

Oxford University Cave Club Cabeza Julagua Expedition

28th June – 20th August 1993

Final Report

Edited by Paul Mann and Gavin Lowe

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Expedition Members

Expedition Committee

Leader:	Paul Mann
Treasurer:	Sean Houlihane
Secretary:	Sam Bunting
Equipment Officer:	Dave Bell
Expedition Nurse:	Joan Arthur ¹

Members

Ilka Agricola ²	Gerhard Niklasch ²
Arany Andi ³	Steve Phipps
Richard Barnes	Jim Ramsden
Fenella Brown	Steve Roberts
Chris Densham	Tony Seddon
Rob Garrett	Harvey Smith
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Gavin Lowe	Németh Zsolt (Kutya) ³
Nyerges Miklós (Moha) ³	

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¹Did not travel to Spain

²Verein für Hölenkunde in München e.V., Germany

³MAFC Speleo Club, Budapest, Hungary

Introduction

The expedition left at lunchtime on the 28th of June, and travelled through France and Spain to arrive at Los Lagos late the following evening. Three days later the first trip rigged the entrance series of our objective cave, 8/11 or Pozu Sierra Forcada. During the next week, the rest of the cave was rigged, and a lot of effort put into fully equipping the camps.

Once 8/11 was fully rigged, exploration commenced. Big Wind, the passage reached at the end of last year's expedition, was followed, and soon dropped back to the main streamway beyond the sump. Easy exploration didn't continue for long: the main stream passage led to a series of small muddy sumps. Our high hopes for a link into Pozu Cabeza Muxa, which would have given a one kilometre deep system, were slowly eroded: with subsequent trips it became apparent that the cave seemed to have come to an end at a depth of only 156m. All that exploration yielded was a number of connections back into known passage.

A surface survey tied in the surface features with the cave beneath, most importantly revealing that a line of springs at Vega Mohandi were only metres away from the cave's lowest reaches. This survey also led us to several new caves, two of which we were able to connect into the cave: Pozu Mohandi (26/11) provided a very quick route into the bottom of the cave, facilitating the final explorations of the system and subsequent surveying; Entrada del Raptor (23/11) on the other hand provided a very difficult link into the middle section of the cave. Nearer the main 8/11 entrance, another cave was entered, The Tradesman's Entrance (20/11), which linked into the upper part of the system, providing an easier way in.

When we had completed this year's explorations, we had extended the cave to over 2km in length, tied in four entrances, and had learnt a lot about the hydrology of the area.

Meanwhile, the realisation that a Spanish group, the SIE, had discovered a cave that they had named Pozu Cabeza Julagua—our original name for 8/11—sparked a major hunt. Eventually this cave was found, numbered 8/13, and investigated. Two passages not marked on the survey were discovered: the first had obviously not been entered, but led down to a chamber that had been (although no other way in could be seen); the second was genuine virgin territory, leading to a passage extremely well decorated with all sorts of stalagmitic formations, most notably its glassy clear stalagmites and cascades.

Elsewhere near Ario finds were made in Xitu, Pozu Optimisto, and Pozu los Texas. Several new caves were discovered, and many of the SIE caves were relocated.

A two week reconnaissance trip investigated leads at Top Camp, high up in the mountains. Snow levels had continued to drop, making access possible to several previously snow-choked entrances. The most impressive cave explored was F57, Cueva del Arco, a large arched entrance which in previous years had been completely buried by snow. This cave was descended for 150m down a snow ramp until the cave appeared to end, although there may still be a way on under the snow. Another cave, F41, was descended to a depth of 80m, with the end apparently wide open. Other promising entrances were found, but not descended due to lack of time. Plans are already being made for a return expedition to investigate these caves.

The end of expedition came too soon for many of us, yet people still continued to put a lot of effort into the tasks in hand. The caves were for the most part derigged in an efficient manner, the gear carried back to the Los Lagos roadhead in ever larger loads, and with plenty of time to spare, the van was loaded for the return journey home.

Paul Mann

Expedition diary

28th June	—	First expedition members and expedition vehicle leave Britain.	—
29th June	—	Expedition arrives at Los Lagos. Base camp established at Lago Ercina.	—
30th June–1st July	—	Gear carried up the hill; camp established at Ario.	—
2nd July	8/11	Cave rigged to fourth pitch.	FAB SB TSH
3rd July	8/11	Cave rigged to Very Big Chamber.	RG PMM HS
3rd July	8/11	Bolting and SRT practice.	TSH CV
4th July	8/11	Rigged Wet Cheeks Rift.	FAB TSH HS
4th July	Shaft in Ario bowl	SRT practice.	SB PMM CV
6th July	71/5	Cave dug open and bottomed.	FAB PMM CV
7th July	8/11	Rigged Fever Pitch.	RG TSH HS
7th July	Area 11	Surface survey to 8/11.	PMM CV
9th July	8/11	Rigged The Unwell.	FAB TSH HS
10th July	8/11	Rigged to limit of exploration and pushed to top of Last Pitch	SB RG GL PMM
11th July	Area 9	Discovered and bottomed 18/9; discovered 19/9–21/9	RB GL
11th July	16/4	Descended and bottomed cave.	TSH CV
12th July	8/11	Surveyed up to top of Last Pitch.	RB GL
12th July	Culiembro	Dye detectors placed.	DRB PMM
12th July	16/4	Surveyed cave.	TSH CV
13th July	Area 9	Bottomed 20/9 and 16/9A.	RB GL HS
13th July	Hoyo La Madre	Dye detectors placed.	DRB
14th July	8/11	Explored inlet near sump. Rigged Last Pitch.	RG PMM HS
14th July	Pozu los Texas	Started rigging shaft.	TSH
14th July	Rio Casaño, La Molina	More dye detectors placed.	DRB
15th July	Areas 4 and 13	Found 29/4–33/4; failed to find 28/4 or Bufona.	GL

15th July	Rio Texu	Unsuccessful attempt to place dye detectors.	DRB TSH
16th July	8/11	Pushed and surveyed to Mud Sump.	RB SB GL
16th July	Pozu los Texos	Finished rigging cave; placed dye detectors; spotted promising looking tubes.	DRB TSH
17th July	69/5	Dug.	RB GL
17th July	Area 4	Found 28/4 and 34/4.	RG HS CV
17th July	Rio Texu	Placed more dye detectors.	TSH PMM
18th July	Area 7	Bottomed 41/7.	RB RG
18th July	28/4	Bottomed main route in cave.	GL HS
18th July	8/11	Checked out Lower Streamway area; found streamway below Big Wind.	CJD JAR ADS
18th July	Pozu los Texos	Climb examined.	DRB TSH
19th July	8/11	Discovered Sportive Gods, and connected it to Blue Bag Chamber; climbed into fault passage above sump.	CJD ADS
19th July	16/11	Cave bottomed.	RB HS
20th July	8/11	Dug the Dry Sump, which was wet.	GL
20th July	Area 11	Found 18/11, 19/11.	PMM JAR
20th July	8/11	Explored fault passage above sump.	RG ADS
21st July	69/5	Continued digging. Rift seen heading off at bottom.	RB GL
21st July	8/11	Connected stream below Big Wind to bottom of Last Pitch; surveyed Lower Streamway; found passage above final streamway; started climb above Mud Sump.	TCG CJD JAR ADS
21st July	Pozu los Texos, Rio Texu	Changing dye detectors.	TSH
22nd July	8/11	Explored large fault passage above Big Wind.	TCG ADS
22nd July	8/11	Acclimatization trip to Very Big Chamber.	RB SJP CV
22nd July	Areas 4, 11 and 13	Found 20/11-23/11, Pozu Cabeza Julagua (8/13) and 9/13	PMM JAR
23rd July	69/5	Continued digging. Side rift enlarged; black space visible beyond.	SB RG GL SJP
23rd July	8/11	Pushed leads from Blue Bag Chamber to choke; continued climb above Mud Sump—pinched off; climbed up further back—all routes choked; penetrated into another high level rift.	CJD ADS

23rd July	Pozu Cabeza Julagua	Rigged cave and discovered Wet Dreams.	TCG PMM JAR
24th July	69/5	Pushed through rift to discover 5m of passage, with continuation hopelessly choked.	RB SB GL SJP
24th July	Area 11	Surface survey; found 24/11–28/11; end of 8/11 found to be very close to resurgence at Mohandi.	RG JAR
24th July	Pozu los Texas	Started bolting climb.	DRB TSH
25th July	28/11, 26/11	28/11 dug open—no way on. 26/11 pushed and connected into 8/11 near Mud Sump.	RB RG GL
25th July	Pozu del Raptor (23/11)	Descended entrance pitch to head of next pitch.	TCG SJP JAR
25th July	26/11	Recovering rope to use in Pozu del Raptor.	TCG SJP
25th July	Pozu del Raptor	Descended next pitch and pushed streamway to P_{MAX} corner.	TCG SJP
25th July	26/11	Surveyed Pozu Mohandi and high levels above final streamway.	CJD ADS
25th July	Near 56/5	Looking for new entrances.	SB CV
26th July	Areas 4 and 13	Unsuccessful search for Bufona. Found 34/4 and 29/11.	GL
26th July	26/11	Surveyed bottom of fault above sump.	PMM ADS
26th July	26/11	Surveyed 26/11 entrance.	SB CJD CV
26th July	Area 4	Lost boot on way to above trip, so jacked. Got lost on way back, and found 37/4.	CV
26th July	Pozu Cabeza Julagua	Surveyed and photographed extensions; detackled cave.	RB RG TCG
26th July	Pozu los Texas	Finished bolting climb—no way on at top.	DRB TSH
27th July	Pozu del Raptor	Surveyed previous extensions, and connected cave into Wet Cheeks Rift in 8/11.	TCG ADS
27th July	36/4, 9/13	Bottomed both caves.	RG TK NM SJP JAR CV NZ
27th July	Top Camp	Established Top Camp.	GL
28th July	8/11	Through trip to 26/11.	AA RG NM SJP SGR NZ
28th July	8/11	Photography trip.	RB TCG TK JAR

28th July	Xitu	Rigged entrance pitches.	DRB TSH
28th July	Area F	Relocated F19, F22, F23, F24, F25, F27, F33, F34; discovered F55 and two entrances near F38.	GL
28th July	Optimisto	Rigged cave to previous limit; passed squeeze at end to discover 50m of passage ending at sump, with possible diggable bypass.	CJD ADS WJS
29th July	20/11	Pushed 20/11 to connect with 8/11 at three way junction; derigged 8/11 entrance series.	PMM NM NZ
29th July	Optimisto	Various leads examined.	CJD TK ADS
29th July	Pozu del Raptor	Photography trip.	RB RG TCG
29th July	26/11	Photography trip.	RB RG TCG ADS
29th July	Area F	Relocated F5, F13, F14, F41, F43; discovered F56.	GL SGR
31st July	Xitu	Rigged to Customs Hall; lead found at top of Blue-water II.	NM WJS NZ
31st July	20/11	Dug in Very Big Chamber.	AA TK SJP CV
31st July	F43	Bottomed cave.	RB GL
31st July	Area F	Discovered Cueva del Arco (F57), F58	RB GL
1st August	Xitu	Rigged to the top of The Gap; pushed lead in William's Bit for about 50m.	PMM WJS
1st August	Xitu	Leads from previous day explored, but all ways soon stopped.	NM NZ
1st August	24/11	Bottomed cave.	RG TK SJP
1st August	Cueva del Arco	Pushed cave down 150m snow slope, and up climbs at bottom.	GL SGR
2nd August	Pozu del Raptor	Continued survey.	RG PMM
2nd August	Optimisto	Derigged top half of cave.	TK SJP
2nd August	Cueva del Arco	Rerigging trip.	RB SB
3rd August	Xitu	Pushed lead in William's Bit, and discovered Mud Sump.	AA TK CV NZ
3rd August	Xitu	Traversed across pit at previous end of William's Bit, to discover choke.	NM SJP WJS
3rd August	Cueva del Arco	Rerigged cave on a single rope; surveyed previous finds; dropped pitch at end—no way on; surveyed extension.	RB SB GL

