

FINAL REPORT

Oxford University Cave Club Expedition – Julagua 2003 – Final report

Picos De Europa Mountains, Spain

7th July – 30th August 2003

Seeking to further the exploration and understanding of Pozu Julagua and the cave systems the high Picos de Europa mountains of northern Spain.

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Paul Garver – Treasurer
Sarah McCullogh – Medical Officer
Gavin Lowe – Safety and Rescue Officer
Dudley at Dragon Caving Gear
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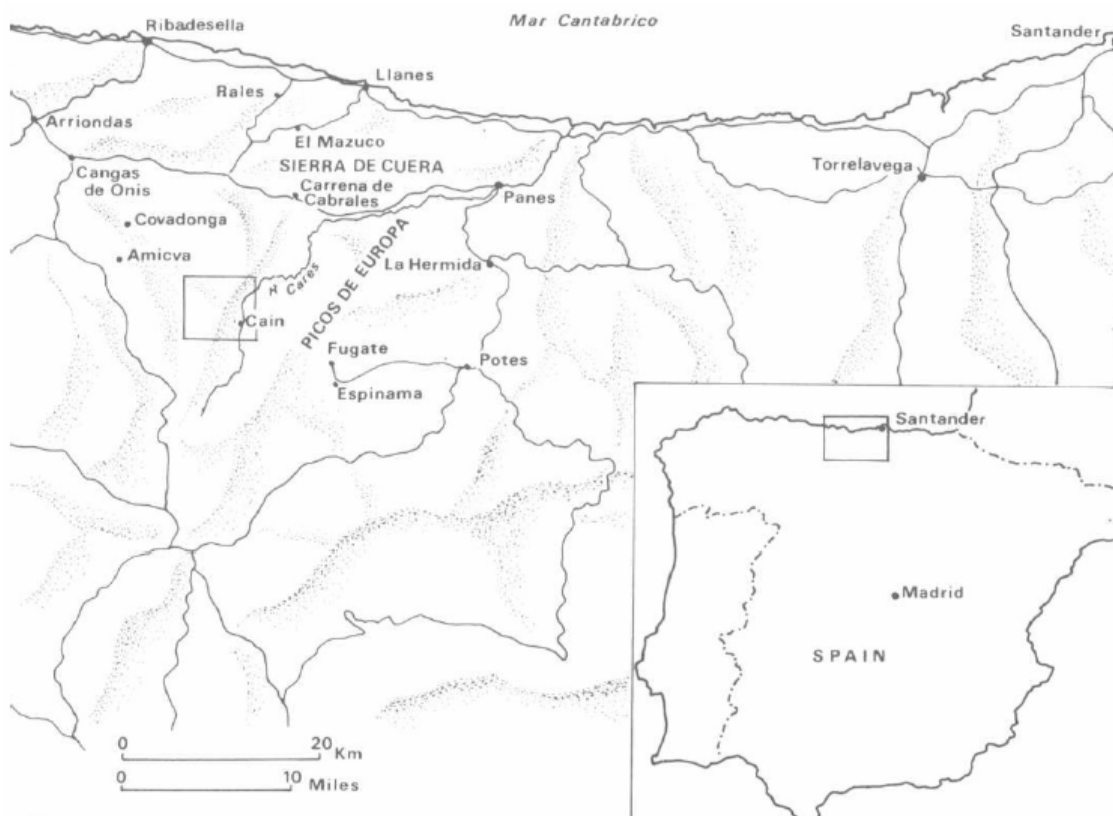
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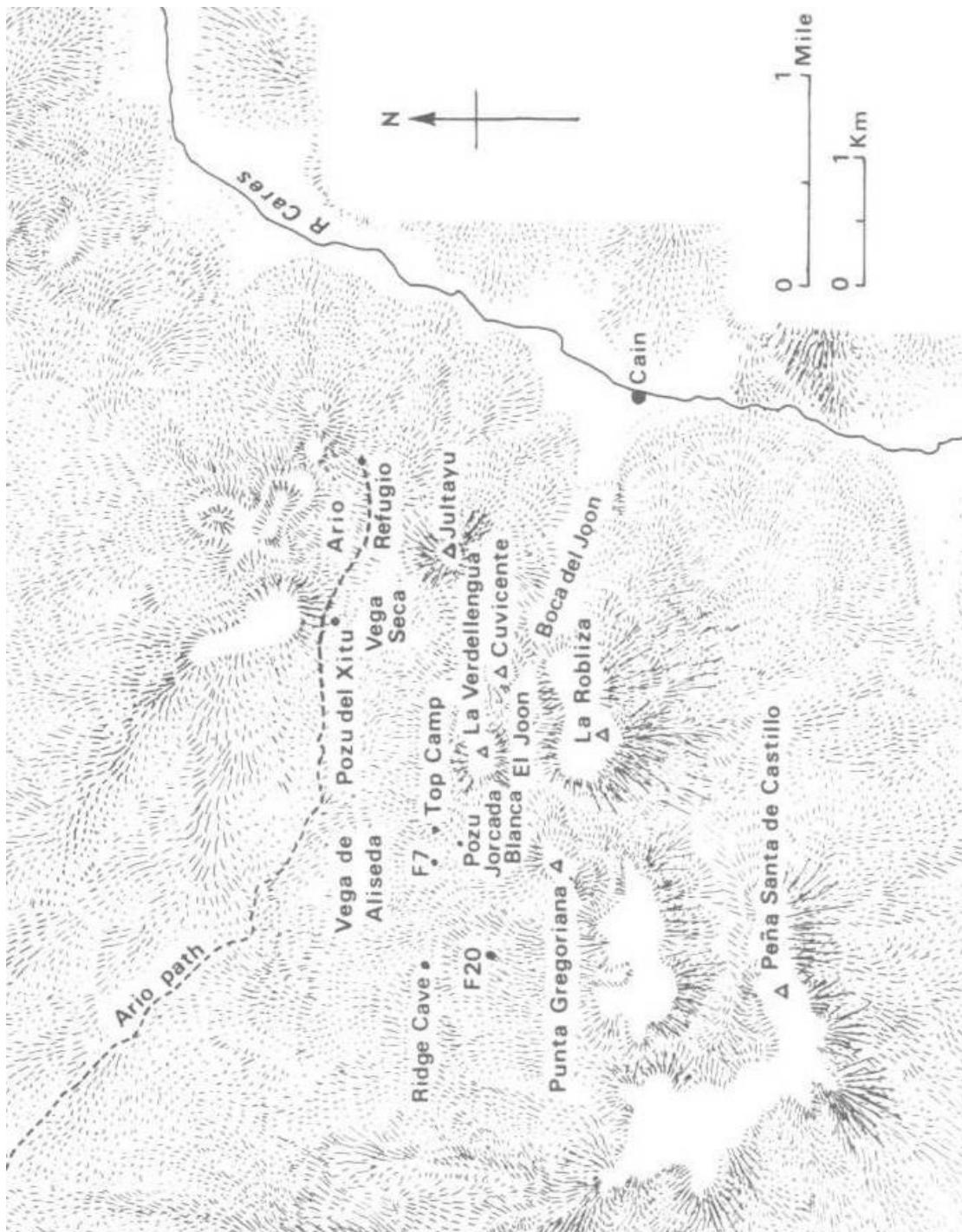
Abstract

The aim of the Julagua 2003 expedition was to further the exploration of Pozu Julagua (*née* Pozu Tormenta). Pozu Julagua had been explored to a depth of -721m over the two previous years. The survey showed that it was possible that Pozu Julagua would connect with a previously discovered cave, Pozu Asopladeru La Texa. The caves were approximately 150m vertically and 200m horizontally distant from one another. Reports from the Catalan cave group Sociedad de Investigaciones Espeleológicas claimed that there was an inlet in Pozu Asopladeru a Texa which carried a similar volume of water to the main stream in Pozu Julagua. Julagua 2003 hoped to establish a connection between the two caves, creating a cave system 1003m deep.

The expedition achieved this aim, finding a connection between the two caves at 18:43 on August 17th 2003. 25 members took part during 8 weeks in the field. Of these 5 had no previous expedition experience and 7 were not members of Oxford University Cave Club. It was a delight to witness the development of cavers new to expedition caving and to be a part of such close inter-club co-operation. 18 old caves were revisited and 9 new entrances were discovered. These include Pozu Chicago, approximately 150m deep and requiring further exploration.



Map 1: The Location of the Expedition's Field Area within Spain and the Asturias Region.



Map 2: Topography and major features of the OUCC area. Pozu Julagua lies to the east of the Vega de Arío. See figures 1-4 for further information upon the speleological features of the area.

Introduction

Julagua 2003 was an 8 week caving expedition exploring caves on the western massif of the Picos de Europa, Asturias, north-west Spain. The primary goal was the further exploration of Pozu Julagua (*née* Pozu Tormenta).

Since 1961 Oxford University Cave Club (OUCC) has been exploring caves in Asturias, north-west Spain. Initial expeditions moved inland from the coast, and in 1979 the expedition focus moved into the high mountains of the western massif of the Picos de Europa. This move has yielded considerable success, first in the discovery and exploration of Pozu del Xitu from 1979 to 1985 (including all entrances) and then in 1987 the discovery of Pozu Jultayu. Since its discovery the exploration of Pozu Jultayu dominated OUCC expedition aims until 2001, and even now, with Choke Egbert still to be negotiated, it remains unfinished business. Pozu Julagua ranks alongside these caves as one of OUCC's finest discoveries.

Pozu Julagua was discovered during the Xitu 2001 expedition. It was initially discovered when a draft of air blew out from the entrance and up someone's trouser-leg. The draught was exceedingly strong and demanded further investigation. The small hole from which the draught had emitted was rapidly widened until it could admit a person into the small chamber below, with the log book entry reading:

'Chris and I went looking at the small, strongly draughting hole in Orange Rock valley. Chris levered out some rocks with his wonderbar before it started thundering. Between hail storms and lightning strikes, I managed to insert myself in the hole and kick more rocks out of the way with my feet. It now goes! 20m+ pitch? Entrance is a bit tight. I'm going back tomorrow, stuff 1/5!!!' - From Pip Crosby's log book entry, 13/8/01

The portentous (and rather damp) opening of the entrance was followed by further exploration. When the expedition departed Pozu Tormenta, as it was then known, had been explored to a depth of -80m from the entrance to the head of what is now known as Thunder Pitch.

Although the discoverers were confident that they had found a sizeable cave worthy of extensive effort in its exploration more experienced cavers were sceptical of the prospects. No deep caves had been found in the immediate area and it was thought that renewed exploration of higher entrances might yield greater rewards. However, if the expedition returned to higher camps the new cave might not have been revisited. As such the 2002 expedition leader, Chris Rogers, decided that the, "Best lead in the Picos," as he styled it, required further exploration. He ambitiously decided that the expedition's main aim would be the exploration of the new cave, although provision was made for a change of aims if the cave became impassable. An acknowledged gamble, the decision to stick with Pozu Tormenta paid off as new discoveries were made and the potential depth of the cave became apparent.

The initial team, largely composed of undergraduates, was bolstered by the arrival of more experienced cavers as reports of the size of the cave and the need for more cavers reached the UK. Progress was spectacular. On the 5th August 2002 the 500m barrier was passed and it was evident that the cave continued. On the 12th August a final mammoth pushing trip departed, carrying some 250m of rope and intending to use it all. Progress was eventually halted at series of lakes, Los Lagos, -721m below the entrance. The three deep pools had no obvious easy route across and seemed an obvious place to end the 2002 exploration. All 3 team members reported that the far side of the pools was visible and that the draught was strong, suggesting that although flotation

aids were required the cave did not sump. This 26 hour epic trip was the only trip to reach Los Lagos until 24 the July 2003.

The success of 2002 and tantalizing reports of passage beyond Los Lagos meant that the return in 2003 was being planned almost as soon as the final deep pushing trip returned. Not only had a deep cave been discovered, but reports from the Catalan cave group Sociedad de Investigaciones Espeleológicas (SIE) indicated that the limit of exploration was aligned towards Pozu Asopladeru la Texa, a cave they had explored to a depth of –837m from 1995-98. Not only was the alignment correct, but SIE members recalled an inlet in la Texa which carried roughly the same volume of water as the main stream in Pozu Julagua. This predicted connection would have created a system 1003m deep, making it one of the western massif's largest systems and the second largest system discovered by OUCC. Although the approximate distance between the caves was only 150m vertically and 200m horizontally the depth was such that the full resources of the 2003 expedition would be required to make the connection. Pozu Tormenta was renamed Pozu Julagua in keeping with the Spanish practice of naming caves after geographical features (Cabeza Julagua being the nearest mountain peak to the entrance), and plans were laid for the return in 2003.

This report documents the events of the expedition; the successes and failures, the hopes and fears, and of course a smattering of the humour which helped everyone concerned to enjoy a fantastic expedition.

Section 1 comprises of the Thanks, Abstract, Contents and Introduction, followed by a list of expedition members, including time spent in the field and their UK cave club.

Section 2 continues the narrative of the exploration of Pozu Julagua. This follows on from the Introduction's potted history of the exploration of the cave, providing a more detailed account of this year's exploration. This account is drawn from the expedition logbook and from reports submitted by expedition members upon returning home. It is followed by a description of caves which were explored other than Pozu Julagua. The section ends with the expedition diary, a brief and precise account of the events of the expedition.

Section 3 addresses the Administration and Logistics of the expedition. This section contains reports from each of the expedition officers commenting upon their experience and noting points useful for future expeditions.

Section 4 contains the cave description for Pozu. This section ends with a survey of Sistema Julagua. It has been included at the end of the report to allow for easy reference.

The Appendix consists of captioned maps detailing the expedition's location in Spain and the precise area in which field work was undertaken. It also includes a short bibliography of works relevant to the organisation of the expedition, contents of the report and history of OUCC expeditions to Spain.

Expedition Members

David 'Don't call me Doyle' Legg (Leader)	DL	07/07/03 – 05/08/03 09/08/03 – 30/08/03
Paul Garver (Treasurer)	PG	07/07/03 – 03/08/03
Simon Goddard (Gear and Medical)	SG	08/08/03 – 30/08/03
Sarah 'Hard Caver' McCulloch (Medical)	SM	07/07/03 – 29/07/03 19/08/03 – 30/08/03
Chris 'Cow-fancier' Sinadinos	CS	07/07/03 – 06/08/03
Chris 'Vlad' Pedersen	CP	08/07/03 – 03/08/03
Rosa Clements	RC	08/07/03 – 28/08/03
Eleanor Packham	EP	15/07/03 – 29/07/03
Gareth 'One-Man-Bucket' Phillips	GP	07/07/03 – 30/08/03
Matthew 'Casanova' Balaam	MB	17/07/03 – 03/08/03
Tanya Savage (RRCPC)	TS	18/07/03 – 01/08/03
Neil 'Horse Titillater' Pacey (RRCPC)	NP	18/07/03 – 01/08/03
Ben Lovett (M)	BL	22/07/03 – 05/08/03
Claire 'Stormbringer' McElwain (M)	CM	22/07/03 – 05/08/03
Chris 'Riker' Rogers	CR	27/07/03 – 28/08/03
Simon 'Peri-anal' Flower (UBSS)	SF	08/08/03 – 21/08/03
Nathaniel 'Ethical' Mumford	NM	14/07/03 – 26/07/03
Fleur Loveridge	FL	14/07/03 – 26/07/03
John 'Gandalf the Grubby' Cooper	JC	03/08/03 – 15/08/03
Edu (SIE)	E	21/07/03 – 31/07/03
Marc Rubinat (SIE)	MR	21/07/03 – 31/07/03
Geoff 'Near to death as makes no difference' O'Dell	GOD	08/08/03 – 15/08/03
Chris Densham	CD	14/08/03 – 24/08/03
Al 'Hyams-Pybus' Wilson	AW	24/07/03 – 04/08/03

Key:

RRCPC – Red Rose Caving and Pot-hole Club

SIE – Sociedad de Investigaciones Espeleológicas

UBSS – University of Bristol Speleological Society

M – Morganweg Cave Club

All other members are from Oxford University Cave Club

Section 2 – The Story Continues...

