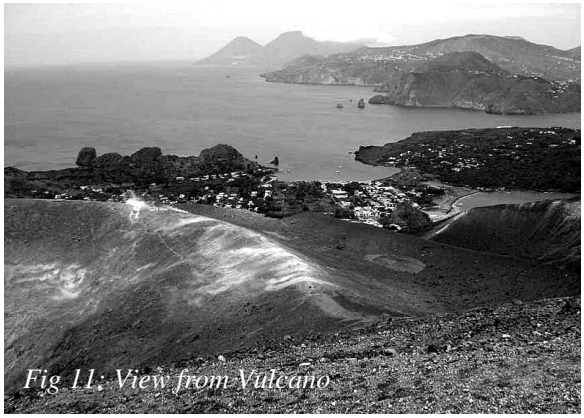

Fig 11: View from Vulcano

We clambered straight down the steep slope into the crater which had a perfectly flat bottom, having been caused by eroded ash settling there in the form of mud during rainstorms. A large part of the cliff here was ejecting gas from colourful bright yellow crystal-encrusted fumaroles dotted all over the steep slope causing an acrid smell a bit like sulphuric acid (Fig 12). We were warned to keep anything metal, particularly silver jewellery and cameras, well wrapped up in polythene bags.

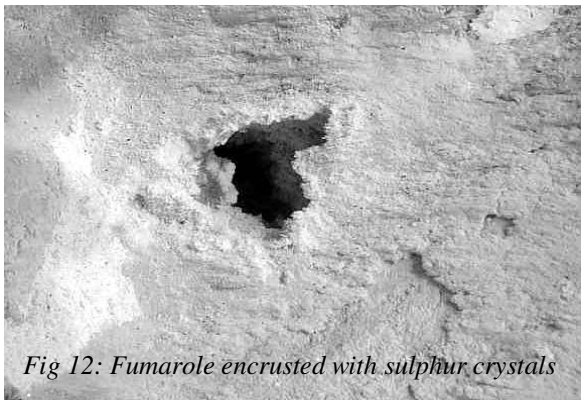

Fig 12: Fumarole encrusted with sulphur crystals

We scrambled over the face and took samples of the yellow crystals (which were bl***y hot and soon crumbled to dust) before climbing back up to the rim. Here we walked through the dense white clouds of acid smelling gas which emerges from yellow and red vents in the path with a quiet humming noise (Fig 13).

Like Stromboli, Vulcano also gives its name to a *type* of volcano. This time it is the type where the magma is viscous and retains gases at a high pressure for a few hundred years then releases it in a huge explosion. It has had 7 major eruptions in the last 6,000 years according to Wikipedia.

Back at sea level we sampled the mud pool. At first sight this is a small grey lake surrounded by a

Fig 13: Steamy ridge

paling fence. The surface appeared to be fizzing gently. For one euro you could go in and search for the changing rooms which did not exist. Having paid we had no option but to change into our cozzies in front of the not-so-daring spectators lined up behind the fence. As I said before, the weather was overcast, a bit like a British holiday. Well, this water was cold in a similar fashion. But we made the most of it (not too bad once you are in - must be nice in the hot Mediterranean sun). You could reach down to the bed and scoop up handfuls of the light grey mud and plaster it all over your body giving the skin a lovely silky feel. The bubbles of the now-familiar-smelling gas came from holes scattered randomly in the bottom of the lake.

You then go to a small beach for a dip in the sea. Again the water was chilly, but an inch or two below the surface of the gritty beach the temperature was scorching - certainly too hot to keep your hand in there. We had left our clothes on a low wall and when we came to change back we found it had been built on some of the vents and the hot gases had kept our clothes nice and warm!

On our last day we returned to Sicily and failed to trek to a viewpoint of Etna and the Aeolian Islands, having to give up after a mile or so due to torrential rain and thick mist. Etna erupts through a substrate of limestone and the plan was to view this contrast in scenery. But instead we visited one of the many local gorges, the Gola Alcantara, where a sign warns of many perils including "The river bed is often insidious with whirling waters and the sudden rising level of the water" and "The rocks of the river are slipperies and viscids". Here a flow of basalt had cooled into columns but unlike those on Staffa, these had moved as they cooled and so flow in all directions. Subsequently a river, diverted by the flow, had presumably found a fault line and eaten its way down to produce the gorge (Fig 14).

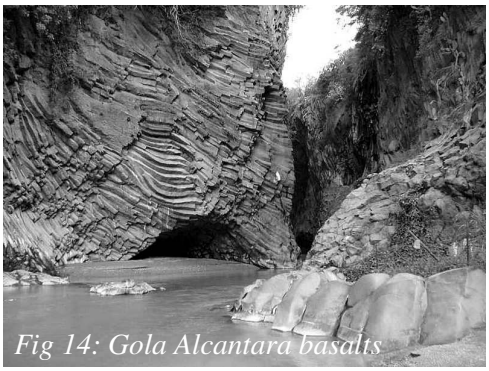

Fig 14: Gola Alcantara basalts

So there we have it, a really interesting week's holiday. I booked through 'Explore' and it is a trekking holiday but well within the capabilities of anyone able to do a day's walking in, say, the Lake District. I just hope you have better weather, and then you will be taken up to the summit crater of Etna. Beware of the mud pool though; your swimming costume will smell of sulphur for at least a year. Mine has.

Photos by the author except Figs 3 and 9 which are by Alison Chapman

WUHAN BONSAI GARDEN AND ROCK MUSEUM

Linda Drummond-Harris

Wuhan, capital of Hubei Province, straddles the confluence of the Yangtze and Han Rivers about halfway between Shanghai and Chongqing. It is a popular destination on many organized China tours and among its attractions is a curious bonsai garden and rare rock museum.

Its exhibits include a *Platybelodon* skeleton (probably re-constructed from several partial skeletons) an assortment of massive rocks and galleries of glass cases containing a collection of specimens. Many of these are unique and finely figured, often artistically prepared and mounted and some even exquisitely carved. All, of course, are labelled in Chinese, so identification (for me) was rather hit-and-miss. The most spectacular specimens in my opinion were the chrysanthemum rocks – white star-burst crystals in a black limestone matrix. The largest crystal on display was a giant chunk of quartz the size of a small car.

PLATYBELODON

Platybelodon ("flat-tusk") was a genus of large herbivorous mammal related to the elephant (order *Proboscidea*). It lived during the Miocene Epoch, about 15-4 million years ago, and ranged over Africa, Europe, Asia and North America. Although it thrived during its time, it did not survive past the Miocene and is now extinct. Some have speculated that it became too specialized and was unable to adapt to changing environmental conditions. It was previously believed to have fed in the swampy areas of

grassy savannas using its teeth to shovel up aquatic and semi-aquatic vegetation. However, wear patterns on the teeth suggest that it used its lower tusks to strip bark from trees. *Platybelodon* was very similar to the *Amebelodon*, another gomphothere species. Another possibility is that it used its shovel-tusks to dig for water in dry seasons. (*Source: Wikipedia*)

CHRYSANTHEMUM STONE

The Chrysanthemum Stone of Hunan, China occurs in the Qixia formation of the Lower Permian of the Yangtze River Valley. As the