4th August	Xitu	Pushed lead above Mud Sump to find about 100m of passage, Budapestiential Rift, ending at pitch.	TK NZ
4th August	Pozu del Raptor, 22/11	Derigged cave.	RG CV
4th August	F54	Rigged entrance shaft, and followed rift to terminal choke.	RB GL
4th August	Cueva del Arco	Checked a few leads—no way on found.	SB SGR
4th August	F60	Cave discovered and bottomed.	SB SGR
4th August	F41	Rigged first three pitches to a snow slope.	RB GL
5th August	Area 11	Found 30/11 and 31/11	PMM WJS
5th August	26/11, 20/11	Surveyed connection with Pozu del Raptor; detackled Wet Cheeks Rift.	PMM WJS
5th August	26/11	Descended pitch at end of large fault passage to find chamber and pitch with 7 second rattle.	RG SJP
5th August	F41	Rigged snow slope and discovered next pitch.	RB GL
5th August	F5	Bottomed cave.	SB SGR
7th August	20/11	Dug Dry Sump	GL WJS
7th August	Xitu	Tourist trip to William's Bit.	AA TK
7th August	Xitu	Dropped pitch found on previous trip, and discovered sump. Descended pitch in rift, but route became too tight.	NM NZ
8th August	20/11	Dug Dry Sump	GL WJS
8th August	F41	Rigged next pitch and discovered rift with 2-3 second rattle; derigged cave.	SB SGR
8th August	F48	Rigged entrance shaft; followed meandering rift for a bit.	IA GN
8th August	F46	Pushed entrance shaft; found tight rift.	IA GN
9th August	Wiggly Cave	Rigged and bottomed cave.	RB GL
9th August	20/11	Carrying gear out of cave.	AA NM NZ
9th August	F14	Cave explored and bottomed.	RB SB SJP
9th August	Area F	Discovered F59.	RB SB SJP
9th August	Cueva del Arco	Cave photographed and derigged.	IA GN SGR
9th August	F42	Cave discovered and labelled as F59	IA GN SGR
9th August	Areas 7 and 9	Discovered 48/7 and 22/9.	SGR

10th August	Xitu	Surveyed and detackled Mud Sump extension.	RB WJS
10th August	Area F	Discovered F62 and F64	RG SB SJP
10th August	Area F	Bottomed F31, F42 and two unmarked shafts.	IA AA TK GN
11th August	Xitu	Surveyed Budapestiential Rift; detackled back to start of entrance shaft.	RG SGR WJS
11th August	20/11	Dug Dry Sump.	GL SJP
11th August	Texos	Derigged cave.	AA NM NZ
12th August	20/11	Dug Dry Sump, derigged cave.	RB GL
12th August	26/11	Surveyed Fault Passage; derigged cave.	SB RG SJP
12th August	Top Camp	Camp derigged.	IA GN
13th August	Xitu	Derigged cave.	RB SB PMM GN SJP
13th-15th August	—	Gear carried down to Los Lagos.	—
16th August	—	Van leaves Los Lagos.	—
20th August	—	Van arrives back in Oxford.	—

Gavin Lowe

Warning

15/5 has acquired a new resident. He/she (gender unknown) as about half a meter long, thin, brown and legless with a darker zig-zag pattern running lengthways. He/she may answer to the name of Adonis the Adder.

Preferred location would seem to be anywhere you would like to put your hands/feet/other parts of your anatomy, as well as any cracks and crevices found around 15/5!

This shy individual prefers not to make his/her presence known until it is most awkward.

He/she is most easily offended and is most disposed to venomous and biting criticisms of clumsy and unobservant wanderers.

So, do tread carefully around 15/5, and don't get caught with your trousers down: you have been warned!

Rob Garrett

A novice's point of view

"Are you going to go on expedition this year?"

"I don't know," I replied smiling politely, "What is it?" I was still struggling to settle in at Oxford with its overwhelming multitude of societies, not to mention the work, but already people at the Cave Club were encouraging me to make plans for the summer.

"It's really good, you should go." This did not really answer my question and outlandish conversations about 2/7, 8/11, Cabeza Julagua and Xitu offered little enlightenment. Nevertheless, by February I'd been persuaded that this really would be a good way to spend my Summer and started making arrangements.

Having been on only a few previous caving trips with the club I now had to manage the gear order! Not really knowing what I needed, I was relying heavily on advice. Fortunately this was plentiful although frequently contradictory: should I get a furry or fleece? Which type of sit harness? How many snaplinks and krabs? etc. (Don't mention the expenses!)

With that all sorted and a sack full of caving gear sitting in my college room, I just had to pass my Mods and wait for the Summer. I had decided to travel with the expedition, thinking this would be less stressful. Then I found out I was needed as the fourth driver for getting across France to the Picos (apparently they are in the north of Spain somewhere). Moreover, those travelling with the expedition get to load and unload the minibus and trailer, as well as carry all the equipment the two hours between Los Lagos and Ario, not to mention the car batteries and radios. This would have been less of a problem had the continuous rain and fog cleared a week earlier.

There are a few ways to help oneself up and down the mountainside. These include listening to your personal stereo, remembering that you only get a steak sandwich if you arrive before the bar closes, smiling politely at the Spanish while they babble at you before you explain that you only speak English (this also works with Americans); and reciting from *The Complete Works of Shakespeare* for the benefit of the sheep.

Food was another surprise as, having never before been restricted to a vegetarian diet, I knew not what to expect. As it turned out vegetable stew is quite good . . . in moderation! Thanks to our sponsors there was a plentiful supply of the versatile Mornflakes and fudge—also excellent in moderation.

With its preoccupation with all conceivable forms of rift passage, the caving itself was unlike anything in Britain. Once the rigging trips had been completed pushing new cave could begin. 8/11 turned out to be lacking the classical vertical development found in the Picos, although my one trip down Xitu showed me what I was missing. However, pushing in caves with horizontal development does mean less time spent sitting around while someone rigs a pitch as everything is free climbable! Finding new passage does have its own set of problems, due to the abundance of loose rocks; so remember, when rocks are dislodged from above you, ducking is a waste of time.

Pushing new passage is perhaps best summarised by a quote from the Beatles' song *Everybody's got something to hide except me and my monkey*:

"The deeper you go the higher you fly
And the higher you fly the deeper you go."

After pushing comes surveying—I am told it can be fun but every trip I went on involved tight and technically awkward rift passages. We only dropped the tape once though, and it was later recovered.

The most notable thing about these caves is best appreciated on photographic trips, and that is not their beauty but their temperature. They are very cold, especially with the strong draughts that circulate through them. This contrasts with the surface temperatures which are best appreciated either when carrying food uphill or when shaft-bashing, the latter being the more rewarding on account of the views and new caves which are still to be found. This is particularly true around the Top Camp area, where I spent a few days which culminated in us finding F64: an entrance shaft down which stones rattled for more than eight seconds. Unfortunately there was no time to descend as derigging had to begin early due to an accounting problem that left us with two fewer minibus drivers.

The journey back was punctuated by a day at the beach which provided a much needed opportunity for washing before catching the ferry, all the better because it did not involve walking for half a kilometre to fetch water. Just as one of the best things about caving is the emerging from cold darkness into warm sunlight, so too with the expedition is the realisation after your first bath for eight weeks how great it is to be clean and to have your own comfortable bed again.

Rob Garrett

A Personal View

"Damn! It just seems to end" shouted Gavin.

I abseiled down to where Gavin was standing. Sure enough, our potential 'Very Deep Cave' just seemed to end in a solid wall, 150m from the surface.

Gavin Lowe and I had discovered 'Cueva del Arco' a couple of days previously. The enormous entrance and huge draught suggested a deep cave. Gavin and Steve Roberts had put in 200m of rope on the first trip. However here we were, two days later, at a solid wall with no obvious way on.

It was my fifth week on expedition to the Picos de Europa, thanks to a grant awarded by the Alex Pitcher Trust: the trust awards a grant to a young caver to travel on an expedition or to participate in a training course; receiving the award meant that I was able to stay for the whole expedition.

The expedition had started well with high hopes for a cave discovered the previous year, Pozu Cabeza Julagua. Seeing the cave for the first time was enjoyable: although only a two hour trip to reach the surveyed limit, the cave had its fair share of squeezes, awkward rift, large walking passages, and the obligatory boulder choke.

I took part in the early pushing trips from the previous year's limit. We were all hopeful that a big shaft series might take the cave really deep. However, hope began to fade when we discovered an old sump now filled with mud. It didn't look promising! Subsequent trips failed to discover a way over the top and a surface survey seemed to suggest the cave was resurging close by.

So it was on a rare drizzly day that Gavin, Rob Garrett and I went to look at an entrance 50m above the resurgence. A quick look down and it seemed to be going. Gavin had a proper look. After removing a large boulder he found himself wedged above a large drop. He extricated himself and we rigged a rope. The drop turned out to be 30m deep. Shouts of jubilation came from Gavin as we followed him down. We were standing a few metres from the mud sump we'd discovered a week before. 8/11 was now a system! This proved to be the first of three more entrances into the cave.

All that was left to be done was tie up the few remaining leads in the cave, survey and take some pictures. During one of the more enjoyable evenings in the refugio I volunteered to help Tim Guilford on his photo trips down 8/11. Forty eight hours later I was freezing to death, eight hours into the first of two epic photo trips. However, at least we managed to take some good pictures and avoid a massive thunder storm which destroyed four tents.

The next week was spent at Top Camp which is situated high in the mountains. The area has received hardly any attention since 1986 when snow levels were a lot higher. It still amazed us though when we found a massive going cave so soon. Three days later however Cueva del Arco seemed to end. With time running out we didn't have time to give all the leads the attention they deserved. A return to the cave next year may prove worthwhile.

The rest of the week was spent 'shaft-bashing'—in many ways the type of caving I found most enjoyable and exciting. There is the buzz of pushing new cave and always the chance of finding something really big. A number of good leads were discovered which will give next year's expedition plenty to look at.

We were all needed down at Ario in the last week of expedition where there was a great deal of surveying and detackling to be done. I had a couple of trips down Xitu—the cave where it all began—detackling and surveying the new bits that had been discovered. It was an enjoyable end to a fantastic trip which left me longing to return to the Picos and its caves next year.

Thanks must go to the Alex Pitcher Fund and to all the cavers who took part in such a friendly and worthwhile expedition.

Richard Barnes

An expedition leader's view

It was my last caving trip of the expedition, and what an excellent trip; pushing through the tight pitch head, and then on down the cave, free-climbing all obstacles, searching and eventually finding the outlet stream, and then coming to the head of a teasingly small pitch; beyond I could see the chamber with its rocky floor stretching out. Steve Phipps joined me; we ate a pack of peanuts whilst contemplating our return journey, especially that 25m ladder pitch with its constrictions.

I buzzed with enthusiasm the next day as the FEVE train wove its way along the coast taking Richard on his way to Leeds and me on mine to Africa. It was so irritating to have to leave an expedition so early, especially when so much was going. I'd had a taste of Tantalus, The Paris Metro, and then Tarpaulin Cave, each so brief.

Two months later I arrived back in the UK just in time to attend the BCRA conference. A kilometre of cave from both The Paris Metro and the now so called Pozu Cabeza Julagua, and there hadn't been time to look at Tantalus again! I jumped for the opportunity to lead the 1993 expedition: I wanted to make sure I had my place booked well in advance.