The Irsome Necessity of Organisation

Given the excellent work done in 2002 the 2003 expedition preparation seemed refreshingly straightforward. The 2002 proposal was revised by David Legg, the expedition leader, and sent to grant-giving organisations and Oxford University authorities, stating the intention to finish the job in hand. It was likely that a strong, experienced team of cavers would be in Spain to try and find the proposed connection between Pozu Julagua and Pozu Asopladeru la Texa. A hard core of keen undergraduates would stay for longer periods of time, giving a sense of continuity to the time in the field. The proposals met with approval from all three of the organisations approached for funding, and balanced enthusiasm for a return to Spain with a serious appraisal of the particular risks inherent in caving at such depths.

Although the precise amount of funding given was not certain until early April, Simon Goddard, the Equipment Officer, was busy planning how to spend it in winter 2002. Rope requirements were considered and orders placed, a bulk gear-order of expedition members' requests was compiled and dispatched, underground camping equipment was collected and somehow the expedition's every need was catered for (including a road-worthy trailer). Overseeing the rampant spending was Paul Garver, the Treasurer, whose financial management ensured that whilst the expedition was fully equipped the early costs for individual members did not need to be raised to cover this. In spite of the expedition leader's early attempts at organisation the two officers ensured that the expedition departed well funded and fully equipped.

Although the gathering of gear went on until the day of departure the main task for the late spring was to ensure that expedition members were properly trained for the caving that lay ahead. Fortunately this involved lots and lots of caving in the UK. As well as single-handedly acting as quartermaster for the expedition, Simon took on responsibility as Medical Officer, with Sarah McCullogh. Working with Tariq Quaresh and the Oxford University First Aid Unit they ensured that all members received accredited first aid training, that two members received further specialist training, and that everyone had a first aid kit suitable for underground use. Gavin Lowe, Rescue Officer, took time off from his involvement in the Yunan 2003 expedition to run a rescue practice, particularly useful in teaching all concerned how time-consuming, cold and uncomfortable a rescue situation really was. Meanwhile the expedition leader busied himself by organising Single Rope Technique (SRT) practices in a gym. This training culminated in a 5 day stay in Yorkshire just before departure, giving members a chance to put those techniques into practice and enjoy some fine caving whilst they were at it. After 10 long months of preparation all that remained was to load up the trailer and pack off to Spain – the relieved grins on the faces of the committee members were evident, and well earned.

A Well Trodden Path

On Monday 7th July 2003 members of Oxford University Cave Club piled into a Land Rover, waved goodbye to Blighty and the attendant Equipment Officer, who insisted on watching to make sure the undergraduates didn't break anything. The Land Rover had kindly been provided by the Gordon Foundation and had been a major load off the minds of both the leader (because it meant the equipment could be taken to Spain) and the treasurer (because it meant he didn't have to find the money for a car). Furthermore the assorted drivers and alleged navigator (i.e. Dave, who couldn't drive but couldn't afford the flight to Spain either) were fortified by some of Planter's Peanuts, who had sponsored the expedition. Simon had arranged this as well, as the

peanuts made excellent cave-food (how Simon managed to do his real job whilst doing all this I'll never know!). The first hiccup was encountered in a supermarket carpark just half an hour after setting off, when it emerged that, true to form, Dave had forgotten his passport, which was languishing with his parents 200 miles north of Oxford. It is absolutely untrue that the Land Rover drivers had been taking bets as to whether or not he'd have remembered it.

Fortunately, this was the only serious problem encountered on the journey to Spain. Indeed, it only became serious when it emerged that the French had actually manned the border check-point at Calais, necessitating the use of English, Spanish, German, a Swedish swear-word or two and eventually some appalling French, combined with obligatory waving of ID and expressions of supplication (up to and including hands pressed together imploringly), for Dave to eventually convince the gendarme that he was not worth the trouble of detaining. The shaven-headed, unshaven, smelly, scruffy, incomprehensible Englishman was probably not a terrorist, and the others appeared to have him well shackled. Dave's long suffering girlfriend later ferried the absent document over from England, meaning that a repeat performance was not necessary on the return.

The drive through France was uneventful, with even Paris failing to provide the experience we had expected to come from a large Land Rover with heavy trailer being driven on the wrong side of the road by inexperienced drivers. Dave's navigational skills proved superior to his linguistic and administrative abilities and on the morning of the 8th of July the Land Rover crew were basking in the sun on a French beach. The chance for a few blissful hours of un-cramped sleep and even a quick dip further boosted high spirits, and hearts quickened with expectation at the thought of crossing the border into Spain and beginning the long, winding, beautiful drive up to Los Lagos from Covadonga. True to form, the weather on arrival was typically misty, but it was still possible to observe the jaw-dropping scenery as the Land Rover climbed ever higher up the twisting road. At the top, however, the idyllic reverie was somewhat shattered. A scramble from the Land Rover to the bar revealed the one true disappointment of the expedition; the bar had changed! The Bar Maria Rosa had been an OUCC staple, but gone was the familiar tarpaulin, replaced with real walls and a slate roof, complete with adjacent bill-board explaining how much the regenerative development had cost. Worse, they now shut up at 9.30pm, latest, and wouldn't let us sleep under their tables.

Early Days

The night of 8 July was spent at Los Lagos, where the enforced early night at least meant that we could get up early and make two carries up to our base camp at the Vega de Ario, about three hours into the mountains. The result was that by the evening a functioning camp had been set up, although the quality of the swift meal taken after the first carry nearly convinced some that they should stay and make the most of the Bar Maria Rosa, rather than risk the dinner at Ario. With only seven people in the field most of the next week was spent carrying equipment up the Ario path. Although this did boost fitness and offer the chance for plenty of healthy exercise in the great outdoors it did begin to feel like a slog after day 3, and with the camp well established and a regular supply train ferrying gear up from Los Lagos there was soon nothing for it but to go caving.

Accordingly the first caving trip of the 2003 expedition went underground at 1.45pm on July 12, with Paul Garver and Chris Sinadinos sharing the honour:

"I'm trying to eat just enough so that I don't feel hungry, but not so much that I'm sick. It's a fine balance." – Gareth on the first meal at Ario

“At last! After a year of faffing about in Britain I was back in Tormenta. A moment of foreboding as my harness tightened over my bollocks in the entrance chimney, and I was in! ... My first move was to drop my prussik bag down the entrance pitch...” – Paul Garver, logbook, 12/07/03

Everyone shared Paul’s relief that the preparation had stopped and the caving begun. The first trip rigged to the bottom of the Entrance Series, with Paul actually stopping to put in 5 useful bolts which had never quite been placed in 2002. The work continued on the 13th, with Dave and Chris S rigging down to the final pitch in Upper Tormenta Streamway. Their missed call-out was a reminder to all that the potential difficulty of the entrance should not be misjudged, and that the path from the Valley of the Orange Rock to Ario needed proper marking. Although annoying it was good to see that those at Ario responded in the proper manner, and demonstrated to first-timers exactly how a missed call-out should be dealt with on expedition.

The field team were bolstered on the 14th by the arrival of Fleur and Nobby, who added some much needed experience at the point when the cave, already deeper than anything that could be done on SRT in the UK, was beginning to require longer, more strenuous trips. It also eased the rigging burden placed upon Paul, who had rigged Balrog on the day of their arrival. Nobby’s first trip was with Chris S, with a mission to rig the behemoth pitch that is Saturday Night Fever:

*“Before you ask..**don’t**, just don’t... (18 hours later)...OK. It’s starting to take on that rosy odour or mud odour that comes with time and I’m now more inclined to talk about it.*

Before I start, a few words of thanks. To Chris for sitting in his brand new plastic bag and indulging in ‘arm exercises’ for three hours. A noble effort. Mentioned in dispatches – Paul’s sympathetic re-rigging of the entrance series. Good show.

*Entrance series was great. Rattled of the sides and got down to Balrog in good time. Bare Space is truly impressive and we even found SNF straightaway, which was the first obvious obstacle. But could I square the description with the pitch-head? Could I *heck*. Couldn’t work out whether the ‘climb down through car size boulders’ was the top of the pitch or just a prelude to the main event...So it was that I found myself dangling over 50m of hanging death thinking it was a ‘roped climb’, with no gear, whilst Chris bashed away in his bag trying to ‘keep warm’.*

And make no mistake, it is truly horrible. Bus sized rock balanced on bus sized rock followed by a slope of grey gloop. Bolts seemed to be anywhere that was scary apart from in the gloop itself – although I may have missed them.” – Nathaniel Mumford, logbook, 15/07/03.

[Chris’ subsequent failure to go blind suggests that the ‘arm exercises’ were entirely innocent]

The repeated re-rigging of SNF was to be a regular feature of the next few days, as it became apparent that a muddy rope through hanging death was not an enjoyable route (unless you liked being terrified by the prospect of uncertain death), and definitely not a suitable trade-route for regular passage into the bowels of Julagua. The eventual solution was to entirely ignore the old route and pendule across to a wide ledge which ran along the top of the giant avon. This traverse had initially been investigated by Fleur and Nobby, and subsequent investigation by Paul found that a gap in this ledge dropped directly into the main shaft. His subsequent rigging replaced 7 rebelays with one, sited 15m below the pitch-head and 80m above the floor! Despite simply noting in the log book, “*second one [hang] a bit long,*” he later admitted that, “I made damn sure I’d put a knot in the end of the rope before I went down it!” The pitch was later broken by a second rebelay, to allow the swifter passage of groups.

Meanwhile the main thrust of the expedition was onwards and downwards, towards the limit of exploration in 2002. With life at Ario now ticking over nicely the expedition had established a

certain rhythm. Teams of cavers (generally one experienced and one enthusiastic) would descend into the cave to rig clearly defined sections of between 150m and 200m at a time. This would be followed by a day of rest, and maybe a day of surface exploration or a carry from Los Lagos before another trip back to the depths. Fortunately this was largely done by committee (aka group observation of the pretty obvious) and there was no need to engage El Jefe's (the leader's) logistical or organisational skills. The occasional trip down to Cangas de Onis on the pretext of food shopping also offered the welcome opportunity to bathe and to enjoy some cerveza, rather than the cheap red wine that was the alcoholic staple at Ario (Marc Rubinat later told us that even some tramps wouldn't touch what we were drinking).

Eleanor: "Oh, this is the life, isn't it?" Dave: "Yes, freezing your tits off in a tumbled-down house." – debating the merits of camp life

By July 24 the 2002 limit of exploration was reached, 12 days after the first trip and within 2 days of the date given on the proposed itinerary. Camps had been established at the head of SNF and at Croco-Piggy, and Marc Rubinat and Edu had arrived. These two Spaniards were members of SIE, a cave club from Barcelona, and had been involved in a number of deep caving expeditions in the past, including the exploration of la Texa. They signalled their intent with a 30 hour rigging trip, without stopping to camp, on their first descent into the cave. This started on the 22 July, with Clare McElwain, Ben Lovett and Matt Balaam descending to establish a camp at the head of SNF, and ended on the 23rd. This had set up a three-phased assault upon the previous limit of exploration. On the 23rd Chris S and Gareth Phillips descended to leave the underground camp gear beyond La Frontera. Paul and Dave were then to descend in the evening, set up a camp and the rig down to Los Lagos (in the cave) on the 24th. This would pave the way for a second wave of Nobby, Fleur and Neil Pacey to descend on the 24 July, cross the lakes and begin the push into virgin territory, followed by Ben and Clare, who would relieve them and continue the push.

The Best Laid Plans ...

Count for nothing when you're dealing with unexplored passages far from daylight:

"Met Dave and Paul at the top of Enlightenment and then followed them past the Comedy Obstruction Barrier to the lakes. Climbed up above the crystal to a ledge overlooking all three lakes. The first lake was the longest and two and three looked a lot smaller and possible to maybe bolt around. Decided to abseil off the ledge and try a tension traverse to the second lake, rigged off a natural thread and Nobby placed a bolt for the main hang. Abseiled down to the water level and reached across to pull in to the ledge. Used a deviation off a noble to cross the second lake, placed a bolt and climbed up above it to a ledge over the third lake. By now we had realised the lakes were sump pools, and the only way on was up in the roof where a small hole could be spotted." – Neil Pacey, logbook, 24/07/03

Having been assured by those on the final pushing trip of 2002 that the pools were most definitely lakes, not sumps this was somewhat unexpected, not to mention rather disheartening. Fleur and Nobby were about to depart, leaving the expedition with only five cavers realistically capable of managing the bolt-climb needed to reach the hole in the roof. The first week of August was a point when the field team had too few experienced cavers present to seriously look for a sump bypass, and the exploration was in serious danger of coming to an abrupt halt if a bypass was not found quickly. Fortunately, the expedition had a secret weapon; two hard Spaniards and an electric drill, and when the news reached the surface on July 25 plans were swiftly laid for Marc and Edu to push the roof.

They duly departed on the morning of the 26th, armed with an electric drill and through-bolts, which Kiku, Marc's father, had carried up to the Ario Refugio (mountain refuge). The prospects were slim, and it seemed that most of the draught went above Mona pitch, well before Los Lagos. That said, if Marc and Edu were prepared to do a 30 hour trip to rig to the bottom who knew what they'd be prepared to do to push beyond the sump and on towards la Texa? However, the auspices were not good, as rain pounded the mountains for the afternoon and most of the night, increasing fears for their safety as we did not know how the cave would react to such a downpour. Having emerged after a sporting trip out on the evening of the 27th the news was relayed to those at Ario on the morning of the 28th. It was not good. The hole in the roof led to a small chamber, followed by a crawl, which had two holes in the floor. Marc had been into the hole which took the draught, and into which Edu couldn't fit, only to end up lying in water, hammering at hidden constrictions. Edu simply called it, "The big shit." Another possible route led into a rift in the roof, heading back above Los Lagos, but this was not promising.

Given the depth at which teams were operating and the time it took to conduct trips it was seriously possible that the rest of the expedition would be spent looking for an elusive, inaccessible bypass. With little time remaining before the departure of several members and a period in which deep caving was not viable the decision was taken for Gareth and Dave to descend and push the crawl as hard a possible. If this did not find a bypass another day was to be spent underground, evaluating all possible leads in the lowest section of the cave in the hope of finding anything promising. They headed down to camp Croco-Piggy on the evening of the 30th:

"At 9.20 am I awoke and checked my watch, realising I had slept through my alarm. "Time to get up!" I said to Gareth. "I know," he replied, "I heard your alarm go off but I couldn't be bothered to do anything about it." Cheers! (for the lie-in!) By 10.30 am we were back in our cold caving gear and underway. We bombed to the bottom, enjoying the fine shaft series which Gareth admitted was, "Much nicer than the top of the cave." Once the end of Mona pitch was reached the work began in earnest. I was anxious to look at the Long Dark Streamway of the Soul, hoping the bypass would be here and prepared to send another, more bolt-capable, team to look at a high-level route [above Mona]. Although much of the draught is lost between the top of Mona and the LDSotS and there appeared to be some high passage not necessarily connected to the streamway rift I didn't fancy an exposed bolt-traverse on the sheer shaft wall some 15m above the floor unless it was a last resort.

In the streamway itself I sent Gareth to look at Marc and Edu's hole whilst I looked for high-level tubes, boulder floors, anything which might yield new passage and the much longed for bypass. I was to be disappointed; much sketchy climbing revealed only the possibility of a high passage above a washed out sump, which I could not climb up to. Somewhat dismayed but a little unsurprised I headed towards Gareth and the Spaniard's ropes. Two wildly different accounts of this lead existed. My interpretation of Marc and Edu's trip...[was that the lead was] a bit tight, needing hammering but not implausible or impossible. However, when Ben, Clare, Neil and Tanya met them in the Maria Rosa they returned with tales of "the big shit" ...If this pessimistic view was accurate we would be forced back to the surface to send in a team for a long and dubious bolt traverse at Mona. Worse, I would be forced to eat the words of my optimistic, emphatic-declarative e-mail sent to England the day before. I had asked Gareth to go and look at the crawl as he is generally [actually] better at such things than I (having done Dallimores and returned to say, "It wasn't as hard as I expected.") But, when I met him he was not too optimistic. "I didn't go beyond the constriction. There's a bit of a draught, but I'm not sure that it goes anywhere. You wouldn't worry about it in Yorkshire, but down here...you might as well take a look." (Obviously a few more questions were required –Gareth can sometimes almost be too quiet). Not the most glowing recommendation. Nevertheless I grabbed a bolting hammer and went in.

A few blows at the constriction later I was ambivalent. It felt too tight to go anywhere, although beyond it opened up a little there was no major improvement. However, there was still a little draught, high-pitched noises resonated and low ones rang on. And it was the only real lead we had to go at before we admitted defeat. I told Gareth to go and inspect the other rope Marc and Edu had placed and to give me 45 minutes for hammering. 5 minutes later I thought "Bugger this," wriggled back into a small chamber and removed my SRT gear. Then I plunged head first past the constriction, which in the UK would have been part and parcel of such a crawl. 5m or so later a hole in the floor was reached. I neglected to go down it and squirmed over, only to turn a corner and pop out into walking passage. Directly ahead were a few muddy boulders, whilst to my left the passage sloped upwards. I went left, although it felt like it was heading back towards the sump. Shortly a muddy hole appeared in the left wall at shoulder height. From it echoed the thuds of Gareth on a rope. Vocal connection was established and I felt sure a bypass was near.

I headed back to the crawl and looked beyond the muddy blocks, then whooped with delight as I saw a shaft plunging away. Water could be heard and rocks fell for 2 seconds before bouncing for 4 seconds more. The shaft looked as good as any of the preceding series (FINGERS CROSSED!), but was beyond my skill to bolt (I had only ever placed 2 bolts. Neither is now used in Julagua). I hurried back to my vocal connection with Gareth, to see if it could be connected to form a more viable trade route through the bypass (the crawl was unsuitable for SRT kit, never mind tackle). We established that my mud slope/squeeze emerged 6m or so above Marc and Edu's highest bolt. Excitedly I told Gareth to go and chop off 20 m of rope and get 2 hangers and maillons from the gear deposit, then head through the crawl to meet me. "What's the point?" he asked, "if we don't have a bypass." In my excitement I had forgotten the key fact!" – David Legg, logbook, 31/07/03

The discovery of the bypass was a real boost to expedition morale, and made the prospect of achieving our stated aim much more likely in the time that was left. The day after Paul and the newly arrived Chris Rogers (replete with stinking hangover) descended to the bottom to survey the bypass. A few more days, a few more cavers and a little luck were all that we required to reach la Texa. Alas it was not to be that simple. On August 3 the Land Rover headed off to Cangas crewed with a couple of cavers who were departing and one to drive it back up. Suspicions were aroused when, on the way down, it became impossible to change out of 2nd gear, but Chris S knew something was up when, preparing to return to Los Lagos, it became impossible to put the Land Rover into gear. A swift call to the Automobile Association (AA), care of the Gordon Foundation's excellent insurance coverage, and the expedition's only transport was soon being loaded onto the back of a Spanish tow-truck.

The upshot of this was that Dave, who had been planning to take a quiet break by the seaside with his passport bearing girlfriend, spent a not entirely restful few days visiting a garage in Bilbao and phoning the AA, the Gordon Foundation and cavers in the UK. The situation was complicated when the accredited Land Rover dealership in Bilbao decided that the problem required a complete strip-down of the gear box to establish the cause. The cost was well above the insurance excess and the decision was taken to ship the Land Rover back to the UK, where it turned out that the problem was a loose gear-stick guide-plate, which was fixed with the application of a one inch screw! Thankfully the Gordon Foundation had arranged excellent insurance cover and the cost of a hire car was included in this package. Unfortunately only Simon Goddard was old enough to be allowed to drive it, although he was remarkably happy when handed the key to and sole use of a shiny, sporty Renault Laguna.

Whilst the transport crisis was being resolved there were too few people at Ario to allow for deep caving, although Gareth and JC managed to undertake a trip on the 4th, rigging the 40m pitch beyond the bypass to find a streamway, probably different to that from the sump, cutting into a

clean-washed gully and leading to another pitch. With no time to rig it they returned to the surface to await reinforcements and spend some quality time shaft-bashing (exploring cave entrances and the upper reaches of caves). This had been an ongoing feature of the expedition, and had included exploration in the Cabeza Muxa area, a dig in Pozu Jenga (a cave last seen collapsing on an OUCC caver), and the discovery of Pozu Chicago, a cave beyond the valley of the Orange Rock and on the south side of the Valle la Texa [see below].

Onwards and Downwards!

By August 11 the expedition was sufficiently bolstered to return to the bottom of Pozu Julagua. The arrival of Simon Flower, Simon Goddard and Geoff O'Dell, and the return of Dave from his one restful day on the beach (Dave also managed one restful night on a beach when there were no spaces in any of the guest-houses in Llannes. Unfortunately, he had to move on at 7am in case the police found him), meant that deep trips were now viable and could be properly supported in the event of a rescue situation. Simon F, Geoff O'Dell and JC departed that evening to push for the bottom:

“Trip began with me ominously booting off some choss onto JC waiting some distance below, but aside from groping about blindly in Area 4 and Bare Space was otherwise uneventful. Arrived at camp (miserable) at midnight. Chucked a few rocks about on the ledge trying to make it more homely, and built a dry-stone wall a round the windy ledge to create a 3rd bivvy site.

“Quite Remarkable! Simon’s snoring can even drown out the noise of the waterfall at bottom camp!” – Geoff O’Dell on a good night’s sleep

Slept through alarm next day (deliberate?) before clambering into wet gear then off down the beautiful cascade series to the sump bypass.

Whilst JC fiddled with the rigging on Pearl pitch I potted over to the top of the following, undescended pitch to begin rigging with the motley selection of ropes and kit left lying there. The small stream is seen to descend in the rift before cascading of down the pitch. The need to do the same can be avoided by traversing in the rift then dropping from a Y-hang (bolts) onto a wet ledge before the remainder of the pitch.

Spent rather a while here scratching my head wondering how to go about rigging it, but the walls are like dinner plates loosely stacked on one another and all attempts at bolting resulted in large slabs disappearing off into the void. Eventually found somewhere reasonably stable, only to find that the rock shattered when the bolt was half in...

[at the bottom – reached by way of a natural thread-belay and comedy knot pass just above the floor] the little streamway continued for 20m or so before rounding into a significant discovery; a 10-15m diameter chamber with an aven roaring off into the distance above. A Tormenta sized streamway enters here.

Excited and cold we ran on down the stream. The character of the cave has changed again. Now its 4-8m wide, bell-jar shaped with no roof. Gone are the nasty catchy projections of the upper streamway; instead the walls are now smooth polished black and white marble. Damned aesthetic.

We followed this, past a perfect camping spot, for around 180m round meanders and past oxbows to the head of a 20-30m pitch. Here time dictated we turn around and survey out.” – Simon Flower, logbook, 11-13/08/03

Despite the renewed efforts the connection still hadn't been made, and there was serious concern about whether it would be possible in the time remaining. The de-rigging of cave and camp was going to be a mammoth task, and the manpower was limited. However, as JC and Geoff departed Chris Densham arrived, lured by the e-mailed pleas for more experienced cavers to come out and help establish the connection before we were forced to withdraw. It was clear that it only possible to launch one final big pushing trip before we would be forced to de-rig and admit defeat.

"The fateful date was August 16th. Chris Densham, Simon Flower and I were due to head underground on one push de-rig trip before the camps were packed up and expedition prepared to head home for another year. It was an absolutely miserable day. The clag hung heavy in the air and was penetrated only by a persistent and driving rain which poured through the torn tarp, dripping squalidly on those inside and dousing those who went outside. The trek to the toilet cave was even less appealing than usual. Furry suits brought back for a wash and dry were moistened, and in the cold and damp moral sank. The cunning old git Chris slunk off for a kip, the only sensible thing to do, whilst I stitched, cursed my Meander and contemplated packing it in for a beach holiday. Needless to say that just as we reached the cave a glorious evening emerged." – David Legg, BCRA Conference lecture, September 2003, recounting the misery of August 16

"The rain rewarded us with a tremendous trip down the streamways, the rigging keeping you comfortably away from the water in most places. Croco-Piggy campsite was a disappointing end to the day, but it was the best accommodation in the area.

17th August. Set of down my fortuitously drippy proboscis pitch at 11am. Los Lagos and the crystals were almost as beautiful as last year. The sump bypass, however, was foul. The main streamway regained in spectacular style at Battle of the Deities. A grand streamway reached the limit of exploration at the head of a 10-15m pitch. I climbed 10m up the right hand wall to reach the phreatic level, with the roof another 5m above. However, there were no signs of the phreas heading off in any direction other than the current streamway. Unfortunately it was not possible to check everywhere due to the lack of a floor.

Dave put in a natural for a c5m above the pitch head, then I traversed along the muddy right-hand wall for 5m to put in a bolt on the left-hand wall, descended 5m then put another bolt in level with the lip. Lovely 12m pitch landed in a 5m wide chamber. After only 15m of narrow rift the water cut its way down another pitch. A thrutch up reached a balcony to the right of the cascade. 2 naturals and one bolt, then Simon descended the pitch. After 15m he put in a bolt, then a wire, then another bolt, to keep away from the cascade ramping across." – Chris Densham, logbook, 16-19/08/03

"As Simon began to bolt myself and Chris sat in a bivvy bag and speculated.

"So what exactly are we looking for, Dave?"

"I'm not sure. Hopefully we'll hit a bolt or something. They left ropes in down here so there may be something visible. I know it's big and very vertical, with not much water higher up."

We both looked out at the large shaft we had hit. It was big. It was vertical. The only obvious water was that we had come in with. For a moment we looked at each other...

"So do you think..."

"Could be..."

20m below Simon reached a boulder floor in the rift and cried rope free." – David Legg, BCRA Conference lecture, September 2003

"He called Dave and me out from our bivvy bag on the balcony, and we followed him down, finally stepping across to a large false floor of boulders wedged across the 5m wide rift. While Simon climbed down between the boulders I stepped over the top and spotted, "A BOLT!!!"...A

pretty blue hangar on the left-hand wall! Almost exactly according to plan! The la Texa pitch had landed on exactly the same false floor, which was a relief as the far wall of the pitch/rift was 8-10m away, and we could easily have ended up descending a long way on the opposite side of the shaft to la Texa.

“After a brief celebration we returned to collect the survey tape from the head from the head of the first pitch – Fenris – and surveyed down to the connection at the bottom of Ragnarok. Dramatic though the route was we could not see it becoming a popular exchange trip and so we derigged to the top of Pearl pitch. Three fat tacklebags and three weary cavers dragged back to camp between 4-5m, leaving two bags behind at Los Lagos.

18 August. Simon felt trouble brewing in his bowels, so set off at about 10am. Dave also had problems with his nether regions – bad bullock rub. So while he headed off for SNF at about 4pm I, having the only fully functioning set of tackle/intestines, returned to collect the bags from Los Lagos. Returned for Pasta ‘n’ Sauce, then set off from Camp Croco-Piggy at 11pm. Total and catastrophic tackle-bag failure above D pitch, I reached SNF camp at 5am for more grub and pit.

19 August. Two cavers and four fat friends set off reaching surface at 9pm. While Simon had showed good predictive powers with his lower intestinal tract problem, Dave was not quite so skilled. Having helped me haul out the bags from the entrance, I heard him cry from the goat shelter. This was not unusual since his balls had chaffed raw on the way out. However, this was different. As I reached the goat shelter I looked up and saw him standing bullock naked with a piece of toilet paper wedged between his buttocks. I noticed a nasty smell and a large pile of turds, and a huge mound of used bog paper outside the entrance. Delightful. Chris R and Pip arrived from Pozu Chicago, and after Dave had made futile efforts to ignite his paper pile we headed back to Ario for dinner and Vino Collapseo.” – Chris Densham, logbook, 16-19/08/03

With the connection made at 6.43pm on August 17 it might have been assumed that the hard work was over. Instead, the real tough stuff was only just beginning. With the Land Rover out of action we had just seven days to completely de-rig the cave and camp and pack the trailer so that it could be packed on the back of a pick-up truck on the morning of August 27 and shipped back to the UK. No rest for the wicked, and with a shortage of people (Simon Goddard and Simon Flower were both out of action, Dave’s balls meant he could only cave every 3rd day and Chris Densham was departing on the 24th) there was a lot of hard graft to be done.

The Horror, the Horror!

An intensive four day plan of action was swiftly formulated, bringing to bear every available caver on the mammoth task. Whilst Chris D and Dave recuperated the newly arrived Pipa Crosby and Chris R were to descend for a two day trip, de-rigging back to Camp Croco-Piggy and leaving the rope in piles at the bottom of SNF. On the 22nd Chris D, Gareth and Dave were to descend and de-rig the camps at Croco-Piggy and SNF, as well as pulling out all the rope and gear from Croco-Piggy to Area 4!

“As they [Chris R and Pip] shuffled up the cave, laden with gear, the next wave went down. Camp was packed in an hour and a night spent at Saturday Night Fever, where the pit-sets placed there finally proved their worth. The rope was paella’d up from the bottom of Saturday Night Fever to the head of Balrog, and when all was packed at the top of this pitch 9 tackle sacks and 8 darren drums were shared amongst three people. The arduous work of shifting the rope to a suitable paella point and lugging the bulky camp gear was made more difficult following a wild goose chase after a lost tackle sack which turned out to be Chris Densham’s prussik bag, sat safely with

the rest of the gear. The task was made more difficult by my increasingly painful harness rub. Just 50m below the surface I found myself forced to abandon 2 tackle sacks as every prussic step elicited a yelp of pain. Upon reaching the surface I tore off my gear and was in such pain that walking proved impossible. As the sun rose I took a tramadol and slowly drifted off to sleep. The rescue runner who came bearing pills and cake was much appreciated.” – David Legg, BCRA Conference lecture, September 2003.

With some of the rope piled at Area 4 a trip on the 24th was intended to paella all the remaining rope out and de-rig the entrance series. The four fit cavers, Chris R, Pip, Rosa Clements and Sarah McCullough, were pointed at the entrance with orders to do their duty, damn them. Unfortunately, an inopportune knot-failure meant that half a paella pile was left at the bottom of Camera pitch. The only thing to do was haul it out and then storm down the misty mountainside carrying as much gear as was inhumanly possible. Chris Rogers and Gareth got the honour (rigour?) of being the last people to descend into Pozu Julagua:

Sarah: “I want to go somewhere where there’s eternal night.”

Gareth: “You mean you want to go caving?”

“Well, five hours after getting to sleep after last night’s derigging and time to finish the job. A quick chop of the rope made things much faster and we had an efficient trip.

Some two years and three expeditions after we stumbled on Tormenta it’s time to say goodbye, perhaps to the Picos (for the while at least). The cave’s given some brilliant trips, some long, arduous and painful trips, and some brilliant long, arduous and painful trips.

Let’s hope we find more like it!” – Chris Rogers, logbook, 25/08/03

Who can argue with that? All that remained was to load up every available crevice of rucksack space and lug what remained at camp to the waiting trailer, where Simon G was busy checking gear in and examining the mangled state of his once-shiny kit. At 1pm on 27/08/03 Ario was finally deserted for another year, and by 5pm the trailer had been loaded onto the back of a pick-up after a brief discussion convinced the driver that trying to tow over one ton of badly packed trailer down steep, windy roads was not a good idea. All that remained was to enjoy a final meal, wave good bye to the flyers and clamber into the Laguna for a flat-out high speed burn to the UK, all grinning manically and with Dave drinking everything in sight. Someone, somewhere, might just have liked us.