Then came the long winter nights, planning the expedition, writing for permits and for funds, and endless pondering of spreadsheets that never exactly answered any question I had to ask. The days grew, counting down to the summer, and I juggled schedules for study with schedules for expedition.

Departure day came, and we went; a mammoth drive through France with two vehicles and a handful of drivers brought me back at last to the Picos.

Everyone seemed as determined as me to get down to the business of exploration. By the end of our first week I felt ready to drop, but still people went on caving, heroically taking on our Pozu Cabeza Julagua despite the general inexperience of most of our advance team. The

appearance of new faces to the expedition as the days went by invigorated all of us, spirits kept high despite the closing in of all the leads at the bottom of the cave.

Finally we came to our full compliment of members, including two stowaways with Chris Densham and Jim Ramsden—they being Tony Seddon and our trusty camp guard Roger the Stegosaurus—and a delayed and reduced team of cavers from Hungary: Moha, Pivo, Kutya and Andi. Alas, to my regret, tensions grew between two factions of the expedition, and the advantages of a two camp expedition were shown as Dave and Sean entrenched in at Los Lagos. It delighted many of us to find Tim, with unconscious foresight, missing out base camp and arriving directly at Ario. The refugio was a much needed sanctuary at Ario, the evenings drinking carton wine in there were a real moral booster, especially when I thought things looked bleak; I was soon made to realise I was alone in that outlook.

Enthusiasm ruled; we found the real Cabeza Julagua, winning me a bet! However, the beauty of Wet Dreaming (Tim's naming!), was prize enough for me. Then came the tying in of several new entrances to the now Systema Sierra Forcada. It was excellent to work on 20/11, finding an easy entrance to the system; it made me happy to derig the 8/11 entrance on the way out, a job well done, first in and last out. Surveying 23/11's lower reaches was an experience; Rob's coolness when lumbered with all my caving gear in the tightest parts of the cave was much appreciated. Then the dropping of the survey tape with only two legs to go would have made most men cry.

Then came Xitu and Optimisto; it was sometimes a shame that I had to try to deflect some of the enthusiasm away from the leading edge of the work, and into the essential chores of guarding camp, and surveying, photographing and derigging finished caves. Because of his expertise, William repeatedly visited Xitu, much against his better wishes, yet those of us who were then able to explore part of this fine system were very grateful to have such a master guide.

Again, I had to control the flow of people to Top Camp. In the end I only had an afternoon's walk there as I felt I ought to know exactly where it was. I too was taken by the breathtaking location amidst the peaks and potholes, and realised for myself why it was that people endured the rocky camp area, the snow melt-water, and the lack of a good refuge. I too wish to be amongst next years Top Camp expeditioners.

As expedition drew to its close, the fun of the big derigging trips commenced. Then I ruined the expedition's clean bill of health by picking up a stomach bug, and had to spend two days as a non-cooking camp guard, and missed out on a trip I'd been looking forward to, the derigging of Xitu's entrance series. I consoled myself by spending that day in the sunshine at Xitu's entrance helping with the rope hauling. With that done, our caving was finished and I was able to breathe a sigh of relief as there had been no major incidents to deal with. All that was left to worry about was the drive back through France: too much gear, too many people, too little space and too few drivers.

At the dinner we had at one of Jericho's curry houses upon our return, it seemed as though it were all over. Not so, there were surveys to be drawn, reports to be written, and accounts to be balanced. Then the cycle starts all over again.

Paul Mann

Pushing in the Lower Streamway

“Going back downstream, an inlet on the right led to some passage ending in a shelf at the side of a BIG PASSAGE heading off in both directions. After savouring the moment, and coaxing huge flames out of our generators, we strode off down the passage, discovering after approximately 5m a blue plastic bag. We had connected with the end of Big Wind.”

Chris Densham

Systema Sierra Forcada

Pozu Sierra Forcada (8/11) location and entrance series

From the Ario Refugio, follow the path that crosses the flank of Cabeza Julagua, skirting round above the Jou de Ario. After a while, the col between Cabeza Julagua and Cabeza de las Campanas will be seen; on the far side of this col is a valley, split near the top by a spur: the cave entrance is located in the right hand side of this spur: a large hole in the cliff with a perched boulder above, bushes growing from the sides, tarpaulin in the entrance and a faded SIE \oslash 84 mark. Bearings: Cabeza Julagua 126° , Cabeza de las Campanas 300° , Cabeza Forma 227° .

The 9m entrance pitch descends over boulders and lands on a boulder slope: this is somewhat unstable and should not be descended while other cavers are on the pitch below. At the bottom of the slope are two alternative descents on either side of a jammed boulder: the normal route is to the left, a 7m pitch. To the right at the bottom of the pitch is a chamber containing a snow plug: this is where the alternative descent route lands.

The way on is to the left where a short boulder slope leads to a 2m drop into a chamber—the normal place to wait while avoiding boulders knocked down from above. A typical Picos-style ascending rift passage leads to a slight squeeze—easily passed at roof level—to the top of the third pitch. The first 4m is constricted and is probably the hardest part of the cave. Descent is best made by clipping into the line with a cowstail and sliding down the rift, using your left hand on the ladder to control your descent. Where the rift bells out, the rope is tied off to a bolt so as to catch cavers who pop out of the tight part. The rift is best ascended by climbing the ladder to get into the tight part, and then using your left hand and foot on the ladder, your right hand on the rope, and your right foot on the rock, climbing the ladder one rung at a time. This can be made easier by removing gear and hauling it up on the ladder afterwards. Friends below can also help by providing foot holds for the right foot, and by guiding the left foot into the ladder.

From the bottom of the tight section, the pitch continues as a 21m abseil down the rift. At the bottom, a short traverse leads to a further 8m descent. Larger rift passage continues to a boulder pile at a three-way junction. The route from the 20/11 entrance is to the right. To the left at the three-way junction is a small chamber from where a 5m roped climb down a rift lands on boulders; from here the rope is deviated back underneath the descent route to give a short abseil into a chamber. Alternatively, going in the other direction from the deviation reaches a hole at the top of a 2m climb down to the floor of a passage, about 15m long and 3m wide. This ends in a steep slope, which can be climbed up for some way. At the base of the slope is a small crawl, starting about 1–2m up the wall, which becomes too tight, although there is an audible connection with the crawl to the top of Peanut Pitch (see below).

At the base of the rope is a chamber. Ahead closes down to a too-tight inlet, which communicates with a point reached by descending through boulders at the three-way junction. The way on

is to double back under the climb down into the chamber, following the stream: ducking under a boulder reaches the start of a crawl. The crawl starts off over sand, before the streamway cuts down suddenly to form a T-shaped passage: following the top of the passage soon leads to the top of Peanut Pitch.

Five metres down the pitch is a large ledge with a convenient pool for filling generators; the bottom two metres is normally free climbed. At the bottom is an unstable boulder slope with a choice of two ways on: ascending the boulder slope leads to Insalubrious Route; doubling back under the pitch and crawling through a choke is the way to Very Big Chamber: this latter route is the normal one taken.

Pitch	Rope	Rigging
Entrance pitch (P9)	40m	Tape round large perched boulder and tape over spike for Y-hang for descent down boulders; spike deviation for final hang.
Boulder slope	"	Thread belay.
Second pitch (P7)	"	Y-hang from two bolts.
Boulder slope and two metre climb	"	Thread belay.
Third pitch (C4, P21)	50m	Bolt and spike Y-hang, with ladder hung from spike for constricted section; 2 bolt Y-hang below constriction; spike deviation at -7; spike deviation on opposite wall 2m lower.
Traverse	"	Large boss, high up.
Fourth pitch	"	2 spikes on opposite walls, right-hand one high up.
Fifth pitch (C6, P5)	15m	2 bolts, bolt deviation.
Peanut Pitch (P7)	10m	Natural back up in roof; two jammed boulders.

20/11

The entrance is located 30m down valley from 8/11, on the left: a narrow rift, marked 'SIE ○'.

The entrance pitch (P10) has a slight constriction at the top, and lands on a boulder floor, from where the second pitch (P15) follows after 5m. From the base of the pitch, an ascending rift leads to the top of the third pitch (P13). Alternatively, doubling back under the second pitch, the rift soon closes down.

From the base of the third pitch, three routes lead off. Doubling back under the pitch, the rift closes down after 10m. To the left from the base of the pitch, also closes down, after 6m. The way on is straight ahead, up a boulder slope. At the top is a choke, but a passage leads off to the left to the top of an unstable climb down. At the bottom of the climb is a chamber; doubling back under yourself, a short passage leads to the top of the fourth pitch (P10).

To the left at the bottom of the pitch, a descending passage passes an inlet before ending at another inlet after 12m. To the right, the passage leads after 10m to the three way junction in 8/11, just before the fifth pitch.

Pitch	Rope	Rigging
First pitch (P10)	40m	Two threads; spike rebelay.
Second pitch (P13)	"	Spike backup; two bolt Y-hang.
Third pitch (P13)	20m	Bolt backup; bolt and spike Y-hang; spike deviation (replace with bolt)
Fourth pitch (P10)	15m	Boulder backup; bolt belay (needs second bolt).

Insalubrious Route

From the bottom of Peanut Pitch, ascending the boulder slope (handline useful) leads into The Big Chamber. To the right a 30m long, 45° boulder slope ascends to a boulder choke. Opposite the point of entry, a narrow rift leads for 5m to a mud choke. To the left, 6m above the floor is a balcony overlooking the chamber. The way on is below and slightly to the left of this balcony, where a crawl at floor level leads into a small chamber. Straight ahead leads to a choke after a few metres. Doubling back and climbing up boulders leads to the balcony. From here a 2m climb on the right leads to an ascending slope leading back away from the chamber, at the top of which is a further 3m climb up onto a calcite platform looking back down onto the chamber. A 1m diameter hole opens out into Insalubrious Passage.

Insalubrious Passage is 20m long and 8m wide and is the best decorated part of the cave found to date, containing many stal columns and with a moonmilk floor. A route along the passage is taped off. High up to the right at the point of entry is a hole back into The Big Chamber above some formations; from the top of the formations an exposed traverse out over the wall of Insalubrious brings you to directly underneath an overhang with a hole above; reaching this would involve bolting.

A passage to the left of the taped route through Insalubrious drops down a steep slippery slope to a mud choke. At the end of Insalubrious, a climb on the right to a promising looking hole unfortunately doesn't go. The way on is a crawl to the left by a small cairn. This leads into a 1.5m diameter passage which opens out at the top of a chamber with a sloping wall, Sloping Chamber. A rope can be rigged down the wall. At the bottom, a hole under a gravity-defying perched boulder is the top of an 11m pitch landing in Passage With No Name Yet.

From the bottom of the pitch are a number of possible routes. Directly opposite the pitch, a chossy climb down leads into a short rift which opens out into Very Big Chamber (see below). Upslope from the bottom of the pitch leads after about 15m to a drop into Very Big Chamber. The most obvious way on is along the passage, slightly downslope. Half way along the passage a triangular gap in the right hand wall gives a 2m climb down to 3m of passage, leading to a 45° descending, body-sized tube to an undescended pitch head. Above this hole is the route to Eleven O'Clock High and The Map Room (see below).

Slightly further on is a smaller hole. This is about 5m deep and can be free climbed with the aid of a rope. A shingle slope leads down at 45° and round a bend to a junction. To the right the narrow passage seems to disappear under the boulder ruckle forming the floor of Passage With No Name Yet, but was unexplored. To the left the passage continues for a short section to a wet two-way junction, with both routes on narrow and remaining unexplored.

At the end of Passage With No Name Yet, the floor drops away and a descending traverse line can be followed to a bolt, from where a descent can be made to a boulder a few metres above the floor. This is Rio Pequeño.