There's More to Caves than Deep Bits

Whilst the deep caving was in progress the first act of exploration in Julagua in 2003 took place 'only' 100m below the entrance in Breeze Blocks Chamber, by Dave, Gareth and Chris S on July 20.

NEW STUFF! Breeze Blocks chamber, along the right wall of Area 4, was one of the obvious unpushed leads from 2002. The chamber had been subsumed by excitement over Troll Chamber and the phreatic links to Singing in the Rain, and featured only partly on the survey. I had been planning to look at it for several days, and went down with an AM call-out, 125m of 9mm rope and a fair bit of rigging gear which I intended to use on a muddy climb I found last year, which I assumed dropped in at the top of Breeze Blocks. Quick and painless in, a rope was left on a traverse over what was once a big hole (now filled – some boulder movement has occurred above Singing in the Rain), and the route through Magic Tree Passage was fine. I decided to let people explore and headed up the chamber. Meanwhile Chris went down only to spot Chris Pedersen crossing Area 4 to Mostly Mud Café – a useful connection and a convenient way of killing both Breeze Blocks and the right wall of Area 4. All that remained was to be cold and survey the huge boulder collapse. Mission accomplished (and not even a comedy 190° clinometer reading to slow us down).

David Legg, logbook, 20/07/03

Back to the Black

Simon Goddard had only just returned to caving after enforced absence following a major operation. This is the account of his return to expedition caving.

First trip for me, and at the moment the only trip as I am not feeling at all fit and not in the mood for caving. But Tormenta to Area 4 here I come. Our plan was to go to Area 4 and off to Drums in the Deep. I was being particularly crap and managed to get completely and utterly stuck on the very first deviation. After a lot of swearing, huffing, puffing and removing the deviation from the wall, removing the stop from my harness I was finally off down Tormenta. First time in Tormenta since 2001 and the initial find.

Past Doyle's Camera and through Velcro Squeeze (still as awkward as before). I had not been past Velcro pitch before. Into new cave for me. Mornflake Creek was interesting. Nice to see that the cave is still well and truly going. Into Area 4 for a quick drink of water and then on past the entrance to Troll Chamber. Rapunzel pitch must have been interesting to rig last year as there are no naturals at all (well safe, anyway). Rosa put in the first bolt and then it was me for the next two. Rigging was rather tight as I had managed to drop the end of the rope down the pitch and it had caught on something lower down. Rigged with a tight deviation at the top and then Chris R rigged with a y-hang after I was at the bottom.

We spent a short while looking at Drums in the Deep but did not proceed to rig any of it. It looks like it will be a bit of a bummer to rig. It was back to Area 4 where we generally made out way out. All in all a great first trip and glad to be caving in the Picos again.

Simon Goddard, logbook, 13/08/03

In the Deep Places of the Earth

Matt Balaam and Chris Sinadinos were both new to expedition caving, but took to Pozu Julagua like pasty white things that live under rocks to, well, holes in rocks I guess. Given the need to maintain supplies at the pushing front they jumped at the chance of a trip to the front.

CHRIS: Well – just got back from THE TRIP of our expedition – a journey through to the bottom of the cave – Pozu Tormenta tamed. Matt – the man who wouldn't even ~~get~~ go through the entrance a few days ago and Chris who had caved a fair bit over the past few weeks but had hardly done SRT before and...but teamwork got us through in the end.

Everything went to plan – got down to the lakes by Saturday evening (saw Marc and Edu rigging the bolt-climb) and climbed back up to SNF by 2am Sunday(ish). Slept in camp for few hours and were out by 3pm.

Phrases of the climb out included, “ohh...my bloody knees” (Matt), “Jesus, I'm totally f**ked” (both of us) and “Matt, did you just take a photo 'cos I'm seeing flashes” (Chris).

Matt's innate fear of tight squeezes was at times blown to smithereens by his daring “stuff my body into that damn hole” tactics – particularly impressive was his dealing with Cannock crawlway on the way out. Chris – “I saw him contemplating probably one of the tightest, arsehole squeezes – made worse by its height off the ground. In a second, he's through. Where his head was a moment ago are slimy wellies. The rock seems to give way, as if it realises that to get in this crazy bastard's way is not advisable!”

Matt was a real bastard with his camera. He kept catching me off guard with his damn cunning photographic tactics. On one occasion – “Chris, I'm going on to the next pitch,” he shouts from the head of the ledge I'm prussiking towards. OK. Next thing I know he's clicking away, framing me looking pissed off on the 500th pitch of this endless climb out...worst of all, he got me in my most vulnerable moment. I finally get to the entrance, haul myself out into the light with my last ounce of strength, find the final ledge. Ahhhhhh...my moment of triumph. The natural light on my face, I can relax and breathe in the air of victory. Then this intrusive voice cuts into my dulled brain – “Hold it! I gotta get this on camera!” But by this point I don't really care. I let him click away thinking, “Who gives a shit – I'm out!!!”

MATT: The lower sections of the cave became very remote past Croco-Piggy. By the time I had got to the 9mm bungee cord rope [on ‘Til Hil Freezes Over and Retribution] I was ready to turn around and make my way out. Chris forced me to carry on and at one point he was extremely pissed off [Chris – I wasn't pissed-off!!! Just concerned! (*so that's all right, then – ed.*)] that I had these doubts. Walking through the Long Dark Streamway of the Soul was weird and reaching the Spaniards at the bottom made our day. They seemed in good spirits and were drilling as we left.

Prussiking seemed to go on forever and by the time we reached Saturday Night Fever we were both needing sleep. Slept from 3am – 10am.

“Ahhh...now I can spend the next week reading *Beneath the Mountains* and thinking, ‘I'm that hard.’ – Matt

Balrog was a bitch of a first climb straight after a good night's sleep. By the entrance series my legs had given way, and as I write my knee joints are sore. An amazing view in the entrance series of the light pouring through the first pitch. Something we had not seen for 29 hours. So happy and so pleased with our achievement. And I felt every one of the 721m through my harness.

Chris Sinadinos and Matthew Balaam, logbook, 27/07/03

To Photograph the Mighty Balrog

Not all the activity in Pozu Julagua was deep pushing. Several other trips went down, and Ben Lovett, a keen cave photographer, soon decided that Balrog was well worthy of his attention.

Slipping down the ropes on the initial rift section of the Balrog, space expands beneath your feet and the view of blackness just gets better and better. The final hangs against a wide flat wall, with inky blackness to your right and cascading water to your left are certainly a highlight of the cave. Hanging, waiting for the rope below me to come free I watched the gently rotating bolt for a while, decided it wasn't about come out and twisted round to admire the view. Behind me a slope of house sized boulders stretched up and the top of one was nearly level with me. A plan formed. If I could scale that boulder I'd have a chance to photograph cavers descending a big pitch from a horizontal viewpoint rather than straight up or down as is usually the case.

Back on the surface I enthusiastically outlined my plan and succeeded in co-opting Claire McElwain and Neil Pacey into accompanying me. It was I warned them, likely to be an unmitigated photographic disaster. I'd no experience of photographing big pitches, my flashes were all quite small and the more I thought about it the more improbable it all seemed. Still in for a penny.

Warm up shots were taken on Subtle Knife and some safe shots in the streamway to make sure at least something was viewable and then we were there. Gavin Newman has his radios but we had our whistles and a carefully worked out code. I'd go down first and find a suitable stance to set up, then one blast would instruct Claire to start down the next would stop her at a suitably artistic point and another would be the cue to fire the flash and then move on.

The view from the boulder was awesome and there was even a drip free spot to set up the tripod. Three blasts later and the pitch was lit up for the first time, squinting through the camera as the flash fires the previously black view finder actually shows something and it seems to be in frame. I get four fairly evenly spaced flashes on one frame (this is the shutter lock open, bit of rag chucked over the camera between flashes school of photography), and then it's Neil's turn and a second frame. All seems to be going reasonably, no dropped flash guns and I haven't kicked the camera off the top of the twenty metre high boulder it's perched on so, so far so good.

Leaving the camera on its tripod to face its chances with the drips and falling boulders we head on down to camp for a hypothermia busting brew. This way we can get two more exposures on the way out and indeed with uncharacteristic smoothness this goes to plan too. Even the arrival of another team at the pitch head fails to put a spanner in the works.

So by now I can practically see the next *Descent* front cover.

Three weeks later and the little green box from Fuji processing drops onto the floor. Subtle Knife looks good, so does the streamway, I sneak a quick glance before popping it into the projector, there are indeed four flashes present in the photo.

So *Descent* front cover, I don't think so; Underground Photographer, I wouldn't insult them; the Saharan camels caving association monthly newsletter might take it a pinch though.

Let's just say, it was a learning experience.

Ben Lovett

It is an ex-Land Rover...It has Ceased to Be

Despite the help of the Gordon Foundation and the AA, the loss of the Land Rover was one of the most challenging incidents. Chris Sinadinos describes breaking the expo. transport.

Battered but not severely bruised, I entered the 5th week of the expedition and climbed into the landy with Al, Vlad and (luckily, as it turned out!) JC. The former guys were heading off home (as I would be in a few days time) and the latter old lag was just arriving to take the reigns for the really serious pushing stuff. Anyhow... he, JC, decides to come along to Cangas to save walking on up hill alone, and off we go. Zip off to the town, drop the fellas off for their bus with a full 30 mins to spare, perhaps stop for a quick cerveza and be back at Los Lagos for an early evening climb back to camp. Hurrah... ...in theory.

First thing I noticed was that the '3rd Gear From Hell' seemed especially reluctant to comply with my struggling arm as we left the car park... okay, no problem – I'll have to make do with 2nd. Hold on, that won't go in either. Righty-o – accelerate and go for fourth. Errrr.... No, coz the bloody thing isn't in gear any more. Hence, a huge rev while I feel the normally

These cows are really attractive...I was tempted by one the other day." – Chris explores his bovine infatuation

stubborn and stiff stick go as limp as Dave Legg's prostrate body before 10am on the average morning. Darn! That's not good! 'You broke the landy!' already ringing in My ears as I imagine the others reaction to this new vehicular episode. Anyhow, we are half way down the hill by the time we realise that something is certainly wrong. We have managed (somehow – don't ask me!) to find 2nd gear and are revving slowly and boisterously down the hill. People stare. The palms of my hands clammy with sweat. JC is a calming influence but two guys depend on us to make it to Cangas in time for their coach. Thankfully, a highly dodgy mid-flight gear shift (JC's manoeuvre was quite extraordinary and I don't think I could describe it sufficiently even if I wanted to!) we found 4th for the open roads and made it to Cangas with the necessary spare minutes to catch their bus. Phew! That's sorted then....

Well.... Not quite. With their parting words, it was struck home to JC and myself... 'Good luck with the Land Rover and all. Bye.' Yes – the landy. Seemingly having performed its final duty, it effectively died on us. We left it in the usual car park and hitched a despondent ride back up to Los Lagos with a nice Spanish couple from Madrid. Not even their charming interest in the 'espieliologie' we were involved in and the fact that we didn't wait for ever for them to come along completely lift my sprits. Home in a few days or not, was the hard work of the past few weeks going to be undermined somehow but this minor catastrophe? There was a lot of doubt. Made it up to camp with an hour to spare before dusk. Made my report of events and left it to the others to sort out. The next day would be my last at the expo and the last thing on my mind was another trip to Cangas.... As it turned out, the only available driver (Gareth) was scheduled for a big underground trip and had to be spared.

Tormenta ever first priority, I readily agreed to return to Cangas that very evening to drop two more fellas off for coaches home (the expedition no/s were, by this time, dropping as fast as my hopes for a quiet day at camp prior to departure). Via a remarkable journey (constituting a typical act of Spanish generosity from the very people on the mountain to be avoided... the park wardens!) we made it to Cangas that evening. The next day I said goodbye to the landy for good (or for that year at least). The pick-up mechanic had a fiddle with the stick. His arm spiralled back and forth in the same manner that my own had done the previous day. He shook his head and it was adios to the expo wheels as the truck trundled away, the rover in tow. Some calls to the Gordon Foundation, another hugely successful if more lengthy hitched ride to the lakes, my slowest walk yet up to camp (involving no less than three separate naps!) and a minor midnight tempest later and I was off home. What a way to go!

Chris Sinadinos

Emergency Cooking Guide 2003

This guide is for when there's no food at camp. [*except cave food, ed.*]

First of all: DON'T PANIC!

Then look for anything that may be edible.

Think about what you are going to cook.

You need to produce two dishes, one made from rock-flour and the other - the sauce – containing lizards, beetles and cow dung.

Go and count the rocks and see how many lizards and beetles you have caught.

Work out how many people you are cooking for, then divide out the rocks and other ingredients. You want about 1 fist-sized rock and two lizards per person.

Now set about making rock and lizard stew.

First you need to grind up the rocks to make rock flour. Start doing this first and do everything else while it's cooking. Cook the rock flour at high pressure for an hour until its not crunching anymore.

Now start chopping the lizards and beetles:

Lizards – cut in half length ways, cut off both ends and then peel off the skin.

Beetles – soak and the peel – chop finely.

Fry the lizards and beetles and then simmer with the cow dung and some water.

OR ask passer-by for some food.

P.S. Is it possible that for the first time in the history of OUCC expeditions to Spain there are no Mournflakes [sic] to eat?

Claire McElwain, logbook, 28/07/03

The Expedition Rules

1. Safety first. Really, we mean it. Honest. It's not safety second, it's not safety seventh its safety first. Why are you looking at me like that?
2. Bedtime is 2am or whenever the alcohol runs out, whichever is later.
3. Anyone caught doing a Bimbo, bogroll and egg carry will be shot on sight or handed over to the tender mercies of Mr. V. t. Impaler esq. at the El Jefe's discretion.
4. No Bimbo may be eaten without prior singing of the Bimbo song.
5. Whatever happened, a cow did it.
6. NO vomiting in the kitchen.
7. No shaft-bashing without vino tinto or vodka.
8. If you feel tired, cold, unwell or hungover YOU MUST NOT ABSEIL!
9. For reasons of liability El Jefe expressly forbids you from doing whatever it is you are about to do.

Shaft-bashing – Caves Explored That Weren't Pozu Julagua (54/4)

One of the most important secondary aims of any OUCC expedition is to continue the examination of our allocated area for new caves to explore. Although a few of these provide access to spectacular cave systems and kilometres of unexplored passage most become impassable within a few metres. In 2003 28 caves were shaft-bashed (as this exploration is colloquially known), of which 4 were previously unknown entrances. Two projects, Pozu Jenga and Pozu Chicago, were subject to more intensive effort and may yield further rewards, both being well sited in relation to existing cave systems.

Caves Revisited

Only those caves in which progress was made beyond previous limits of exploration are noted.

D21 – 18/07/03 – Fleur and Nobby. Possibly D12.

Location - 173° Verdelluenga, 135° El Regalon, 190° Cabrenes. Follow the Alisedon Path to cairn at turn off for Top Camp, head north for 250m. At the end of a small valley of shake-holes/collapses.

Description – 1 ladder length – 30ft. – in circular shaft to chamber 5m² ish. Choked immediately downstream. Upstream short slope with rotten calcite chokes quickly. Halfway down ladder, small fossil passage leads off in both directions. Upstream draughts but would be a cold day in hell before you felt so desperate as to dig it.

D22 – 18/07/03 – Fleur and Nobby. Possibly D13.

Location – 171° Verdalluenga, 143° El Regalon, 188° Cabrenes. Follow the Alisedon Path to cairn at turn off for Top Camp, head north for 250m. Approx. 50m north of D21, across a grassy plateau to limestone scarp. Marked with a small cairn.

Description – Cave entrance is formed with sloping plants root (formed from bedding surface or other discontinuity), very Mendip. Rope climb down (25m rope) green slope, short steep section, then gentler muddy slope to boulder floor. Draughting hole in boulders under calcite teeth can be free climbed to smaller chamber with ~8m pitch in rift left undescended.