Alternatively, from the end of Passage With No Name Yet, a traverse on the right hand wall follows a small abandoned watercourse out above the upstream section of Rio Pequeño, through a

rock arch to a point where it is possible to climb down to the dry stream passage. Above connects to Eleven O'Clock High. A slightly exposed traverse then continues at this level to a short pitch into an inlet: this probably feeds Rio Pequeño, but was not descended.

Pitch	Rope	Rigging
Ascent of boulder slope into Big Chamber	10m	<i>Solid</i> boulder.
Scree slope in Big Chamber	30m	Large boulder.
Climbs up to Insalubrious Passage (C2, C2)	15m	Bolt; stal boss; spike; tied off to thread at bottom.
Pitch in Sloping Chamber (P8)	35m	2 thread belays; large boss.
Hanging Boulder Pitch (P11)	"	Bolt; spike deviation one metre down.
Descent to Rio Pequeño (P9)	25m	Thread backup; large spike for descending traverse; bolt re-belay for descent to jammed boulder; rebelay or deviation needed for final descent to downstream route.

Eleven O'Clock High and The Map Room

Just before the triangular hole in Passage With No Name Yet, a way through large boulders on the right leads to a 4m climb up through a hole in the floor of the passage to a junction: to the right leads to Eleven O'Clock High; to the left leads to The Map Room.

To the right a short, exposed traverse above Passage With No Name Yet is soon found leading into the start of a rift, Eleven O'Clock High. After 10m a junction is met: to the right an inlet leads to a pool with a too narrow climb above. The main passage continues to a second junction: a large inlet enters from the right; a climb leads to a larger, unexplored high level. The way on is up a 1.5m step into a large passage leading to a rift chamber. Ahead a pitch down has been visually connected to the dry, upstream section of Rio Pequeño. A steep slope to the right is unexplored. The way on from the rift chamber is a short traverse which leads to a step up into a rift passage, leading to another chamber. Ahead an undescended pitch again probably connects with upstream Rio Pequeño. To the right the passage continues up a steep slope into a high level connection with the previous chamber. An easy traverse passes a squeeze into an active inlet, leading to a rift with a boulder choked floor. The rift continues past formations, and a continuing traverse leads to a short climb down. Here the passage doubles back underneath and leads to a short pitch: this probably drops into Rio Pequeño near the sump. The passage continues from the climb down, round a corner, up a climb, before eventually closing down at a draughting choke.

Alternatively, to the left from the top of the climb out of Passage With No Name Yet, a hading passage continues for about 15m to a large, draughting, inclined rift, The Map Room. Here there are at least 2 leads. The first, a high, dry inlet reached after about 20m, contains detailed map-like wall markings, and continues past an oxbow. The second, reached after a further 15m, is a small active inlet entering from the right (with easily hammered route down) which goes upstream for about 25m to a junction. To the left is a climb to a hole. Ahead the passage continues for 20m to a slightly muddier section, which remains unexplored. The Map Room and passages leading from it are unsurveyed.

Rio Pequeño

From the boulder at the foot of the descent from Passage With No Name Yet, continuing straight ahead is the “upstream” route along an abandoned stream passage. After 20m of scrambling passage, a junction is met. To the right, a short climb leads to a few metres of passage ending at an aven: this connects with Eleven O’Clock High. To the left at the junction, the passage becomes more meandering until the roof shelves down into what must once have been a sump. This has been dug for about 6m along a pleasant, strongly draughting, tube; just before the limit the tube slopes down, goes under an arch, and then round a slight bend, which currently makes digging awkward; beyond the bend, the tube continues with about 10cm of airspace, and seems to be rising towards open passage.

Alternatively, from the boulder at the descent from Passage With No Name Yet, doubling back and continuing down to the floor leads to the start of the “downstream” route. After 8m is a small chamber with a picturesque false floor and a choice of two routes. To the right, under the false floor, is a passage taking a small stream; after about 2m this splits in two with both ways rapidly becoming too tight. To the left, a short crawl leads to the top of an annoying 3m pitch, called The Hundred Metre Pitch because of its depth rather than its length. To the left from the top of the pitch, a muddy crawl has been forced to a junction, but no further.

At the foot of The Hundred Metre Pitch, the passage turns into a meandering rift, El Meandro. A stream enters from the right: this can be followed upstream along a small passage which lowers to a hand and knees crawl; the water emerges from a wet, flat-out crawl with well sculpted mud banks. This route was not fully pushed and may connect with the streamway at the bottom of The Very Big Chamber. Following the water downstream leads after only a couple of metres to a smaller inlet entering from the left: this can be followed upstream for 5–6 m to a pool at the foot of a 2.5m climb with a seemingly passable crawl at the top. Continuing along the main rift, a traverse leads to a bold step, best rigged with a rope to help cavers with short legs. Just before the bold step is a draughting roof tube which has not been pushed. Ahead, the easiest route is to traverse at roof level, until the rift opens into a chamber. Down a Picos-style ramp to the left is an inlet at the base of a tall aven. To the right, a slot is the top of a 10m pitch.

The pitch lands in a chamber where the base of the El Meandro rift enters from one side. Part way down the pitch, a large passage leads off, but this soon drops back into the downstream continuation. Downstream, the passage can be followed mostly at floor level until a boulder choke is reached. This can be bypassed by climbing up into a grotto, from where a calcite squeeze leads into a well decorated passage, with a trench in the floor which after 5m becomes wide enough to descend back to stream level. A short crawl in the streamway is passed to a short traverse. A decorated passage to the right soon becomes too tight, but may deserve further attention. Ahead, the passage becomes more meandering until suddenly a sump is met. About 50cm underwater, a tube continues, sloping downwards at about 45°. The passage near the sump draughts quite well, so there are hopes of finding a sump bypass.

Pitch	Rope	Rigging
Hundred Metre Pitch (P3)	5m	Two bolts.
Bold step	5m	Two spikes
Second pitch in Rio Pe- queño (P10)	15m	Two spikes; deviation at -3m.

Very Big Chamber route

From the bottom of Peanut Pitch, a short, unstable boulder choke (care!) can be passed into larger passage. To the left, a short ascending passage leads to a choke: this can be passed to a further choke. To the right, the passage continues, along the bottom of a boulder slope, to a calcite platform at the top of a 10m pitch.

At the bottom of the pitch is a choice of routes. To the left, a large rift passage, Harvey's Rift, leads to a loose choke; a route through the choke has been followed for 10–15m, and deserves a more thorough investigation; alternatively, it may be easier to dig in the same direction from the top of the pitch. Doubling back under the pitch leads to the start of Rio de los Enfermos (see below). Alternatively, to the right from the bottom of the pitch leads into Very Big Chamber. This is about 30m long and 20m wide, split into two by a rock arch, and has a boulder floor sloping down from right to left. At the far end, low down to the left, a climb down through unstable boulders emerges in a stream passage, 2–3m high and a metre wide. The upstream route is blocked with boulders; downstream gets steadily smaller until a wet crawl is reached with nice mud formations. This streamway is believed to be the main source of the water in Rio Pequeño. Straight ahead in Very Big Chamber, a rift leads to a chossy climb up into Passage With No Name Yet. To the right, a slope leads up to a drop down from Passage With No Name Yet.

Pitch	Rope	Rigging
Pitch into Very Big Chamber (P10)	20m	Spike and bolt for traverse; spike belay; spike deviation at -2m.

Rio de los Enfermos

The route to Rio de los Enfermos starts as a walking sized rift passage. After 10m is a boulder choke; this can be bypassed by climbing up into the top of the rift (ladder useful). This leads out onto a boulder slope, descending to the left. Upslope leads to a hanging-death boulder choke. Downslope, a stream is encountered at the bottom of a very pleasant rift, Wet Cheeks Rift. After a while, chert is found on the walls. A few metres ahead is a bold step; this is best avoided by climbing up slightly from the chert to a much easier step. The rift continues, and becomes more traversey, until the passage opens out above a small chamber. Here a ladder can be descended to floor level; a short crawl in the stream is followed by a climb up to a ledge from where a ladder can be rigged through a window back down to the chamber.

Traversing along the rift, following a good draught, leads, past the junction with Pozu del Raptor, and via an oxbow, to the head of Fever Pitch. This is in two sections of 13m and 16m. From the ledge at the bottom of the first section a rift leads off; this can be followed for about 20m to the top of a drop which is believed to connect back into the main passage. A sizeable stream enters partway down the second section. At the bottom a climb up leads to the top of The Unwell, a 10m pitch. This lands in larger passage which runs under a large aven before closing down at the start of a traverse along Codeine Phosphate Rift. The rift meanders, with an awkward climb up on the second corner of an S-bend after 10m. A further 8m of traversing leads to the top of a 14m pitch, October.

At the base of the pitch the stream is met again. This can be followed upstream for a few metres via an oxbow and a pool, before the rift closes in. Downstream the passage continues as a pleasant, tall, meandering rift until suddenly the roof appears and a few metres further on a sump pool is reached. To the left an inlet enters: walking up this for a few metres, and then

climbing up and doubling back leads to a balcony looking back down on the sump pool: this is the start of a phreatic high level series, Big Wind.

Pitch	Rope	Rigging
Climb into Wet Cheeks Rift (C2)	–	Wire round chockstone; 4m ladder.
Descent into chamber	–	Bolt for 8m ladder (needs second bolt and line).
Ascent from chamber	15m	Natural backup; bolt for 8m ladder.
Fever Pitch (P13, P16)	55m	Two bolts; two deviations (this section needs rerigging). Thread belay on ledge; deviations at –2m and –4m.
Climb to top of Unwell (C4)	”	Two bolts.
The Unwell (P10)	”	Y-hang from 2 bolts; deviation.
October (P14)	20m	Spike backup; 2 bolts for Y-hang; spike deviation at –8m.
Step across sump pool	–	Tape through thread to provide handhold.

23/11: Entrada del Raptor

Located in the valley below the 8/11 entrance, about 40m lower in altitude. Walking down from 8/11 the entrance is to the left of the valley floor, just after the main valley is joined.

An obvious 13m shaft slopes to a critically steep boulder floor. This drops to a hole with a backward free-climb down an easy wide rift to a boulder chamber; arguably this climb should be laddered. At the chamber bottom, an obvious squeeze through unstable boulders leads onto another unstable, steep floor to a 2m climb down. Traversing the left wall leads to a ledge from where a 3m ladder climb drops to a boulder slope. At the bottom of the slope, the screaming void is crossed, to continue, over a hole, to an inlet that leads down two short climbs into a steeply sloping streamway on the left.

The streamway follows an easy going passage that eventually narrows before entering a small inlet chamber. The stream can be followed at floor level, leaving the chamber slightly to the right. Alternatively, a hole in the wall at a height of 3m, opposite the point of entry into the chamber, is an oxbow which provides an easier alternative. An easy squeeze up on the right leads into an oxbow, from where the route is obvious until you reach a Z-bend in the stream: an oxbow to the left is too tight, but allows useful legroom to facilitate a three point turn into this Z-bend squeeze, P-Max; this section inevitably involves getting wet. The rift is wider for a while, but the key is to climb up for about 4 or 5 metres at a prominent near vertical chert band. Two levels can be followed here, involving easy crawling and squeezing along gently descending rift levels until the rift bells out slightly. Continuing at the same levels through a tight rift, leads to two squeezes separated by an awkward corner, before the passage pops out immediately into Wet Cheeks Rift.

Pitch	Rope	Rigging
Entrance Pitch (P13)	20m	Tapes and wires to surface naturals.
Ladder Drop (P3)	—	Long tether to natural thread back up; natural belay for ladder

Big Wind

The passage starts as a pleasant 2m diameter phreatic passage, carrying a strong draught. A couple of side passages on the right are passed, these appear to head off over the sump but have not been explored. After 10m is a hole in the floor. Climbing 4m down through the hole leads to a choice of three ways: straight ahead, a squeeze down between loose boulders to a crawl, which is probably too tight; behind, a short, small passage to a sandy choke; to the right, a sandy crawl upwards which may connect with one of the previous unexplored side passages. The way on is to climb up above the hole for 5m to a window (rope useful). The passage continues and becomes more vadose. After 5m a descending passage, Pleasurable but Pointless, leads off, this ends after a short distance at a sump pool with submerged passage leading off in both directions.

After a further 15m is a choice of routes. A tube to the right can be descended to the Lower Streamway (see below). The original route was to follow the wind up a climb to the left. This route widens, and two holes lead downwards towards the sound of water: the larger of these can be descended for about 15m to a chamber, although this appears to only contain an inlet rather than the main stream. The passage continues, with a short and easy but exposed traverse, before reaching the 1992 limit in Blue Bag Chamber. Several side passages come in here: the first comes from the lower streamway; the second and third seem to be choked. Continuing from Blue Bag Chamber, the passage turns left and becomes more rift like. Following the bottom of the rift leads, after 35m, to The Last Pitch (P12) down into the Final Streamway, where the two routes unite.

Pitch	Rope	Rigging
Five meter climb	10m	Bolt.
Traverse	5m	Large thread; bolt.
Last pitch (P12)	15m	Natural backup; natural belay; bolt rebelay; natural deviation.

The Lower Streamway

Leaving Big Wind, the passage (which takes a strong draught), drops as a series of slippery inclined climbs punctuated by short crawls before emerging onto a sandy shelf on the left hand side of a large stream passage.

Upstream the going is easy along a canyon over 3m high, until the roof lowers to an arch roughly 1m high and the water emerges from a cobbly sump. Just before this, on the true right-hand side, a high level crawl leads to a small chamber which is entered in the roof. This is a complex area with several choked passages and numerous interconnections.

Following the water downstream from the junction, the vadose nature of the passage becomes less evident. Just after another high level passage leaves the streamway from a sandy shelf on the right-hand wall, the roof of the main drain lowers to a 1.5m high arch. Beyond this the passage gains height once more, with the stream meandering between sand banks until the passage changes character once more. The water slides along the base of a high and slightly inclined rift, while progress is easier roughly 3-4m higher up, although the smoothness of the walls demands respect. The traverse level becomes more defined, and the going more relaxed, until the stream emerges a few metres above a pile of boulders. Climbing down onto these boulders brings the caver to the deviation on The Last Pitch.

From the base of The Last Pitch, the stream disappears into a narrow rift. The way on is to the left from the ledge where The Last Pitch deviation is rigged, where an oxbow is followed.

This rejoins the line of the stream after several metres, and continues as a traverse. As the rift in the floor below the traverse widens out, climb down to regain the stream as it enters a tall circular chamber.

The stream flows out through a muddy rift on the opposite side of the chamber. Follow the stream for a couple of metres, then gain height in the rift where the passage offers suitable handholds. Continuing along the stream becomes increasingly tight, muddy and aqueous, until the passage forces submersion. Follow the rift at the easiest traverse level, about 5m up, which itself becomes increasingly more awkward as the walls become smoother and muddier, requiring much wedging and thrutching to make progress, until you are eventually able to drop down into the streamway beyond its deep tight pools.

Continued traversing in an upwards direction eventually brings you to a ledge part way up the 26/11 inlet pitch. A bold pendule (now more easily achieved by using the 26/11 entrance) takes you to a ledge, from where it is possible to traverse above the streamway and the mud sumps into high level passages, leading through a boulder ruckle to a chamber with several partially explored phreatic tubes leading off: surveying shows these to be close to the surface.

The streamway sinks into the bouldery floor as you emerge into a larger tall chamber, with a large inlet forming an alcove to the left. This is where Pozu Mohandi (26/11) enters the system. Continuing on, slightly to the right, the passage continues, tall initially, but the roof dropping until stooping is required. The passage itself continues dropping until a junction is reached. To the left, the passage continues descending and lowering, until the muddy sumps are reached in some very muddy phreas. To the right, there is a brief respite as the passage rises slightly, but it descends once more until it too perishes as muddy phreas and sumps.

The resurgences at Mohandi are at a very similar level and less than 70m away.

The High Fault Series

This strongly fault controlled rift runs roughly from the end of Codeine Phosphate Rift down to the Blue Bag Chamber near the end of Big Wind. It is not traversable continuously along its full length, but may be reached most easily in two places by long free-climbs.

The upstream section is accessible by following the inlet upstream from the sump pool at the start of Big Wind. A series of climbs and traverses emerges into a short section of large streamway, which ends where the water emerges from an impenetrable fissure four metres up an aven. A few metres back an easy but exposed climb up a shallow groove, Just Joking, emerges into the base of a fault controlled chamber. To the right the passage pinches out at all levels, while to the left two routes may be followed.

The lower of these involves a scramble over boulders to reach a small inlet chamber, followed by a traverse in a rift with a large blank space beneath it. The rift opens into a large space, The Meander, with a high inlet entering directly opposite and a deep, wide and unclimbable stream canyon dropping back down towards the known cave.

A higher level route can be followed along the fault for further. Beyond the head of Just Joking two 5m climbs lead to a large, meandering and steeply inclined stream inlet. A series of climbs of variable looseness, friability and exposure gains height rapidly until the channel becomes dangerously choked. A narrow muddy slot leads upwards and to the left into a smooth inclined rift with some formations.

This part of the cave is like a giant version of Eastwater's Upper Traverse, tilted by a further 30°, and grooved by stream inlets running down its face. The top of this rift is choked at the same level along its length, with cool draughts and fresh organic debris suggesting nearness of the surface.

A series of climbs, traverses and squeezes provides interesting going until a high bouldery chamber is reached. A small chamber on the opposite side of the chamber contains a dig into a series of too-tight, draughting inlet tubes. The chamber has a floor of giant boulders covered with rubble, and ends at a pitch (P10) into another similar chamber. These two chambers, because of their similarity, were called The Twins. At the bottom of the lower chamber an undescended pitch drops in a direction suggesting a link to the inlet in The Meander.

The downstream continuation of the high fault passage may be reached by an exposed climb leading up from the roof of Big Wind. This area is similar to that encountered upstream, but larger, and with more mature stream inlets modifying its face. It may only be followed in the upstream direction, where various traverse levels unite at a junction with a stream inlet entering from the true right, and a large pitch opposite it. This has been visually connected with the inlet leading of from the sump pool at the start of Big Wind.

26/11: Pozu Mohandi

The entrance is located on the slopes overlooking the Mohandi valley, about 50m above the valley bottom, to the right of what looks like a fossil resurgence. The entrance is a large open rift, which can be laddered down (P6).

The rift can be followed down a climb, through a slight constriction, and over some boulders into a chamber. Here there are a number of holes in the floor. The route taken was down a hole to the left—although this may not be the easiest way—to where a further hole is the top of a 22m pitch, landing in the lower streamway, 30m before the Mud Sump.

Pitch	Rope	Rigging
Entrance rift	–	6m ladder belayed to naturals.
Second pitch	30m	Two spike belays above slot; Y-hang off two spikes; spike deviation.

Gavin Lowe and Paul Mann

8/13: Pozu Cabeza Julagua

This is an old SIE marked cave, described in Espeleosis 27. To find the cave, walk up the Cabeza Julagua ridge from the refugio. After the ridge starts to descend from the summit, a steep fault line runs away and 8/13 is the highest entrance in this.

A waist-high rock wall in a comfortable alcove is the take-off for an 18m descent in an open shaft to a rubble-floored break, followed by a further 20m descent to a large scree-floored chamber. Across the scree, a short climb down reaches a knobbly rift traverse and a further climb down to the head of the main pitch. This drops 40m down a long, chaotically-calcited shaft and through a hole 5m from the bottom. A climb out of the small chamber then leads to a climb down into the main passage, which soon meets a 4m overhanging wall. Below the wall, a narrow rift leads down at 45° to the constricted head of a 13m ladder pitch into a beautifully calcited chamber, where 'SIE' is daubed in bold black letters on one wall. The way on follows the small stream, under a large, low ledge, down an apparently previously undescended, 4m freeclimbable pot, where the water disappears into a gently draughting, tight (but hammerable) meander.

Back at the overhanging wall, a delicate climb leads up to an old tape on the right, into which a ladder can be clipped. From the top of the ladder the passage continues ahead into a broken area,

where a couple of constrictions were passed, terminating in a small, muddy, unrewarding chamber. Back at the top of the ladder, a small passage leads into a rift. A short series of steep climbs lead down to where a constriction was passed into about 45m of new passage, Wet Dreams. This starts as a flat-out crawl, followed by a squeeze into a tiny decorated chamber; it continues across a pool and through a second squeeze into wider, decorated passage. Calcited climbs lead steeply down into respectable, mud-floored chamber. The only possible way on here seems to be high up on the calcited, left wall, but a high level—and fearfully exposed—traverse was unrewarded.

Pitch	Rope	Rigging
Entrance pitch (P18)	50m	Bolt belay and bolt backup.
Second pitch (P20)	"	Medium wire and bolt on right.
Main pitch (P40)	50m	Bolt Y hang; natural and tape rebelay; natural and tape deviation.
Calcited pitch (P13)	—	2 ladders attached to calcite bosses.
Wall climb (C4)	—	Short ladder clipped to tape.

Tim Guilford

Pozu del Xitu

Towards the end of the expedition, Pozu del Xitu was rigged to examine a few leads. Xitu was originally explored by OUCC between 1979 and 1981, to a depth of 1135m; see OUCC Proceedings 9 and 10 for details.

The cave was rigged in efficiently, using SRT on all pitches—some pitches having originally been rigged on ladder. During the rigging, the Hungarians discovered a lead at the bottom of the Bluewater I pitch: a climb up led to a T-junction, but unfortunately both routes soon came to an end.

The main lead looked at was in William's bit. The original route here ended at a pit, described in Proc. 10, reported to be blind. This year, William, Steve Phipps and Moha traversed across the pit and descended a sloping pitch. The passage soon ended where the ceiling came down to meet the floor in a mud choke. At the bottom of the pitch, a small crawl led back to the bottom of the "blind pit".

The other lead examined started as a strongly draughting crawl, part way along William's Bit. The crawl led to a short climb: William had got to the top of this in 1980, but had not explored any further. This year, William and Paul continued along an ascending, tight, chossy rift passage, past two holes in the floor, to a terminal chamber. This chamber used to contain a large stream, and a stream can still be heard, but was not found. The Hungarians descended the two holes in the rift. The first hole reportedly doesn't go. At the bottom of the second hole, a crawl led to another pitch where a stream was met; unfortunately, the stream sumped at the bottom of the pitch. The fact that water was found here is significant as there is no other known stream in this part of the cave.

William Stead and Gavin Lowe

Pozu Optimisto

So far on the expedition, most of us had bashed our heads against the wall at the end of 8/11, only to have the lead removed from in front of us by the discovery of a lower entrance. Then

William arrived, during a spectacular session in the refugio, and expressed confidence at being able to find Optimisto, a cave with high potential that had been abandoned after only one trip pushing to the bottom. A plan was hatched for William, Tony and I to visit Optimisto's too-tight final rift the next day.