10/4 – 26/07/03 – Neil. 27/08/03 Neil, Tanya, Al and Eleanor.

Location – 30T 0344862, UTM 4789408, elevation 1553m

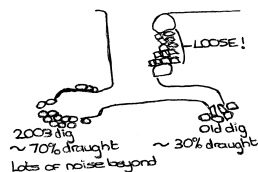
Description – Strong draught, despite alleged snow plug. 6m climb followed by 18m pitch. Rock loose and frost shattered. 6m pitch leads to boulder choke. Only one small patch of snow remained of the 1988 snow -plug.

Pozu Jenga – 04/08/03 – Jon, Ben, Claire. 15/08/03 – Jon, Geoff, Chris R and Chris D.

Location – Valley of Dry Bones, under a cliff, smaller of 2 noisily draughting holes.

Description – Short surface shaft, can be free climbed, with loose rock for one wall. At the bottom uphill leads under chock-stone and loose wall to old dig. This was not draughting. Downhill dug to open a squeeze into small chamber. Strong draught here from 3 inch slots in floor. Friable rock around them can be broken to open a way on. Worth further digging.

'Pozu Jenga' Grade 1 Elevation



Caves Discovered in 2003

Dxxx – 23/07/03 – Matt, Fleur, Nobby, Chris P

Location – 30T 0342167, UTM 4788564. Not marked but a distinctive entrance in an inclined bedding or fault. The cave follows this alignment.

Description – Climb ~10m down into high rift chamber. Upstream swiftly closes down. Downstream a small hole leads to a 5m climb down into rift, with ways on in both directions. North leads to decorated fossil passage, south to a short drop, neither to a way on. “Come back in 10 000 years,” Matt.

80/7 – 26/07/03 – Neil, Tanya, Paul

Location – 30T 0343763, UTM 4787909, elevation 1780m.

Description – 80cmx25cm entrance. Stones only go for a couple of metres, no draught.

81/7 – 26/07/03 – Neil, Tanya, Paul

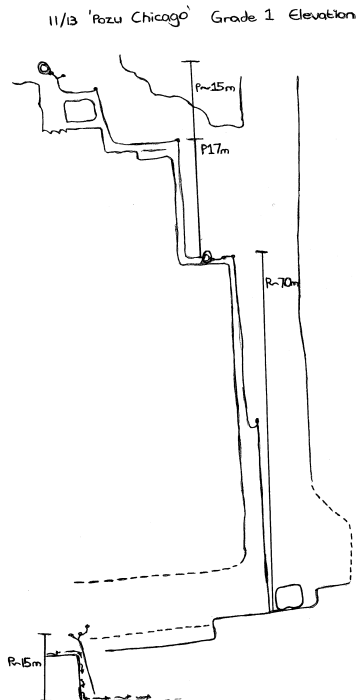
Location – 30T 0343815, UTM 47888147, elevation 1757m.

Description – Rift shaft 1.5mx0.5m, ~10m, undescended.

11/13 – 30/07/03 – Al. See Diary for further trips.

Location – 30T 03444791, UTM 4790105, elevation 1446m.

Description – Located on the side of the La Texa Valley, west of the Pozu Cabeza Muxa bowl and north-north-west of the Valley of the Orange Rock. Entrance is in the hillside facing the gorge, a cleft just over a foot wide, with a tree growing out of it. A bolt y-hang near the tree lands on a large boulder pile in the rift (~11m). ~7m pitch past the boulders lands on a boulder floor, followed swiftly by ~17m pitch (Adrenaline), which lands on a ledge. This leads directly to a large pitch ~70m, with a great deal of moon-milk at the top. Bolts here must be checked carefully. At the bottom a tight rift is the only way on, this turns a corner and then a pitch drops away. Water enters here. Up and downstream of the pitch both unexplored.



Expedition Field Diary

Trips are down Pozu Julagua (OUCC Ref. 54/4) unless otherwise stated.

Who	Where	Date	Comments
DL, PG, SM, GP, CS	Spain	07/08/03 – 08/07/03	All aboard, next stop Ario! Land Rover and trailer depart the UK
PG, CS	Entrance series	12/07/03	Rigged to bottom of Subtle Knife
DL, CS	Scrofulosity to Balrog	13/07/03	Rigged to end of Upper Tormenta Streamway
CP, GP, RC	Area 4	13/07/03	Gareth's first trip on expedition
PG, GP	Balrog	14/07/03	Balrog rigged
NM, CS	SNF	15/07/03	SNF partly rigged, "arm exercises" aplenty
PG, FL	SNF	16/07/03	SNF rigged. It is scary
GP, EP	Area 4	18/07/03	Eleanor's first trip on expedition
CS, MB, RC	Area 4	18/07/03	Matt sees the entrance and jacks
PG, DL	SNF to La Frontera	18/07/03	Rigged to top of D
CS, GP	Thunder pitch	18/07/03	Evening, fixed bolt so PG & DL could get out
NM, FL	Shaftbashing – Area D	18/07/03	Sought D98, found D21 (poss. D12?) and D22 (poss. D13?)
NM, FL	SNF	19/07/03	Start of re-rig
CS, NP, TS	Upper Streamway	19/07/03	Neil and Tanya's first trips in Pozu Julagua
DL, GP, CS	Breeze Blocks	20/07/03	Breeze Blocks connected to Area 4
PG, CP	SNF	20/07/03	Re-rig completed. No more hanging death!
NM, FL, NP, TS	D onwards	21/07/03	Rigged to Croco-Piggy
MR, E	Croco-Piggy onwards	22/07/03 – 23/07/03	Rigged to Mona pitch. 30 hours underground without sleep
NP, TS, MB	Bare Space	22/07/03	Camp established at head of SNF
PG, EP, RC	Area 4	22/07/03	Matt poached to help carry tackle to SNF
GP, CS	La Frontera	23/07/03	Porter camp gear to the far side of La Frontera
PG, DL	Los Lagos	23/07/03 – 24/07/03	Est. camp at Croco-Piggy on 23. Rigged to Los Lagos on 24. Dave befoils EP's prussic bag
NM, FL, NP	Los Lagos	24/07/03 – 25/07/03	Intended as a hardcore push, only the lakes turn out to be sumps. Bigger
BL, CM	Los Lagos	24/07/03 – 25/07/03	No bypass evident, just a grotty roof-tube
MB, CP, NM, FL, RC	Shaftbashing – Area D	25/07/03	Fail to find D98. New cave discovered but not ready yet – "Come back in 10 000 years" MB
MR, E	Los Lagos	26/07/03 – 27/07/03	Bolt climb into the roof-tube. Leads to a crawl and "Big shit," – E. Way on, but no bypass yet
MB, CS	Los Lagos, camp at SNF	26/07/03 – 27/07/03	Ostensibly to porter gear to camps and pushing front. Really to have fun caving
NP, TS, PG	Shaftbashing – Jultayu Area	26/07/03	2 new caves found (80/7 and 81/7) and 6 others revisited
NP, AW, EP, TS, RC	Shaftbashing – 10/4	27/07/03	10/4 revisited and 1 new cave discovered. 10/4 snow-plug now non-existent...
BL, CM, NP, TS	Shaftbashing – Oston, via Muxa	29/07/03	"Gone...in search of dead goats to eat bottomless caves to descend." – CM. 7 caves visited, 4 new
DL, GP	Los Lagos	30/07/03 – 01/07/03	MR & E's crawl pushed, bypass found. And there was much rejoicing
BL, CM, NP	Balrog	30/07/03	Attempt to photograph Balrog
AW, PG, MB, RC, CP	Shaftbashing – Area 13	30/07/03	Mux 5 & 6 bottomed. 11/13, Pozu Chicago, discovered
AW	Shaftbashing – Area 13	31/07/03	Focussed on area around 11/13, 3 new caves discovered. Oston Area proposed (Area 14)
PG, CR	Popabawa onwards	01/08/03 – 03/08/03	Popabawa bypass surveyed. CR regrets bringing Pimms to Ario

RC, MB, AW, CS	Shaftbashing – Pozu Chicago	01/08/03	15m Adrenaline pitch pushed, pitch possibly 80m deep discovered
CR, RC	Shaftbashing – Pozu Chicago	04/08/03	Copious “moon-milk” (soft calcite over rock) prevents safe bolting of the big hang
JC, BL, CM	Shaftbashing – Pozu Jenga	04/08/03	Cave last seen collapsing on OUCC caver is reopened by digging. A good prospect
JC, GP	Popabawa onwards	05/08/03 – 07/08/03	Pushing in Pozu Julagua restarts. Pearl pitch is descended
CR, GP, SF, RC	Pozu Chicago	09/08/03	Big pitch (~70m) descended after a serious bolting conundrum at the pitch head
JC	Oston	09/08/03	Traditional search for the Windy Cave of Oston
SF, RC	Pozu Chicago	10/08/03	Rift below big pitch pushed
SF, GOD, JC	Pearl pitch onwards	11/08/03 – 13/08/03	Shark’s Teeth rigged after much head-scratching. Returned leaving Fenris undescended
CR, RC, SG	Billy Goats Bluff	13/08/03	Rapunzel investigated
CR, JC, SF, GOD	Digging in Pozu Jenga	15/08/03	More digging. The draught is so strong it makes a roaring noise beyond the dig-face
CD, SF, DL	Shark’s Teeth onwards	16/08/03 – 19/08/03	La Texa reached. Hurrah. De-rigged back to Los Lagos
CR, PC	Pozu Chicago	18/08/03	More pushing in the bottom rift
GP, RC	Shaftbashing	19/08/03	New entrance found, then lost in clag
SG	Shaftbashing	19/08/03	Failed attempt to find 6/9. Bloody clag
PC, CR	Pozu Chicago	19/08/03	Pitch at end of rift rigged, found a streamway
CR, PC	De-rig to Croco-Piggy	20/08/03 – 22/08/03	De-rigged from Los Lagos to Ca mp Croco-Piggy
CD, GP, DL	De-rig to Area 4	22/08/03 – 23/08/03	Mammoth trip de-rigs both camps and an awful lot of rope by paella. Dave left unable to walk
SM, RC	De-rig Rapunzel	23/08/03	Rapunzel gear de-rigged to Area 4
PC, CR, SM, RC	De-rig Pozu Julagua	24/08/03	Rope paella goes awry, half out, half left at Camera pitch
GP, CR	Finish de-rig	25/08/03	All the rope emerges by mid-day. Hurrah
All those left	Depart Ario	27/08/03	Ario departed at 13:00
SG, DL, SM, GP	The UK	28/08/03 – 30/08/03	Back to Blighty. Expedition field phase ends

Section 3 – Officers' Reports and Conclusions

The Expedition Leader's Report

As stated at the beginning of the report, the Julagua 2003 expedition was a great success in many ways. It achieved its primary goal and did so with a weaker team than initially anticipated. Not only this, but many inexperienced cavers rose to the challenge magnificently, undertaking trips far in excess of expectations. In addition to this, the level of co-operation between members of different clubs was a joy to behold and was very much integral to the success of the expedition. Thanks and congratulations to all the cavers who came along and made the expedition field-team such an enjoyable, amiable and amusing group of people.

Although the focus of the expedition was somewhat myopic in its attention to pushing the depths of the cave – a necessary situation, given the shortage of cavers and the problems of caving at such depth – a small amount of shaft-bashing was also undertaken. It was heartening to see teams of cavers formulating their own problems and areas of interest in the field and working to discover new caves. Of these, Pozu Chicago, has obvious potential, whilst Pozu Jenga remains well sited in relation to the 2/7 system and was wisely re-investigated.

The transport situation, whilst problematic, was a relatively minor problem once the shock of the situation had worn off. Hats off to the Gordon Foundation for their support and insurance provisions, and to the AA for being remarkably helpful (and, indeed, saving me from becoming personally liable for a gear-box strip down which would have cost 1000 euros more than the insurance excess covered!).

Juan Jose Gonzalez once again took excellent care of the expedition's needs with regards to permission and Spanish governmental bureaucracy. Without his support the expedition would not have been possible and I wish to personally thank him for his work.

Despite the success of the expedition in achieving its stated aim there are a great many very important lessons to be learned from the experience, which I have sought to highlight below. Some information has been omitted. This is not wilful negligence, rather it should be remembered that OUCC expeditions go to this region of Spain every year, and there is little need for the wasteful duplication of knowledge embodied in the older members of the club who are only an e-mail away. Rather the purpose is to raise and address specific points in relation to the 2003 expedition and its particulars.

- An expedition of this size requires an experienced leader – despite my best efforts it has repeatedly been made clear that the expedition would have benefited from a leader with either greater experience of expedition caving, or of a cave club committee post, or preferably both. Although a good Equipment Officer and Treasurer can help an inexperienced leader this is very much damage limitation, and the best solution is to ensure that the leader is sufficiently experienced to undertake his duties efficiently. In particular, the expedition leader's main role in recent years has been the acquisition of consent and funding from Oxford University and funding from other organisations. This requires a large amount of work in the autumn months, and means that the organisational qualities of a prospective leader should be given utmost consideration by OUCC.
- Appoint a capable Secretary – although it is easy to assume that the workload is not too great or that the position is largely superfluous in an expedition of this size and organisational nature, a good Secretary would be of help to the Leader in remembering dates and taking up bureaucracy which may require legwork e.g. extracting medical condition forms from people. This role would also help introduce another person to expedition planning, see above.

- Ensure that you have access to a mobile telephone that works abroad – if you have previously been barred from calling premium rate numbers your phone may not work abroad, in spite of the assurances of call-centre workers. Assume that one phone may not work for whatever reason and always have a back-up. One phone should always be at base camp, in case of emergencies.
- A protocol for contacting the UK in case of emergencies should be established – if it is impossible to immediately contact the Home Contact in an emergency situation, as happened in 2003, a protocol must exist for establishing communication with the UK. This may involve the use of pre-arranged text messages to forewarned persons, but should not be of the alarming and scatter-shot nature employed in error in 2003. This procedure should be covered as part of rescue training in the UK, see below.
- Call-out procedure should be carefully taught in the UK – although the only call-out of the expedition was well handled the relative inexperience of the field-team at the time meant that there was some uncertainty about how the situation would have progressed if a full-scale emergency had developed. A greater degree of contingency planning should be carried out in the UK, and proper call-out procedure stressed during rescue training. Although this is taught at the moment it should be remembered that at any time in the field there could be no members of expedition with prior experience of a missed call-out, and that an inefficiently organised and documented rescue attempt may jeopardise both injured persons and would-be rescuers.
- At least two named drivers should be over 26 years old – 26 years old is the minimum age to drive a hire car for many firms in Spain. In the event of a transport failure it may become essential to hire a car, and this is impossible if no one is allowed to drive it. In 2003 it is fortunate that Simon Goddard was present at the end of the expedition. If he had been out at the start and Paul Garver at the end the expedition would have been in the problematic situation of being without transport for up to 1 month, with several stranded drivers come the end of expedition.
- Salient points on shaft-bashing – it has always been clear that the shaft-bashing guide contains some interesting, if not entirely accurate descriptions. This year we have continued the practice of logging entrances with a GPS, and of getting damned familiar with the surrounding area. This has led to the suggestion of an Area 14 (see the logbook for Al Wilson's thoughts on this). Perhaps less controversially, it is high time that a laptop was acquired and shaft-bashing information updated at Ario with up-to-the-minute accuracy. It may also be possible to mark shaft-locations upon a digitised map, which may aid later re-discovery with the help of GPS.
- On deep caving – caving far below the entrance to a cave is an unnerving and dangerous situation. It requires both mental and physical stamina, and the leader must have confidence in the ability of expedition members to undertake not only deep trips, but other work in the field; if the focus is upon deep caving with limited human resources concern about the team's ability to safely undertake other field projects may become a detriment to the possibility of achieving the main aim. That said, if, as was the case in 2003, experienced cavers take the initiative in other field work this can be of great advantage to the expedition. At underground camp disinfectant must be taken to prevent illness through poor hygiene. Trips from camp should expect to be long and arduous; given the relatively short distance to be covered once the Popabawa bypass was found it was a cumulative failing of trips not to push the lead with grim determination, in spite of cold and fatigue.