William found the cave after only about a half-hour search. The infamous crawl Unclean! Unclean! had dried out, so we had none of the expected horrors. At the foot of the final pitch, Leper's Leap, Tony bridged across the rift. He passed an awkward traverse, and promptly disappeared into the tall passage beyond, around 6m above the floor. I soon followed, and after 15m or so of straight rift, a hole in the floor doubled back, and then turned back again to continue in roughly the previous direction. Only now it was a narrow, tortuous rift: this was where the 12 year old footsteps ceased. Tony, helmet off, tried negotiating a sharp bend, but I found an easier way over the top. Around 20–30m of narrow rift navigation followed, until we intersected a large, descending passage on the left. Stepping slowly down from the rift into the passage, we were only able to savour the moment briefly before the end was reached a few metres further on.

Continuing along the rift, it rapidly widened, two steeply sloping inlet tubes joined, and the roof extended several metres above. Then we found ourselves braced over a five metre pitch with a sump at the bottom—or at least, a deep pool that seemed almost certain to be sumped. The draught continued over the top to a high level dried up sump. We checked out all the inlets passed on the way through the rift, then returned to William who was waiting at the foot of Leper's Leap. Here Tony discovered that at some point in the rift his chest harness had been torn off, so he needed to improvise a new one.

Tony and I returned with Pivo the following day to check out all the leads that we could think of. A brief dig in the draughting choke at the base of the 2m climb beneath the corkscrew yielded nothing viable. Tony climbed the ramp in the middle of Unclean! Unclean! then carefully traversed across the top of the final pitch, but neither route yielded anything.

Pivo and I dropped down the the 7m pitch before Huning's Horror and reaching an immature and impenetrable stream passage. Finally, further towards the entrance, we descended Hywel's Hole—a deep shaft traversed around on the way to the 2nd pitch—which had been plumbed to 24m by William while surveying 11 years previously. This turned out to be 40–45m deep, there being a sloping ledge at presumably the 24m mark. A 4m climb led down to a further pitch, which had clearly been descended before. We rigged this after a quick return to Ario to fetch more rope. At the foot of the pitch, a tight rift with shreds of red nylon at the bottom led to a climb down to a draughting chamber. Unfortunately a hasty exit had to be made at this point, returning to a storm ravaged camp, one minute before our midnight call-out.

The depth of this part of the cave is estimated to be at around 80–90m, and was probably only ever visited once, in 1981. It is hoped that a return will be made next year.

Chris Densham

Small caves explored in the Ario area

Small caves explored in Area 4

16/4

Location: In the right hand side of the valley containing most of the caves in area 4 is a visible cleft, which continues to the top of the valley; in the base of the bowl the cleft contains 9/4 and a small undescended shaft on the left-hand side of the valley.

Description: 20m entrance pitch (spike, 2 bolt Y-hang, 2 deviations) lands on snow on a flattish floor. Ignoring the choked phreatic tube, there is a crawl over a stony slope into a chamber, filled at the bottom by a loose mud floor which 'sumps'. Traversing round to the right, through a window leads into another chamber. The write-up says: "It gets more complicated. See survey". Unfortunately no survey is included. Ends up in a 20m rift, which bells out. Other routes are possible at higher levels.

28/4

Location: Head East from Cabeza el Verde along a gully which rises up and then dips down again towards a shakehole. Level with this shakehole to the right of the gully is the entrance (hidden from view from this approach).

Description: Entrance shaft (P7,P19) drops into chamber. Climb down through slot into large chamber (alternatively, rig pitch further along). Inlet to right leads to moonmilky area. Straight ahead leads to crawl through boulders, down to 4-way junction (Wobbly Rock Junction).

To left is a crawl leading to a chamber. Climb over boulders to where rift narrows down: first lefthand bend is passable to wider section, but this needs widening in order to turn over for the next right-hand bend.

Straight ahead from Wobbly Rock Junction, a tube descends to 3m drop into a chamber. the start of the SIE Route. The rift to the left closes down. Main route leads to 9m climb down to slot which is the top of the third pitch (P8). From the bottom of the third pitch, the fourth pitch follows immediately (P11). At the bottom, the rift becomes too narrow.

To the right from Wobbly Rock Junction, a crawl, with holes connecting down into SIE route, leads into a flat area of breakdown, ending in a blockage with an enlargement — and a bone — visible beyond.

Pitch	Rope	Rigging
First pitch (P7)	40m	Thread backup; Y-hang off 2 spikes
Second pitch (P19)	"	Spike backup; bolt and spike Y-hang; needs deviation half way down
Climb (C9)	40m	Spike belay
Third pitch (P8)	"	Y-hang from two bolts; spike deviation
Fourth pitch (P11)	"	Bolt; bolt rebelay

29/4

Location: To the east of Cabeza Verde is a collection of interconnecting bowls. On the left-hand side of the largest of these is a 15–20m shaft, with a perched boulder above. Faded SIE mark. Bearing Cabeza Llambria 163°.

Description: Undescended.

30/4

Location: 20m from 29/4 and lower down. Marked SIE 3⊗

Description: 5m climb down to a chamber. Undescended by OUCC.

31/4

Location: Follow Culiembro path to 1/4, and then skirt round about 30m away from the bowl to pick up another path running up and down the hill. (Don't follow too close to the bowl as this leads to a shear drop overlooking the cave.) Uphill on the left (true right) is an 8m diameter walk in entrance.

Description: Appears to choke, but worth checking fully: a climb to the right may go.

32/4

Location: Downhill from 31/4 is a double bowl. On the ridge between then, at the side nearest the path — but invisible from the path — is a 4m diameter entrance.

Description: No way on.

33/4

Location: Over the ridge to the north of 31/4 is a 40m diameter shakehole. On the far side is a shaft, just above the path.

Description: Undescended.

34/4

Location: West of 28/4. "I found a shaft just where I was expecting to find one."

Description: 5m free climbable shaft leads to chamber with no way on.

35/4

Location: In the next valley left (NW) of 31/4, at an altitude of 1420m, just above where a subsidiary valley joins from the left. The valley continues down to the pasture with the big brown boulders. Bearing to big brown boulders: 70°.

Description: An unlikely looking rift in the rock on the right of the valley, marked by a cairn by the entrance and another cairn above, and tagged as 34/4 (whoops!). Just round the corner is a shaft of maybe 30m.

36/4, Pozu de la Garma de Julagua

Location: Two adjacent holes (larger 0.5m by 2m) in slab just east of summit of Cabeza Julagua. Small, faint red paint marking by SIE. Bearings: Cabeza del Verde 150°, Cabeza del Covu 165°.

Description: 5m climb down to bouldery floor. No way on.

37/4, Pozu del Brigadoon

Location: Follow path to Area 4, up to the ridge. Instead of crossing the ridge between the cairns, continue to climb up to the ridge to about 6m above the height of the two peaks and traverse around inside the valley at this height. About 50m away from the peaks is a dark green patch, above which the hole is located. But the hole can only be seen from the top of the ridge. This cave was found by Chris Vernon while he was lost in the mist, so the above description may be inaccurate.

Description: Undescended.

Small caves explored in Area 5

69/5

Location: In the Valley of Dry Bones, a strongly draughting hole.

Description: Dug to 6m depth over a number of trips, from where a side rift lead into a small chamber in a boulder choke with no way on.

71/5

Location: 150m from camp on a bearing of 292°.

Description: This cave was dug open by removing a large boulder. A 15m pitch is followed

by an 8m handline climb down to a boulder floor. An inlet rift part way down the pitch soon becomes too small.

Small caves explored in Area 7

41/7

Location: Outside the Northern rim of the bowl, 70m downhill from 23/7.

Description: 2m wide rift can be free-climbed down. The rift closes down in both directions.

48/7

Location: Go to lowest part of ridge between Jultayu and Cuvicente. Walk along ridge towards Cuvicente until stopped by sheer rock wall. Contour at this level about 30–50m further. Large cairn by entrance. In a good place to drop into upstream 2/7.

Description: 20–30m deep shaft. Undescended.

Small caves explored in Area 9

16/9A

Location: Just below the Cuvicente–Verdelluenga ridge (100m to col on bearing of 160°) is an area containing several large shafts containing snow. 16/9A is the largest and highest of these.

Description: Twice as high as the tree outside Harvey's house. Twin shafts meeting at the bottom. No way on past the snow. The other shafts in this area are still worth looking at.

18/9

Location: In valley running down from Verdelluenga, just over the rocky ridge 400m NNW of La Jayada. Bearings: Verdelluenga 232°, Cuvicente 144°.

Description: 10m descent to snow plug; further 5m descent reaches too-tight rift.

19/9

Location: In the spur of Verdelluenga overlooking a 200m diameter closed depression. Bearings: Verdelluenga 222°, Cuvicente 118°.

Description: 25m deep shaft to snow plug. A shake hole behind has a window into the main shaft. Undescended.

20/9

Location: In the side of the spur of Verdelluenga, in an area containing many shafts and shakeholes. Bearings: Verdelluenga 216°, Cuvicente 110°.

Description: 30m long gully with snow plug. Entrance pitch lands on snow, and slope can be followed down to the top of a pitch, choked with snow 10m down. Traversing over this pitch reaches a pleasant, round, 20–25m deep shaft, unfortunately choked at the bottom.

21/9

Location: Near the western col on the Cuvicente–Verdelluenga ridge, overlooking a bowl. Bearings 148° to col (about 300m), Verdelluenga 250°.

Description: An undescended 25m shaft.

22/9

About the same height as Boca del Joon, and 60–100m to the right (true left), in a shakehole behind a little ridge, and to the left (true right) of some nasty karren.

Small caves explored in Area 11

16/11

Location: On the NE side of Cabeza La Forma, 5m N of the path leading to the Ario Refugio and on top of a small spur. Cabeza La Forma 193°, Cabeza Julagua 101°, Cabeza Las Campanas 345°. Not marked.

Description: Obvious hole in the ground. Triangular vertical shaft about 2.5m by 1.5m at the top and 10m deep, to a snow plug. A tight crawl heads south, but becomes too tight.

18/11, Pozu Small Snails

Location: 15m east of the climbing wall.

Description: A 3m deep hole with a connection through to 19/11.

19/11, Pozu Rubber Clogs

Location: 15m east of the climbing wall.

Description: A 3m deep hole with a connection through to 18/11.

20/11

The easier top entrance into Systema Sierra Forcada. See elsewhere.

21/11

Small entrance above 23/11.

22/11, Pozu del Shades

6m pit to draughting rift.

23/11 Entrada del Raptor

A sporting entrance into Systema Sierra Forcada, entering in Wet Cheeks Rift. See elsewhere.

24/11

Location: A hole overlooking Mohandi. 80m SSE of 26/11; 130m north of 23/11. Marked 'SIE ○'.

Description: 10m entrance pitch lands on boulder slope, leading to second pitch of 8m. Boulder floor descends, before suddenly ending in a wall. Hole 6m up can be reached by traversing from top of second pitch, but the rift becomes too-tight.

25/11

Location: In left (East) side of long depression to west of 26/11 and 27/11.

Description: Small draughting dig.

26/11

The bottom entrance into Systema Sierra Forcada, entering just before the Mud Sump. See elsewhere.

27/11

Location: Near 26/11. Looks like a fossil resurgence.

Description: A big draughting hole

28/11

Location: A strongly draughting hole, downhill and to the right of 26/11.

Description: A squeeze between loose rocks enters a too-tight rift.

29/11

Location: In Mohandi valley, just above the springs, behind a car sized boulder.

Description: A horizontal gravel, which splits just inside the entrance. Both routes choke quite quickly.

30/11

Location: Small shaft in small north-facing depression, 10m below top of ridge (On Cabeza Julagua side). Bearings Cabeza Julagua 139.5°; Area 11 survey cairn 166°, Cabeza Forma 219°, Cabeza las Campanas 281°.

Description: Entrance climb of 2m leads to short crawl. Doesn't look as if cave continues through crawl.

31/11

Location: At base of cliff on the ridge above 26/11 (63.30m north, 11.18m west and 28.08m above 26/11).

Description: Small draughting crawl.

Small caves explored in Area 13

5/13, Bufona Canal la Texa

Location: This is a cave described in the SIE journal. Several unsuccessful attempts were made to find it. It is described as being about one kilometre NE of Cabeza Julagua, in the middle of a "canal". It may be in the base of the cliffs at an altitude of about 1350m, about where Oston first becomes visible when walking down the Culiembro path. Or it may be somewhere else.

Description: A door shaped entrance, 4m by 3m (if I've correctly understood the Catalan description). Pitches of 35m, 18m, 21m, ending at a constriction at a depth of 103m, emitting "fort corrent d'aire". Well positioned to drop into Cabeza Muxa beyond the sump. Well worth trying to find.

8/13, Pozu Cabeza Julagua

See elsewhere.

9/13, Pozu de la Cemba de Julagua

Location: North of 8/13.

Description: An 8m drop to a bouldery floor, with a small climb down at one end, which is choked.

Gavin Lowe

Top Camp campaign

Towards the end of expedition, a short "recky" was made up to Top Camp. In a period over about two weeks, with on average four cavers, a number of caves were explored, and some good leads discovered.

F57: Cueva del Arco

The cave is located on a bearing of 248° from Top Camp. An obvious shakehole on the hillside is visible from camp; this is choked with snow. Twenty meters higher is a large rock arch at the mouth of a large tunnel heading into the hillside. A strong draught blows from the entrance; in some conditions this can be seen as steam from Top Camp.

The entrance pitch (P6) lands on a snow slope, descending at an angle of 40°, down a tunnel about 5m wide and 10m high. The snow slope can be followed for about 70m, to a 10m pitch. The snow slope continues for a further 20m, to the top of a 7m pitch, which is followed almost immediately by a steep descent down boulders. A large hole is visible in the roof at this point, which might be reachable by traversing, or possibly via one of the entrances F11 and F12 which are roughly above this point. Ten metres ahead, the snow slope flattens out to a junction. Straight ahead, a small slide down over snow leads to a choke and aven. Following the main passage round a bend to the right, leads past a beautiful frozen waterfall to the base of a vertical wall. It is conjectured that a pitch may lie under the snow at this point (don't unclip!).

Two climbs of 6m and 5m lead up onto a ledge, from where a 10m pitch can be rigged down the other side. Alternatively, a further climb leads to a possible traverse to a ledge, but this does not look very hopeful. The pitch lands on a ledge from where two short climbs lead to a cobble floor. Round the corner, a solid wall suddenly appears, blocking the way on. The floor draughts noticeably, but the prospects for digging do not look good. From the ledge, a climb up the opposite wall leads to a balcony, from where a tube descends into a too-tight rift.

Pitch	Rope	Rigging
Entrance pitch (P6)	200m	Y-hang from two spikes; spike deviation (would be best rigged with a ladder).
First snow slope (70m)	"	Two spike rebelays.
Second pitch (P10)	"	Bolt backup and bolt belay on left hand wall.
Second snow slope (20m)	"	Rebelay from huge boulder.
Third pitch (P7)	"	Spike and bolt belays on right hand wall; spike deviation.
Descent down boulders (C10)	"	Natural belay.
Final snow slope (20m)	"	Natural rebelay.
Climbs up (C6, C5)	"	Bolt and natural; two bolts.
Final pitch (P10, C6)	20m	Y-hang from bolts for climbs; bolt rebelay.

F41

The cave is located in the karst between the scree slope running up to F13, and the Verdelluenga thrust. At about the same height as F13, bearing 204°. In a very large shakehole.

Scramble down to a snow slope. At the bottom, a short pitch can be rigged onto a descending snow slope. At the bottom of this another short pitch drops into a chamber. To the right is a near vertical rift, with a large jammed boulder above, and with thick ice on the walls. A 20m pitch, Ice Rift Pitch, can be rigged down this.

The pitch lands on a snowslope. Upslope, a small hole soon leads to a choke. A rope can be rigged down the snow slope, under a large icicle, The Sword of Damocles. At the bottom of the chamber, the snow slope goes through a small hole, before opening out at the top of

F57 : Cueva del Arco

Picos De Cornion, Asturias, Spain

Surveyed length 182m

Plan length 122m

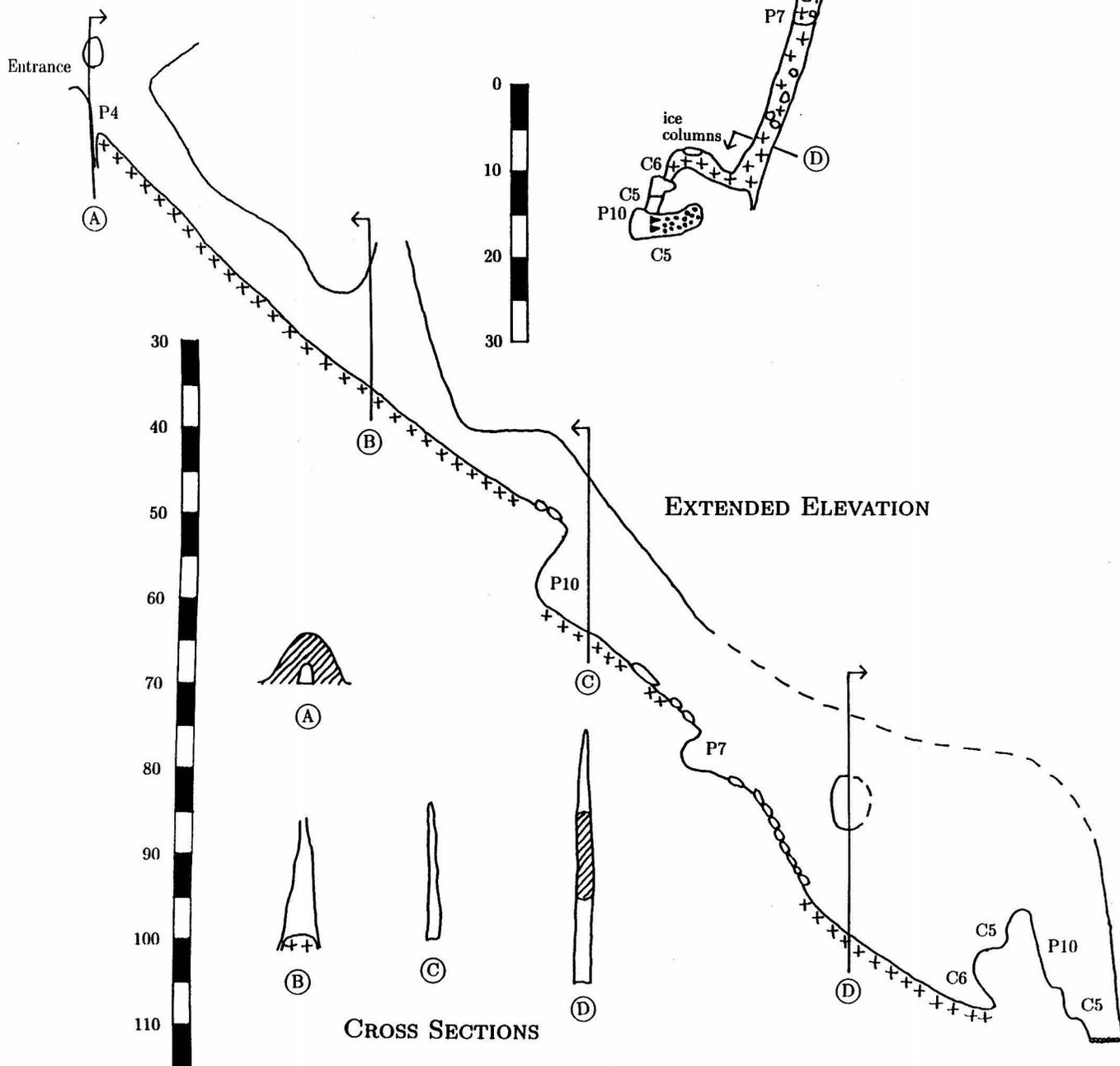
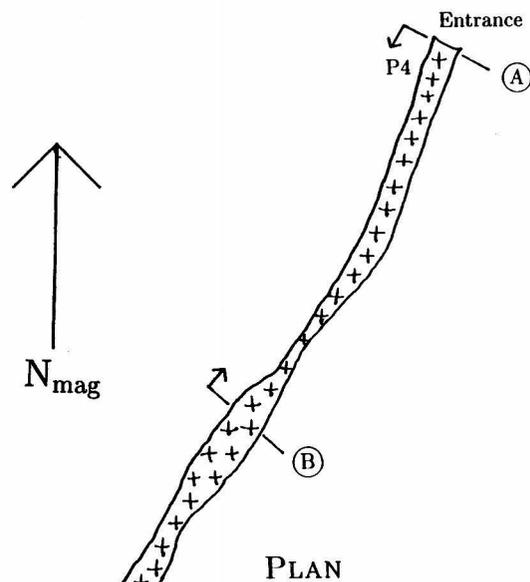
Depth 111m

Explored by Oxford University Cave Club, 1993

BCRA grade 5b survey by GL, RB, SB

Survey drawn by Gavin Lowe

Originally drawn at a scale of 1:500



a large chamber. The snow slope continues past some amazing ice formations, to the limit of exploration, where the rope ran out. Beyond is a rift with a 2-3 second rattle.

Pitch	Rope	Rigging
First pitch (P12)	100m	Spike and bolt Y-hang.
Second pitch (P8)	"	Large jammed boulder; needs bolt for Y-hang.
Ice Rift Pitch (P20)	"	Spike belay with bolt deviation; spike deviation 8m down.
Snow slope (C10)	"	Bolt belay; needs another bolt belay or deviation.
Next snow slope (C15)	"	Large thread belay.

Small caves explored from Top Camp

F5

Location: From the col between F38 and F2, head up the gully to the south. F28 is in the first flat bit; F5 is on the second flat bit, to the left. Bearing 286° to F2; 337° to Top Camp.

Description: Deep rift (8 by 2m at surface), trending 84°. Large snow plug in entrance, revealing two pitches at either end of the rift (W and E). West descent: 20m pitch to snow plug revealed as 3m block of snow jammed in the top of the pitch. 3m gap to large pile of snow in the bottom of the rift. Pitch ends when narrow rift meets snow (at West end). Shaft appears to continue but is full of snow. East descent: 20m to the top of the snow, where a water drip had made a 1m wide by 20m deep hole down to the floor of the rift. This was explored but did not go. Continuing in towards the East leads down into a rift approximately 20m high and long. This had a solid stony floor and closed, both up and along, with no leads.

The following two caves were relocated, but not descended. They are of interest because they may drop into F57, and are worth re-examining.

F11

Location: Above F57, but below F54, roughly on the same fault line.

Description: A 20m drop, the first 5m freeclimbable. Below this narrow entrance, a drip enters, and the cave develops into a rift, down which 'stones rumble for some time'. 20ft climb leads to a pitch, 40m freehang to the bottom, which is choked. A window 20ft up from the base of the shaft is also choked.

F12

Location: 20m away from F11 on bearing 10°.

Description: Descended for 15m on ladder. Three ways on: (a) down, where stones bounce and crash; (b) across into an ascending passage; (c) along a rift. Chokes—at least on route (a).

F13

Location: To Top Camp: 322° Impressive rift-like entrance above scree slopes to SE of Top Camp, at the base of cliff with cross-shaped cracks.

Description: Cave is 25m long (large walking-size passage) with a 10m climb at the end. Choked, but with a very good draught.

F14

Location: To Top Camp: 301° An impressive-looking hole in the hillside surrounded by very chossy shattered rock.

Description: This cave was originally explored in 1984 when snow levels were much higher. A return this year confirmed that there is no way on.