David Legg, Leader

Treasurer's Report

On the whole, I am pretty happy with the amount of money we had available for this expedition. At most stages there was cash available for everything we needed to spend it on. The main difficulty was in the early planning of the expedition, before any of the grants or many of the deposits had come through. The advice to net year's expedition is: when setting up a mass gear order for expedition members, insist on early payment for each individual's order; probably payment of an estimate of the cost before the exact cost is known (the balance can be resolved later). Because of these difficulties we were put in an unfortunate situation of having to effectively borrow hundreds of pounds from members involved in the expedition administration.

I wouldn't recommend reducing either the kitty or deposits next year. Although we had a comfortable amount of money for most of the expedition, we ultimately had very little to spare had there been any other serious incidents (in addition to the loss of the Land Rover).

Comparing the final budget with the preliminary (bearing in mind that the preliminary budget did not take into account individual transport and gear purchase), we discover that the preliminary budget was an overestimate. However, closer examination reveals that the major discrepancy was due to the Gordon Foundation Land Rover, which reduced transport costs considerably. The amount of communal gear spending was also overestimated slightly.

Paul Garver, Treasurer

Accounts Summary

INCOME:

Grants	Ghar Parau Foundation	£400.00
	Oxford University	£640.00
	Royal Geographical Society	£750.00
	Total:	£1790.00
Member Contributions	Deposits	£1245.00
	Travel in Land Rover	£280.00
	Individual transport	£2000.00
	Food contributions	£1350.00
	T-shirts	£150.00
	SRT Training Week	£200.00
	Gear Order	£3857.78
	Total:	£9082.78
	TOTAL INCOME	£10,872.78

EXPENDITURE:

Communal travel costs	£1194.00
Individual travel costs	£2000.00
Communal Gear	£1022.00
Gear order	£3857.78
SRT training week	£200.00
T-shirts	£150.00
First aid (training and supplies)	£932.00
Camping equipment	£80.00
Food	£1350.00
Publications	£87.00
TOTAL EXPENDITURE:	10,872.78
BALANCE:	£0.00

Medical Officers' Report

Spain may not be a remote country in its self, but once in the mountains of the Picos de Europa and underground the expedition is on its own and must take control of all medical problems. In the event of a major medical problem we have access to outside help, such as Spanish cave clubs and helicopter back up.

This year training members of the expedition of basic and advanced first aid skills was a major part of the expedition. Members of the expedition took part in a minimum of 6 hours first aid training by Oxford University First Aid Unit (OUFAU). This involved training such as dressing minor and major wounds, CPR, information on pain relief, moving casualties with spinal & head injuries.

Two members of the expedition also attended two advanced courses with Wilderness Medical training in association with the Royal Geographical Society. These two courses involved training people to use more advanced first aid techniques such as treating major head, neck and spinal injuries, minor and major fractures, heart attacks, internal bleeding, the use of prescription drugs, and how to set up a drip and use intravenous pain killers and antibiotics.

This year our first aid kits were split into areas of expected use. Firstly every member of the expedition carried a personal first aid kit, consisting of basic equipment. Plasters bandages, painkillers, candle, lighter, gloves, wound dressings, and antiseptic cleaner. The Land Rover that was supplied by the Gordon Foundation came with its own first aid kit which stayed with the vehicle at all times. We added to this slightly to include extra supplies. The base camp trailer also contained all spare supplies for first aid kits that were up the mountain. Ario camp first aid kits included equipment that would be used most. The limestone in the Pico's is extremely sharp and this causes most of the minor injuries. So lots of plasters and wound cleansing materials were included.

Also at Ario camp, the more major first aid kits were kept. The prescription drugs, which the two medical officers or a doctor could only prescribe and the intravenous kits, which again could only be used by the medical officers. These kits were packed so that they could be moved quickly, either above ground or below. The infections kit was also stored at Ario camp. This included mainly first aid equipment for skin problems, sunburn, dehydration as well as prescription drugs for problems such as infected wounds, stomach problems and meningitis. The rescue stretcher was also kept at Ario camp.

While underground members of the expedition had their personal first aid kit with them, but there was also an underground camp first aid kit. This was stored in two watertight containers and consisted of a limited but useful amount of equipment. (Painkiller's, bandages, wound dressings, splints, survival bags, batteries, candles and food, and a canular kit)

Simon Goddard and Sarah McCulloch, Medical Officers

Summary of incidents

There were no serious incidents or injuries this year.

- 1) One infected wound. Treated with thorough cleansing, and a course of antibiotics.
- 2) One stomach problem. Person was qualified and treated themselves.
- 3) One breathing problem. After contacting UK and Doctor, problem thought to be probably from over exertion. Person was calmed down and reassured and took it easy for the next few days.
- 4) One incident of dehydration. Took Rehydrate solution and plenty of water.

Further Comments on First Aid Training

Current first aid training as prescribed by the Oxford University Expeditions Council (OUEC) is impractical for an expedition in which several members live outside Oxford. All members should have first aid training, but whether the rigid prescriptions of the OUEC are appropriate is a matter for dialogue with the Council. If it is impossible for the expedition to comply with these prescriptions the situation may be in danger of creating the precarious legal situation that comprehensive, prescribed first aid training was implemented in part to prevent.

Specifically, in 2003 situations arose with members from outside Oxford in which valid first aid qualifications would not have been considered sufficient to satisfy university criteria, which specify that the entire content of any first aid course not provided by OUFAU must be approved by Tariq Quaresh of the OUFAU prior to the expedition's departure. As several cavers did not confirm their participation in the expedition until the field-phase had begun this was not possible. The situation was further complicated by OUFAU's insistence that the number of sessions for first aid training be strictly limited, and confined to a period spanning 20 days in March. At this time those members from outside Oxford were also those least likely to have decided that they were coming on the expedition. Although future expedition leaders must resolve this situation, I offer the following thoughts:

- If the expedition wishes to continue using first aid training provided by the OUFAU two courses should be offered, covering the same content but targeting different groups of members. One should be in Hilary term (approximately January to early April), split over two evenings; this would be suitable for students with exams in Trinity term. The second should be in Trinity term (approximately late April, May and June), on a single day at a weekend; this would better suit those members from outside Oxford, especially if arranged several months in advance to give due warning.
- The current period of validity, one year, may be extended, possibly supplemented by refresher courses provided by the OUFAU or a trained member of OUCC.
- Given the relative brevity of the current course it may be possible to combine this with the rescue practice organised in the UK. This would eliminate the need for those living outside Oxford to give up at least two weekends for training which, in many cases, they have already undertaken many times before. It would also provide an opportunity for OUCC members not planning to come on expedition to brush up on vital skills.
- Alternatively, it is worth seriously investigating the possibility of arranging a private first aid course with an independent company. This option was briefly investigated in 2003 but too late to be effectively organised. Under current regulations it would be necessary for Tariq Quaresh to approve the course content. The individual cost to expedition members would need to be considered.
- It must be remembered that cavers are aware of the risks inherent in their sport and take all possible steps to eliminate the dangers. The cave environments encountered in Spain do not present dangers unknown in the UK, in which OUCC currently undertakes trips having made its own provisions for the rescue and first aid training of club members. Specific training is given to expedition members to cope with the rigours of deep caving, and the utmost effort is made to ensure that at any time one field member has received advanced first aid training. The question must therefore be raised, 'Is it appropriate to force an expedition to another European country, in environments and facing risks largely similar to those in the UK, to comply with regulations intended to cover expeditions to areas very dissimilar to the UK in which swift contact with experts is almost impossible?'

David Legg

Conclusions on Pozu Julagua

Concerning prospects for further exploration.

- Right wall of Area 4 – In Area 4 the right-hand wall consists of two large ‘alcoves’ separated by several huge boulders reaching up to the roof. The first of these alcoves, heading in to the cave, is Breeze Blocks and connects to Magic Tree Passage, which crosses above Area 4. The second alcove is filled with loose rocks and huge boulders, making exploration hazardous and free-climbing dangerous. However, the far wall of this alcove has not been reached, and a person-sized gap is visible between two huge boulders. However, this would require an almost suicidal climb to reach.
- Magic Tree Passage – One lead remains here, a muddy climb hidden above and behind a large calcite flow on the right-hand side of the passage at the start of the calcite floor. This was free-climbed by Dave Legg in 2002 and revisited by Chris Densham, but is in a bad state of repair and will need a rope (~25m). At the top the climb emerges in a small, muddy boulder chamber, from which an easy climb up leads to a window overlooking a much larger chamber. This large chamber (at least 20m wide) is also muddy and filled with huge boulders, and slopes down to the left below the window.
- Troll Chamber – 2 known leads to be pushed from this chamber. See Cave Description.
- Billy Goats Gruff – leads to Rapunzel and thence to Drums in the Deep, a large, undescended pitch which may connect to Upper Tormenta streamway or Balrog.
- Greased Lightning – See Cave Description. May become the inlet at the head of SNF.
- Mona – the final pitch before LDSotS. There appears to be an opening opposite the pitch head on the far wall, which may take much of the draught that was prevalent until this point in the cave. However, it can only be reached with a bolt climb from below or a bolt traverse from Mona.
- Popabawa Bypass – The current route heads straight up into the roof. A small chamber ~10m below the top of the rope, next to a rebelay, leads to a tight crawl, the route by which the bypass was pushed. In this crawl two draughting holes remain to be pushed, but are tight, wet and unpleasant. In the passage beyond the muddy squeeze but before Pearl pitch the route away from Pearl, up a climb ~2m leads to an old, dry, unexplored inlet.
- Pearl pitch – Two inlets can be seen on the wall opposite the Pearl pitch-head. One is dry and at about the same height as the pitch-head, whilst the other meets the pitch ~15m from the floor and was carrying water. Neither of these is orientated along the same line as Popabawa sump. An interesting, if inaccessible, lead.
- Battle of the Deities Avon – Where does it come from? Is it the water from Popabawa? If so why does it enter down such an enormous avon? Unfortunately, it may be impossible to find out, as a bolt climb is certainly out of the question!

Because of their very different places in the cave and the lack of attention paid to them during the expedition it has not been possible to evaluate the potential of these leads.

Pozu Asopladeru la Texa, Sistema Julagua and the Surrounding Hydrology

A great number of the caves on the western massif of the Picos de Europa drain their water out of a large resurgence cave known as Culiembro, in the Cares gorge. This cave has been known about for some time, and in the late 1980s a team of cave divers from the Northern Pennine Club passed an upstream sump. The cave subsequently develops into a complicated maze of passages and sumps, which are still being explored. The water of three known caves, Pozu del Xitu, and Pozu Jultayu (explored by OUCC) and Pozu Cabeza Muxa (explored by the SIE) has been dye-traced to the Culiembro resurgence, although the flow-rate at the resurgence suggests that one more large underground stream may drain into Culiembro.

Two goals exist, both of which are of great importance both to the exploration and understanding of the hydrology of this area of the western massif: to find the proposed fourth streamway (if it exists – if streams of the size of the Tormenta streamway in Pozu Julagua were to join below the limits of exploration in any of the three mentioned caves this would account for a great deal of water), and to connect passage from a cave dye-traced to one of the three mentioned systems to Culiembro. Currently exploration in all three of the caves mentioned has ceased; Pozu Jultayu is blocked by the massive Choke Egbert, Cabeza Muxa and Xitu by sumps. Of the sumps it would be extremely difficult to get diving equipment to the Xitu sump, whilst the sump of Cabeza Muxa has had one dive attempt made, but encountered difficulties.

Sistema Julagua is ideally placed in relation to this hydrological situation. Pozu Julagua connects with Pozu Asopladeru la Texa, which in turn meets a large streamway heading in the general direction of Culiembro (see figure 1). Figure 2 shows the horizontal relationship of the caves, whilst figures 3 and 4 show the horizontal distance between the downstream end of Asopladeru and one upstream terminus of Culiembro and the relationship with other major caves. It has been hypothesised that the large stream met at -600m may be the stream from Cabeza Muxa, and if so this would further strengthen the possibility that Asopladeru might connect to Culiembro. Reports from SIE indicate that the downstream limit of exploration in Asopladeru may not sump, and furthermore there are several unexplored windows in a large phreatic level above the point of contact with the proposed Cabeza Muxa stream. As such Pozu Asopladeru la Texa must be a high priority for further exploration either by OUCC or SIE.

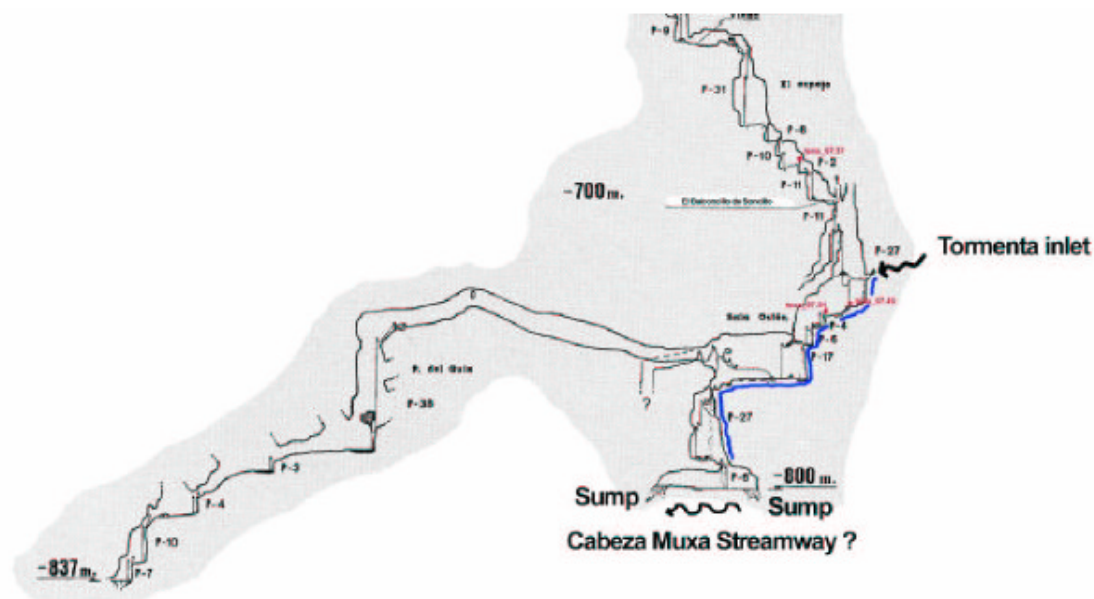


Figure 1: The lower reaches of Pozu Asopladeru la Texa, showing the connections with Tormenta streamway and the hypothesised Cabeza Muxa streamway

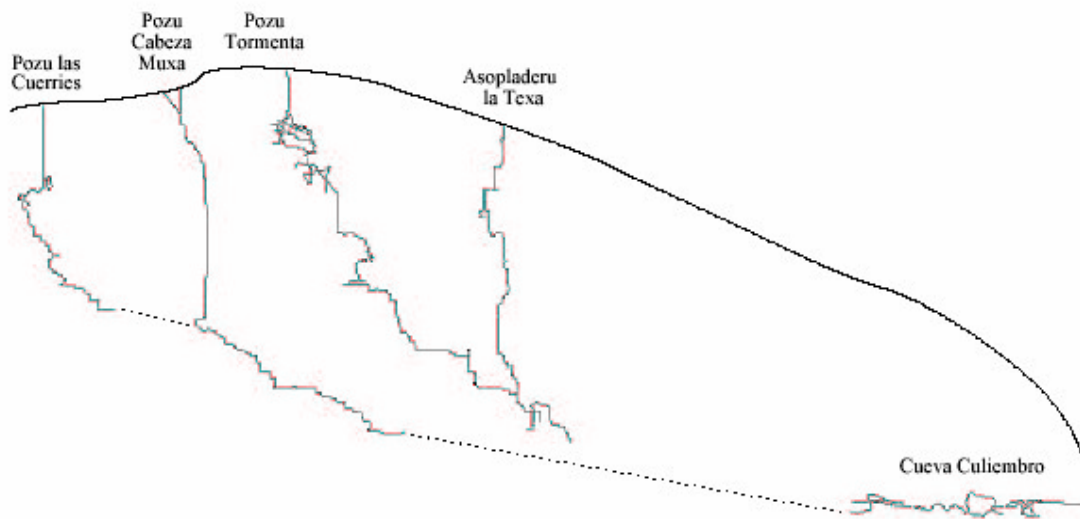


Figure 2: Projected elevation (looking north) of Sistema Julagua and related caves

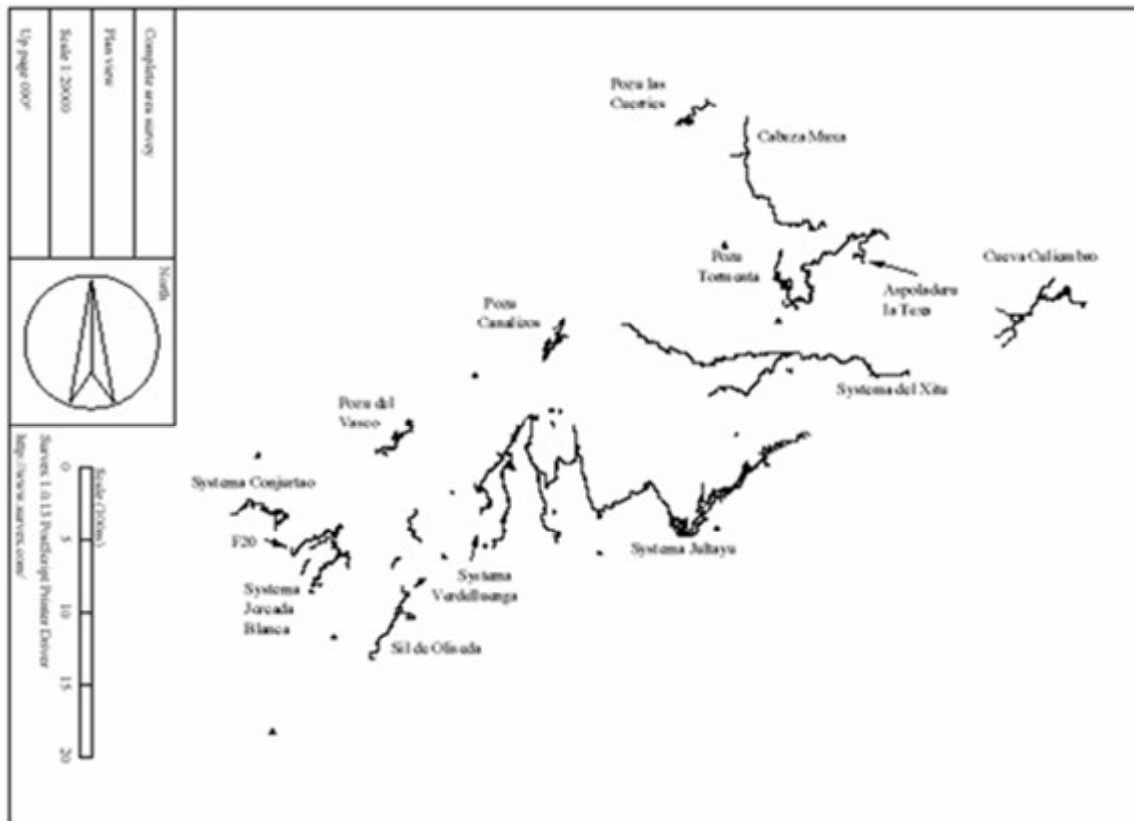


Figure 3: Combined Survey of Major Caves in the Ario Area

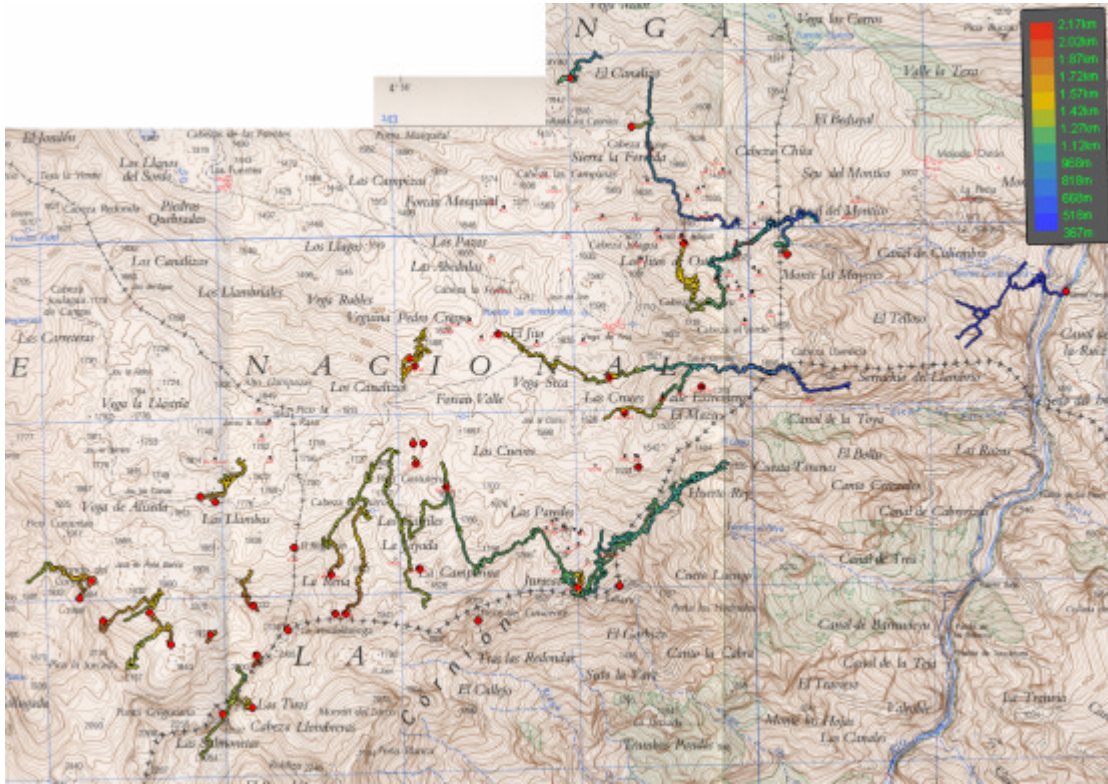


Figure 4: Caves of the Ario Area Overlaid Upon a map of the Area

Section 4 - Pozo Julagua: Cave Description

The cave is described in sections. For clarity routes off the main line have been included in square [] brackets and the names of sections of cave are in italics.

Location

Pozo Julagua is located over the Julagua - Covu ridge from the Ario bowl. Follow the cairned path which runs from Ario and along a ridge to the East of Julagua. On the left is a large valley with a big startlingly orange boulder in the bottom. A little further along the path, and a 3 metre diameter goat shelter can be seen on the left hand side of the valley (looking down). *Pozo Julagua* lies in the middle of the valley about 5 metres higher than the goat shelter. It is a strongly draughting vertical slot in the grass, about 1m x 50 cm.

UTM coordinates: (WGS 84): 0344532 4789727

Altitude: 1540 metres

Depth: 721 metres

Surveyed Length: 3939 metres

Warning!

The description given here is the result of two much of hard work and is as accurate as possible. However, it cannot be completely perfect so be careful. In particular:

- The rope lengths given in this document are estimates.
- There are still many unstable rocks/choss in the cave waiting to fall on people.
- Although the rigging was improved where possible the cave remains essentially rigged for exploration. In particular bolts on Pearl Pitch and Shark's Teeth should be examined as bolting conditions here are less than ideal.

Entrance Series

The entrance squeeze drops into the tiny *Tornado chamber*. A gradually enlarging hole in the floor leads down the *Muddy Slope* to the top of *Camera Pitch*. [It is possible to travel along the rift below *Tornado Chamber* instead of down, leading to a parallel shaft that chokes after about 10m.] *Camera Pitch* is broken by a large, pebble-strewn ledge – beware of knocking off choss.

At the bottom of the pitch follow the rift, past the remains of Doyle's camera, to *Velcro Squeeze*, an awkward 2m section of tight rift. This pops out above *Velcro Pitch* (on the way in, feet first is definitely easier although everyone should try hanging upside down over the pitch at least once, just for the experience).

At the bottom of the pitch, a 5m traverse starting just over the top of the obvious pitch-head leads to *Thunder Pitch*. [A possible continuation of the rift at this level has not been explored.] *Thunder Pitch* lands about 2m away from *Subtle Knife Pitch*, a fine 30 metre drop that marks the end of the entrance series.

Pitch	Rope	Belays
Muddy Climb	45m	Bolt backup, thread + chockstone y-hang, 2 bolt rebelays in roof (-3 m, 5m)
Camera	“	Bolt y-hang, bolt deviation (-3m), bolt rebelay (-10 m)
Velcro	50m	Bolt backup L, bolt y-hang, spike deviation (-2 m) spike deviation (-10 m), thread deviation (-12m)
Thunder	“	3 bolts on traverse RLL, bolt y-hang, bolt deviation (-5 m)
Subtle Knife	50m	Bolt y-hang, bolt deviation (-10 m), spike (-12 m), spike deviation (-3m)

This section may be rigged on a single 150m rope (best use 11mm, as it gets fast!)

Base of Subtle Knife to South Wales

After landing on a rocky floor, follow the rift along into a boulder chamber. [Climbing down through the boulders leads to upstream *Mornflake Creek* which enters through an immature 6m shaft parallel to *Subtle Knife*. There is no easy connection to downstream *Mornflake* unless you take a hammer...] As the walls begin to narrow in again at the far end of the chamber, the climb down through *Scrofulosity Rift* begins. [It is possible to pass over the top of *Scrofulosity Rift* to a window, however, there is no evident way on]

The way on is to go straight down and follow the rift at floor level, down over an awkwardly wide 2m climb, and back under the passage to climb down to *Mornflake Creek*. This small streamway meanders along the line of the rift for around 70m before falling into *South Wales*, a boulder chamber about 25m high and 25m across. The water falls down a 10 metre pitch before sinking into an impenetrable choke in the floor.

Pitch	Rope	Belays
Scrofulosity Rift I	15m	Bolt belay, bolt rebelay (-3 m), chockstone deviation
Scrofulosity Rift II	20m	Tape climbing aids, 2 spikes in floor belays, wire round pillar rebelay

South Wales to Mostly Mud Cafe

Instead of following the water, pendule across onto the boulders opposite the pitch. A hole in the wall reveals a sloping route through the rocks. At the bottom, a turn right followed by a 2m climb up leads to a junction (an alternative way through the boulder choke enters on the left). To the right, the passage opens out into the main *Area 4 Chamber*. Head this way and follow the left hand wall round.

Come away from the wall where a small waterfall drops through the roof and climb over a large boulder [*Rubby 9mm Pitch* leading to upstream *Upper Tormenta Streamway* is just below and to the left of the rock] before returning to follow the left hand wall through the chamber.

[The right hand wall has two features. Immediately on the right after entry a slope of loose choss on boulders joins *Breeze Blocks* chamber. Beyond this slope appears to be a similar feature, however, the huge and precarious boulders make exploration difficult. A person-sized gap exists at the end of boulder-collapse, opposite the point of entry from Area 4. However, to gain the gap would require climbing skill and nerves of steel.]

Leave the left wall to follow footprints up a gentle, muddy slope towards the sound of falling water. At the top of the slope, the *Mostly Mud Cafe* brew kit site marks the start of a complicated fossil level.

Pitch	Rope	Belays
South Wales	20m	Chockstone backup, spike + bolt y-hang, tie off on big boulder at bottom to make a pendule

Mostly Mud Cafe to Balrog via Streamway

The first route to be discovered has become the trade route, although it is rather wet, and there may be better ways to *Balrog*. From *Mostly Mud Café*, climb down to a rather drippy window above a short pitch, *Singing in the Rain* (aka *SITR*). The base of this pitch is a large steep sided depression which forms one corner of the *Area 4 Chamber*. The depression is split in two by the *House Sized Boulder*. To reach the streamway, head round to the far side of the boulder where it is possible to climb down through more boulders into a rift. A short traverse followed by a pitch leads into a fast flowing stream (flow-rate estimated at 50 litres per second, in dry conditions).

[Upstream leads to a chamber, *The Head of the River*, where water comes down a chute from the roof. It is possible to free climb above the chamber and continue upstream. The passage gives the choice of an awkward duck or an extremely tight oxbow, *One Way Ticket*, before coming out underneath *Rubby 9mm Pitch*. Continuing upstream leads into a chamber, where the main streamway is found to be choked. A muddy inlet still needs to be pushed, however.]

Heading downstream leads to occasionally awkward but constantly entertaining rift. After a short pitch the passage widens, and the *Turner Prize Series* enters on the left hand side. A pair of cascades mark the approach to *Balrog*, one of the larger pitches in the cave. The cascades become very wet but not impassable in wet weather; a short traverse and pitch is best rigged to pass them.

Pitch	Rope	Belays
SITR	15m	Bolt + thread y-hang (or rerig somewhere dry!!)
Traverse to stream	10m	3 spike traverse line, bolt hang, useful, but not essential
Pitch to stream	10m	Spike backup, bolt
Streamway I	10m	Great big pillar (maybe rerig higher for wet weather)
Streamway II	15m	Bolt, natural traverse, bolt, 2 bolt y-hang

[Mostly Mud Café to Troll Chamber

From the *Mostly Mud Café*, climb up the left side of the muddy slope. There is a rope in situ on the only scary section. From the end of the rope, cross the boulder bridge to the right side of the passage, then clamber back to the left as soon as possible. A small, triangular, strongly draughting hole in the calcite leads into a passageway.

[Following the draught leads vertically up the rift to *Death Star Pitch* (drops in above brew kit), *Magic Tree Passage* and *Breeze Blocks*] Continuing along the floor of the rift, the passage widens out a little into a glorious, greyish fossil streamway which, after 100m or so, pops out into *Troll Chamber*. *Troll Chamber* is similar in scale to *Area 4*, though with a lower roof. There are at least four known routes from *Troll Chamber*. Only two of them have been pushed.]

Pitch	Rope	Belays
Traverse	5 m	2 spike traverse (rope left rigged in situ 2003)

[Troll Chamber to the Upper Tormenta streamway via Turner Prize Series

From the entrance to *Troll Chamber*, turn sharply left and downwards. A short rift leads into *Lotto Grotto*. In the roof another passage can be reached which has not been explored. At the far end of *Lotto Grotto* is *Bovine Bingo Pitch*, followed by a wet awkward crawl, *St Martin's Lane*. This opens onto a wide pitch, *ATPSRHESW*, with an aven above. The base of this pitch leads into the *Upper Tormenta Streamway*.]

Pitch	Rope	Belays
Bovine Bingo	40m	Dodgy boulder backup, bolt belay, bolt rebelay (-2m), thread rebelay (- 10m), bolt rebelay (-15m), bolt rebelay (- 20 m)
ATPSRHESW	30m	Natural backup, bolt backup, natural y-hang (!)

[Troll Chamber to Barcelona

Follow the right-hand wall from the entrance of *Troll Chamber*, until the wall takes a sharp left hand turn. A climb/crawl up leads to a strongly draughting but choked hole with a one way vocal connection to *Area 4*. Directly beneath this is an awkward climb down through boulders to the head of a more open 3 metre climb, which needs a rope. This is behind *Singing in the Rain Pitch*, at one end of the *Barcelona Rift*.]