The following six caves were relocated, but not descended.

F19

Location: East of F18, at edge of top level of pavement overlooking the depression below F38, in a fracture system on a 30° strike. Bearing 152° to F38.

Description: Open rift 1m wide and more than 10m long, hading 70° NW, with a snowplug some 10m down that looks passable, draughting.

F22

Location: In tributary gully downhill from F20 and to the left off the main gully. Erroneously relabelled "F23" from 1985 to 1989, and referred to under that number in Proc. 12, p. 57 (but not on p. 61). To Top Camp: 83°. Entrance is a large shaft near the bottom of a gully (R.H. side), a little higher than Top Camp.

Description: The shaft is 10m deep. There may be a way on under the snow, but it's a bit near F20 to be very useful.

F23A-C

Location: In platform on lefthand verge of the Argayo Cortado below F20, just above F36. To Top Camp: 85°. Near F22, but lower down on the right.

Description: 25 foot shaft. F23A was reported blind in 1984 but all three openings seem to be sound-connected (certainly the latter two are). F23B is an impenetrable fissure with a 6 second rattle. F23C might go after shifting some large boulders, or there might be a horizontal link from F23A into the 'audible chasm'. NB F20 is *not* underneath but some 60m off sideways so this one might well go deep independently. Well worth checking out.

F24

Location: On limestone pavement NW from F23; visible from Top Camp but difficult to access. To Top Camp: 93° Entrance about 25m above Top Camp.

Description: Large shaft about 10–15m deep. Awaits exploration.

F25

Location: On lefthand (true left: looking down) verge of the 'Brown Gully' (Argayo Pardo) just below where it crosses the Ridge. To Top Camp: 94°.

Description: Meander with skylights ending after 15m in a choked little rift. Thought at one time to belong to the 2/6 shaft system nearby, but it rather seems it once was part of a cave system underneath the fault-controlled Brown Gully itself.

F27

Location: Halfway up the Argayo Pardo, in lefthand verge (looking down), below the rift containing F26, and just above a car sized boulder. To Top Camp: 100°.

Description: 10m entrance pitch. Awaits exploration. This, as well as F24 and possibly F34, is another candidate for a way into the hypothetical Systema del Argayo Pardo just alluded to.

F31

Location: At S verge of grass field where the Verdelluenga thrust and the path to Ridge Cave re-emerge from the large boulder-filled Jou W of Top Camp and start to rise towards the Ridge.

Description: A 1m diameter shaft. 11m pitch or awkward climb. Way on is obstructed by a large but removable boulder. Beyond is a boulder pile descending for 2.5m until it meets the roof. It is difficult to say whether a continuation to either side exists, though this seems unlikely.

Unmarked rift

Location: 25m SW from F31 (uphill).

Description: 3m climb and 3m pitch in south-trending rift lands on cobbles and snow. Tiny hole in south end gives view of floor 4m down. Alternatively climb back up 2m above hole, and thrutch forward in tight rift to look down an oval 80cm by 30cm shaft, ending at a similar level.

F33

Location: Walk up Brown Gully from the very bottom end and leave it early, just past a blind oblique 'doorway' on the left, going left and up. Entrance is tiny manhole ('dwarfhole' would be more appropriate) on a limestone clint just above the gully. To Top Camp: 97°.

Description: Originally described as a 5m tight pitch. The squeeze is less than 15cm wide, and completely ridiculous.

F34

Location: From Brown Gully, climb up NW verge into what looks like a big wiggly meander when seen from Top Camp. The first wiggle turns out to end at a rock wall but climbing up to the pavement and back down into the continuation leads to the entrance in a rift on 30° hading 50–60° E intersecting the meander. To Top Camp: 97°; to La Verdelluenga: 113°.

Description: Pitch 6m to boulders. From here, another 3.5 metres down to snow plug and boulder floor. Possible way on through boulders upslope; slight draught. Looks interesting and is well worth checking.

The following 3 entrances were found, but not marked.

Unmarked crawl

On the left of the F20 gully, very near the top, near where the gully narrows. This was previously found by Paul Brennan in 1986, and is marked on Gerhard's map.

Unmarked entrance

Location: Bearing 150° from camp, about 200m away, overlooking the route to F38.

Description: An awkward scramble down a gully to a snowplug (not fully checked out) and a small draughting hole on the right, passable, possibly with a little digging.

Unmarked shaft

Location: Roughly below F19, bearing 180° to F38.

Description: An open rift with snow at the bottom—may be passable.

F42

Location: 100m downhill from F57, bearing to Top Camp 66°. When walking downhill from F57, in the second hillock on the right hand side.

Description: Open shaft (P7) lands in choked cobble-floored chamber; all ways on lead back up to the surface.

F43

Location: In pavement just E of a shallow depression in N flank of the hills SE of Top Camp. Bearing 155° from Top Camp.

Description: 2.5m by 1.6m shaft visible only from close quarters. 15m pitch, choked at the bottom.

F46

Location: Some 30m NE of F7D in obvious fracture trending 15° and hading NW. Take care, surface rock is VERY loose.

Description: Rift in floor of surface meander. Rig rope from natural at top of gully, then another natural at top of entrance pitch (P8). Pitch lands on snow, from where continuation on NW wall (P6) lands on snow-covered false floor in intersection of four rifts, two coming down from entrance, while the other two carry on downwards but are very narrow. Pebbles hit more snow after 3–4m. A chisel would be needed to make this passable; a short pitch would follow immediately.

F48

Location: 30m W along fault (trending 73° hading 85° S) from F7A.

Description: Shelf broken by three shafts into underlying chamber, The Vestibule, 15m by 5m wide. Rig down largest skylight from naturals, then rebelay from another natural to drop past the snow into a rift (35m rope needed). Looking back offers interesting views of VW sized holes supporting much of the snow in the Vestibule, while walking forward eventually gains a decent floor in a tall 2–3m wide by 5m chamber. Ascend boulder slope to the left to enter continuation of rift 50–80 cm wide after right hand bend, with chockstones at various levels. This was followed at floor level to where a well-developed pair of ramps betrayed the original flow direction (inward). Ahead, it is possible to drop down a couple of feet into the bottom of the rift, but this route becomes too tight. Traversing above the drop, the rift continues to a point where the team ran out of rope.

F54

Location: On the same fault as F57, about 30m left (true right) of the dolomite band, at the highest comfortable traverse level. A large shakehole, only visible from above, with a scree slope running into it from above. Bearing 68° to Top Camp.

Description: The entrance shaft can be rigged from the eastern side (spike belay). This lands on the snow slope, but a small tube can be penduled into (bolt at entrance of tube). At the end of the tube are three ways on: to the right, a climb down soon becomes too tight; traversing forward, a tube continues before dropping back into the cave further down: this may provide an easier route. The original route was to rig a pitch at the end of the tube (spike belay) back down to the snow slope. The rope can be deviated from a spike through a hole in the snow, down into passage below. A snow slope (bolt belay) continues down to the start of a rift. The rift leads into a large chamber (where the alternative route enters from above). Here a climb over some boulders enters a continuation of the rift. The rift can be followed for some way; several chokes are encountered, but these can be climber over. At the final choke, a slot in the roof leads into a large chamber with an inlet coming in, and the continuation choked.

F55

Location: In F20 Gully, 20m below F36, on true right, in a shakehole with snow, 10m south of survey station T7.

Description: Walk into chamber with two tight crawls continuing. Top one draughts well, but may just connect with rift on surface above.

F56

Location: To the right (true left) of the Verdelluenga thrust, near the ridge, in a small depression in an area of karst, near the base of a cliff.

Description: Shaft of about 40m, undescended.

F58

Location: In the sloping karren above the F7 entrances.

Description: A diggable slot.

F59

Location: On left-hand side of outcrop of limestone, halfway up green valley from Top Camp to La Verdelluenga, level with overhanging bluff. Bearing 302° to Top Camp.

Description: Two entrances. Entrance A is a 7m deep shaft leading to bouldery floor with no way on. B is an immediately adjacent 5m deep shaft with a bouldery floor. A hole at the bottom gives a visual connection between the two shafts.

F60

Location: To the right (true left) of the Verdelluenga track, about 50m below the level of F41.

Description: A 2m by 4m hole surrounded by jagged, loose rock. A snow slope descends about 30m to a snow and rock floor. No way on. Not a nice place.

F61

Location: Three entrances on the opposite side of Brown Gulley from F25, but higher up.

Description: The left-hand entrance is a rift closing down to 3–4 inches at all levels. The middle entrance ends 5m down on a pebble floor. The right-hand entrance is a choked manhole just big enough to insert your legs.

F62

Location: Behind and to the left (true right) of climb over cliff, east of camp. Bearings: Verdelluenga 111°, Sphinx 129°.

Description: Obvious surface rift choked in places. 8m climb down, sharp in places, to choked floor.

F63

Location: Near the ridge, just south of F20 Gulley. Scramble down west side of ridge, and walk into a small shake hole. Originally numbered F58, but unmarked.

Description: To the right is a shaft 5–10m deep. Ahead are two passages which seem to choke, but need checking with a light.

F64

Location: Hidden, impressive entrance, high up on Verdelluenga on steep slope. Just up and west a bit from E9. Bearings: 298° to Conjurtao; 342° to snow pole.

Description: 8 second rattle. Other entrances nearby are also worth checking.

Gavin Lowe

Accounts

Income

Grants:	Oxford University	£250.00	
	Oxford Society	£200.00	
	O.U.E.C.	£200.00	
	Sports Council	£500.00	
	Total grants		£1150.00
From members:	Deposits (19 people @ £120.00)	£2280.00	
	Insurance	£734.75	
	Transport	£960.00	
	Personal equipment	£2916.14	
	Total from members		£6890.89
Interest			£1.09
TOTAL INCOME			£8041.98

Expenditure

Equipment:	Rope	£305.00	
	Rigging	£755.14	
	Camping	£156.15	
	First aid	£92.95	
	Radio	£72.06	
	Surveying equipment	£86.70	
	Fuel	£66.93	
	Carbide	£96.00	
	Personal equipment	£2916.14	
	Total equipment		£4547.07
Transport:	To van account for use of van	£659.86	
	Car hire	£111.98	
	Trailer	£250.00	
	Ferry tickets	£411.00	
	Fuel	£339.19	
	Additional insurance	£72.65	
	Total transport		£1844.68
Personal insurance			£699.75
Publications:	Prospectus	£10.01	
	Report (projected)	£190.11	
	OUCS Proceedings	£250.00	
	Total publications		£450.12
Administration			£158.23
Photography (projected)			£155.00
T-shirts (gifts for locals)			£18.97
1992 Expedition debt passed on			£168.16
TOTAL EXPENDITURE			£8041.98

Notes

The above excludes the following: costs for the Hungarians, who were self contained; transport of members not travelling with the expedition (approx. £2080); food costs whilst in Spain (approx. £1500); insurance arranged individually by 8 members (approx. £300).

The minibus is owned jointly by Oxford University Cave Club and the expeditions, who both pay a fee to the Van Account whenever they use the minibus: this account covers the running costs of the van.

The trailer was bought using a loan from the Special Projects Fund: this loan is being repaid at a rate of £250 per year for three years.

Every few years, the club brings out a proceedings, covering the discoveries of the relevant period. This is paid for by contributions from each year's expedition.

Paul Mann

Note on showering at Ario

Think about the air temperature. If the rain turns to hail half way through, you will not be able to rinse the soap off.

Harvey Smith

A random quote

As Rob was beginning his first ascent through the tight part at the top of the third pitch in 8/11, Paul was below him:

Rob: "Am I standing on your head?"

Paul: "Yes, but it's all right."

Rob: "No it's not. I'm not on it properly."