[Troll Chamber Leads

These leads are both guessed to drop into *Barcelona / Billy Goats Gruff*. There are probably more leads as the chamber is quite sizeable.

(i) Following the left hand wall from the entrance of *Troll Chamber*, it is possible to climb down a very slimy slope. Here a pitch under some boulders leads down into a rift. Alternatively, follow the wall around to an open, echoey pitch head, where nasty choss and calcite make bolting difficult. It is possible to climb up above this pitch over attractive but loose flowstone, but the route appears to degenerate into an impassable squeeze.

(ii) Follow the left hand wall of the chamber, but pass over the top of the slimy slope. At the top of the chamber a flat out crawl into the wall is marked by two cairns. An enlargement is visible, with an obvious echo and perhaps a short drop.]

[Mostly Mud Café to Billy Goats Gruff

Climb down from *Mostly Mud Café* and drop down *Singing in the Rain*. Facing the wall at the bottom of the pitch turn to the right and climb up the rocks. It is possible to squeeze through a large crack in the wall into an L-shaped chamber. Being careful to avoid a hole which is thought to drop into the *Upper Tormenta Streamway*, follow the L to the right. At the far end of the chamber, a climb up can be seen which heads into *Troll Chamber*. Underneath this is the entrance to *Barcelona Rift*. Following the rift leads to an inlet to the right, and just beyond is a pitch, *Rapunzel*, which drops into a large chamber, *Billy Goats Gruff*. Several ways off can be seen, all unexplored. Most seem to head down, but there is at least one rift leading off horizontally. These are the most interesting leads in this area.]

Pitch Rope Belays

Rapunzel 20m Bolt backup to bolted Y-hang.

Balrog to Saturday Night Fever

The top of *Balrog* is a short abseil followed by a wide traverse, until the pitch proper. The fine 70 metre hang is interrupted by several rebelays, and littered with bolts, as the far wall drops away to reveal the largest chamber so far discovered in Julagua. *Bare Space* is big. At the bottom a short pendule about four metres from the floor gains a boulder and offers a short-cut through the chamber. Follow the left hand wall over, under and around boulders until a fairly big black space is reached, *Saturday Night Fever*.

Pitch Rope Belays

Balrog I 20m Bolt L, Bolt L, spike deviation (-0 m), ledge (!) rebelay

Traverse 15m Spike rebelay, 3 bolt traverse

Balrog II 85m Bolt y-hang LR, bolt y-hang LR (-8 m), bolt rebelay L (- 20 m), bolt y-hang LL (- 40 m), bolt rebelay (-55 m), bolt rebelay (-60 m), tie off 3 m above floor.

[Continuing along this wall and climbing up about thirty metres, leads to a large hole in the left hand wall. Heading through the hole leads to an abrupt drop, the top of *Grease Lightning*, a pitch with some water entering from above. At the bottom of *Grease Lightning* is *Summer Lovin'*, another pitch, which soon drops into tight rift, which can still be pushed.]

Pitch Rope Belays

Grease Lightning 70m Spike backup, chockstone belay, bolt rebelay (-2m), bolt rebelay (-15m), 3 natural rebelays

Summer Lovin' 50m 2 bolt y-hang I think

[Pass the route to *Grease Lightning* to attain the very top of the chamber, which seems to be some sort of fracture feature. This interesting section, *Krystallnacht*, is filled with lots of straws, stalactites, helectites and some attractive crystals.]

Saturday Night Fever to Cannock Crawl

Saturday Night Fever has been extensively re-rigged since 2002. Any route involving rigging off huge perched boulders and excessive mud should be avoided at all costs. From the old pitch-head a pendule is made out to a large ledge, towards the sound of running water. Failure to pendule leads to an unpleasant world of mud and hanging death. A bolt traverse leads across the ledge to a large Y-hang, which descends into the abyss. Although thoroughly gardened care should be taken when crossing the ledge. ~15m below the pitch-head a Y-hang rebelay allows a potential hang of ~80m, although a further rebelay ~35m from the floor offers security and speeds up the passage of groups.

[~35m above the floor a pendule is possible which would access a decent sized hole that appears to head off above the misery of *Cannock Crawlway* below.]

The pitch lands in a small chamber from where the only way on is a short climb down into *Cannock Crawlway*. Ostensibly similar to *Mornflake Creek* in character this is an irritating catchy bit of scrofulous rift with a small trickle of water and the obligatory gritty mud coating the walls. Fortunately after about 30m it is all over as the passage forms a minor inlet into the main Tormenta streamway once again.

Pitch	Rope	Belays
SNF Approach	25m	Backup around boulder, bolt, thread natural rebelay (-1m), pendule to bolt L on ledge (-4m), bolt L, natural, bolt R, bolt R, bolt R (traverse)
Saturday Night Fever	130m	Tie in to final bolt of approach, bolt y-hang LR, bolt y-hang (-15m), bolt rebelay (-50m)

Lower Tormenta Streamway to La Frontera

[In the upstream direction the main streamway soon closes down at a boulder choke.]

Downstream continues in fine form as a series of sporting cascades with deep pools that may be easily traversed. Some of the cascades require handlines and the rock is generally dolomitised and brittle. The largest of the cascades, *Grandmaster Faff*, lands in a small chamber from where an easy climb up leads to a short fossil oxbow that soon rejoins the main passage. It is around this point that the cave makes an important but barely perceptible swing to the left abandoning it's old south-easterly bearing and instead heading north.

The main route follows the water down yet more cascades in fine form until an unexpected sump, *La Frontera*, brings a premature end to the proceedings. This sump may potentially be freediveable. For non diving cavers the way on is up a short pitch, originally a bolt climb, that has been left rigged 15m back from the sump. After 5m this enters a small muddy rift from where an even muddier ascent gains a window in a narrow flake of rock and matching pitch down the other side. A slimy chimney climb down gains a fine fossil passage some 2m wide with marches off above the sump. Dry progress is hampered by a thigh deep pool that blocks the passage although stepping stones on the left hand side combine with slightly submerged ledges and/or bridging techniques to reach the other side. From here a short pitch down regains the mercifully quiet streamway.

Pitch	Rope	Belays
Grandmaster Faff	25m	Thread backup, 3 spike backups on climb, bolt belay (-6m), bolt deviation (-11m)
La Frontera up	10 m	Left rigged in 2003
La Frontera down	10 m	Left rigged in 2003

La Frontera to Mirador del Echo

A comparatively straightforward section of stream passage soon arrives at the top of an impressive cascade the first 10m of which is free climbable. A traverse is soon made on the left to evade the path of the water and this leads to the head of a superb 32m pitch, 'D', which marks the place where the cave passes 500m in depth. The 10m diameter shaft stretches out into the distance but from its base the water has cut down in another short series of cascades until it flattens out for several hundred metres of peaceful stream passage. Progress here is still not trivial as the floor is often highly polished grey limestone with pools waiting to fill your welly should you slip. The walls also lean from time to time as the stream negotiates a succession of meanders requiring the use of arms as well as feet to make 'walking' progress. The first phase of the horizontal streamway is brought to a close by the 15m *Elephant Pitch*, a slightly awkward takeoff rigged primarily from naturals which lands next to another splashy pool in a chamber typical of the streamway. By now the cave seems to have settled upon a resolute north-easterly course, albeit still with a few minor meanders.

Another long section of stream, with a few short cascades, follows much as before until it narrows slightly and descends to the head of a 5m pitch, *Croco-piggy*. A ledge here offers a serviceable but unpleasant campsite. From the base of *Croco-piggy* an area of collapse offers the opportunity to traverse briefly above the water although this is not necessary and feet can stay dry if care is taken. Very quickly a more substantial pitch is met, *Dr. D's Proboscis*. At 20m this pitch is both longer and drippier than most of the streamway's preceding drops. A huge natural and bolt provide the main hang but then deviations are relied upon to avoid the worst of the water and tying the rope off at the bottom gives some added protection. From the base of this pitch a short section of streamway leads to the *Mirador del Echo*, a draughty viewpoint over a fine spacious shaft series, the cave's latest change in character.

Pitch	Rope	Belays
D	70m	Spike backup, climb/traverse on bolt y-hang, bolt y-hang at pitchhead
Elephant	25m	Thread backup, bolt traverse, wire spike belay, tape deviation (-10m)
Croco-Piggy	20m	Natural Y hang
Dr D's Proboscis	30m	Bolt + natural Y hang, 2 Deviations

'Til Hil Freezes Over to Los Lagos

The first pitch of the shaft series, *'Til Hil Freezes Over'*, plunges 35m to an extremely draughty chamber where a tight pendule swings you away from the collection pool at the bottom. With the roof out of sight and the walls maintaining the shaft width a clamber up onto boulders leads directly onto the second pitch, *Divine*, which lands 10m later in a slightly smaller but no less draughty chamber. At first it appears the passage is about to resume its horizontal character but a clamber down and around a corner reaches *Retribution*, another spacious 35m pitch, with a superb setting and roomy landing. Edging around the plunge pool gives access to a less draughty dry oxbow from where a short traverse reaches yet another pitch head, *Atonement*. This lands 12m below in a circular chamber and a clamber down to where the next pitch, *Ferki's Folly*, may be observed nestling at the end of a short 1.5m diameter phreatic tube.

10m down, a very short section of Yorkshire style rift has been cut into the floor of the chamber and there is just room for three people to stand before the 10m pitch, *Patience*. This disappears around a left hand corner to land on a spray lashed boulder pile 8m below. Although the top of the boulder pile is comparatively dry a quick dash down is less so until the rift continuation is reached, and another 10 metre pitch, *Mona*. The cave now changes character again to horizontal streamway, *(The Long Dark) Streamway of the Soul*. However, the narrower nature of the rift, typically 0.5m wide, together with its apparent straightness suggests that it is strongly fault controlled. Progress is mostly easy and rapid except for where a long thin boulder enforces a crawl followed by a short climb up and over a thin curtain of choss rock that almost blocks the lower section of the passage. The rift briefly turns phreatic

in character as the roof sweeps down and the walls consist of deep, washed out shale beds. [The phreatic tube rises enticingly and may well continue independently of the rift passage which has been carved out below - this may even account for some of the draft felt at this point...]

The rift passage continues as before to the final pitch so far explored, *Enlightenment*. This is only short and lands in another similar rift which continues much as before. The *Comedy Obstruction Barrier* provides a brief moment of absurdity as a pair of inch thick choss curtains reach out across the passage leaving a gap of between 2 and 4 inches width and about 10 foot high. The climb up and over is easy but care should be taken as it would take a long time to crawl out of here with a sprained ankle. Not much further on the water slips silently into an abrupt pool where the floor just steps away. On the left fist sized colourless octahedral crystals occupy a ledge which may be climbed onto for a view across the pool.

Pitch Rope Belays

Til Hil Freezes Over	70m	?
Divine	”	?
Retribution	40m	2 naturals, 1 bolt deviation
Atonement	20m	2 naturals
Ferki’s Folly	20m	2 bolts
Patience	15m	?
Mona	15m	2 bolts
Enlightenment	15m	?

Rope lengths for this section were not measured and are approximations. Although they err on the side of caution future expeditions should not accept them as gospel and carry an extra length of rope, which may be chopped and added to the lengths above as necessary. Due to the haste of de-rig ropes under 30m were left in this section, and may remain in useable condition. However, this should not be relied upon.

Los Lagos to Pozu Asopladeru la Texa

A climb up above the crystals leads to a ledge above the pools, from which a pendule is used to reach a small patch of rock between pools 1 and 2. Unfortunately pools 2 and 3 are sump pools, and the route is a prussic up an in situ rope into a tube in the roof. This is split by a rebelay 12m off the floor [here a small chamber in the right-hand wall leads to a tight crawl, in which two drafting tubes in the floor remain to be pushed], before ascending into a small chamber via an awkward prussik in rift. An adjacent chamber leads to an obvious muddy squeeze of a distinctly sphincteral nature, *Popabawa Bypass*. Having slithered through the freezing mud a short drop (1m) leads to a short section of walking passage. The way on is to the right, where after 10m a small pile of boulders is found, beyond which a small ledge perches above the 50m *Pearl* pitch. The bolts here should be checked carefully, as should those at the head of the bypass rope.

At the bottom of *Pearl* water enters from a cascade ~15m above the floor, and a short section of streamway leads to the 2m *Necklace*, which is too awkward to free-climb. Beyond *Necklace* the stream cuts down into a clean-washed trench, and after 30m of twists and turns the floor begins to drop away. A traverse above the stream turns a corner and leads to the 20m pitch *Shark’s Teeth*, a pot with washed-out shale beds for walls. A splashy landing is followed by more streamway, broken by a 5m climb, before emerging into the enormous aven *Battle of the Deities*, some 15m in diameter. Here more water enters, possibly from *Popabawa* sump, and a wide, grandiose streamway leads off deeper into the cave.

After ~300m the streamway, with no visible roof and over 8m wide in places, narrows, quickens and pours over the edge of a 12m cascade, *Fenris*. A 5m climb up about 5m back from the cascade gains a traverse level, from where it is possible to rig a descent free of the

water and without need for deviations. The landing is a 5m diameter splash-pool, and an obvious, tight rift offers the only way on. Barely 10m along this rift and the floor once again drops away. A 6m climb up leads to a balcony, overlooking a large and spectacular shaft ~6m x 10m. From this ledge the final pitch of Pozu Julagua, *Ragnarok*, follows the right-hand wall down to a false floor of boulders jammed in the rift. This is Pozu Asopladeru la Texa, a fact confirmed by a short climb up and over the boulders away from the Tormenta streamway, which reveals a blue hanger, La Texa XXX, embedded in the left-hand wall.

Pitch Rope Belay

Los Lagos	20m	Thread back-up, bolt hang, natural rebelay, bolt rebelay
Pearl	65m	Bolt, bolt, bolt y-hang, spike deviation -4m, bolt rebelay -32m, bolt rebelay -36m, bolt rebelay -46m
Necklace	10m	2 naturals
Shark's Teeth	40m	2 naturals, bolt y-hang, natural rebelay, natural deviation
Climb	15m	Bolt, natural
Fenris	35m	Thread natural, bolt y-hang, bolt rebelay
Ragnarok	55m	2 naturals, bolt hang, bolt rebelay, wire rebelay

Rope lengths for this section were not measured and are approximations. Although they err on the side of caution future expeditions should not accept them as gospel and carry an extra length of rope, which may be chopped and added to the lengths above as necessary. The rope at Popabawa bypass was left in situ and should be checked carefully before use.

Rob Garret and David Legg

Bibliography

Works and web resources relevant and related to the expedition, with comments.

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Warrell, David and Anderson, Sarah (eds.), *Expedition Medicine*, 2002 – THE work on the hazards of expedition and how to deal with injuries in the field.

Swart, Peter, *Caving – the Essential Guide to Equipment and Techniques*, 2002 – An introduction to the methods used for exploration underground.

<http://www.oucc.org.uk/index.htm> - The OUCC website, which includes expedition reports from 1967 onwards, OUCC Proceedings and a catalogue of the OUCC library, which includes copies of the above works. See the links section for a wide selection of web resources relating to the Picos de Eurpoa and the exploration of its caves.

<http://www.oucc.org.uk/technical/techmain.htm> - Technical reports relating to safe caving practice and underground radio use, amongst other things.

http://users.comlab.ox.ac.uk/gavin.lowe/Caving/rescue_intro.html - A guide to proper rescue procedure written by OUCC’s Gavin Lowe.

<http://www.rgs.org> – The Royal Geographical Society website, which includes a full list of expeditions supported by the Society, details about the grant application procedure and a guide to writing expedition reports. An invaluable resource for explorers.

<http://users.ox.ac.uk/~acirvine/> - The A C Irvine Travel Fund website. Details on the Fund, which provides financial support for undergraduates undertaking adventurous expeditions, and its grant application procedure.

<http://www.bcra.org.uk/gpf/index.html> - Website of the Ghar Parau Foundation.

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