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## Front Cover: Ice Cave Zebra

Top left, Jerry Drake descending the entrance;  
 Top right, Andrew Elliot landing on snow at the  
 base of the entrance pitch; Bottom left, John  
 Whittlesea beginning to traverse the Bosch Climb;  
 Bottom right, the Fossil Ramp from the top of  
 Bosch Climb — with the ice plug in the shaft  
 beyond.

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## The Characters

Steve Brooks  
Jerry Drake  
Andrew Elliott  
Chris Gibson  
Pete Hartley  
Chris Marsden  
Dave Middleton  
Dave Milne  
Rachel Stringer  
Vaughan Thomas  
Annie Wakeham  
John Whittlesea

For further information about this or other expeditions to Vega Huerta contact YUCPC,  
c/o Athletic Union, Langwith College, University of York, Heslington, York, YO1 5DD.

## Introduction

For several decades people have been exploring the potholes of the **Picos de Europa** in northern **Spain**. This region has been uplifted and eroded to form a limestone mountain range stretching to 2700 m above sea level<sup>1</sup>. The Picos are divided into three ranges - the Eastern, Central and Western Massifs - separated by deep gorges. The area is well known for deep caves of over 1000 m<sup>2</sup>.

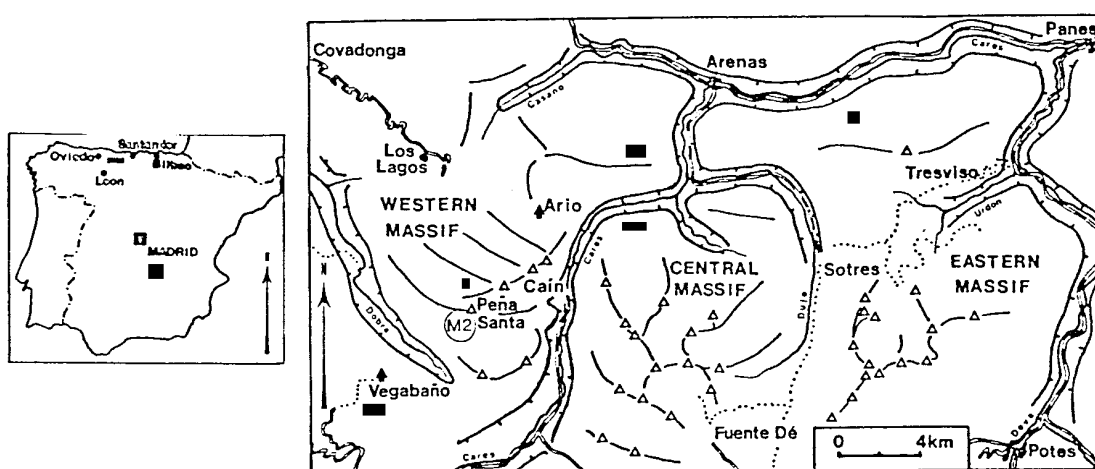


Figure 1: The Three Massifs of the Picos de Europa

York University's area is situated on the **Western Massif**, south of the **Peña Santa Ridge** - with Oxford to the north east. This small area has a potential for caves of up to 1350 m depth<sup>3</sup>, realistically. Notable caves already explored include **Pozo de Cuentalbo**<sup>4</sup> (M2) sumping at -986 m, **Pozo del Llastrale**<sup>5</sup> (B3) sumping at -944 m and **Sima de Cotalbin** (K903) which is still being explored at a depth of -723 m.

This Summer saw three clubs working together. SEII of Madrid, the Speleo Club de Paris and YUCPC.

<sup>1</sup> P L Smart; The Geology, Geomorphology and Speleogenesis of the Eastern Massif; Cave Science, 1984, Vol 11, 238ff

<sup>2</sup> Sima de Trave, Central Massif, -1380 m; Sima 56, Eastern Massif, -1169 m; Pozo del Xitu, Western Massif, -1149 m; Torca Urriello, Central Massif, 1022 m

<sup>3</sup> D K Lloyd; Water Tracing in the Vega Huerta Caves, Picos de Europa; Cave Science, 1990, Vol 17, 103ff

<sup>4</sup> K Senior; Geology and Speleogenesis of the M2 Cave System, Western Massif; Cave Science, 1987, Vol 14, 93ff

<sup>5</sup> J P Thorlby; YUCPC; Picos 89, 1989

York had three main objectives for this year.

- To continue the exploration of **Pozo de la Garita Cimera**<sup>6</sup> (β47) last entered in 1988 and with a tempting 50 m undescended pitch at a depth of 356 m.
- To continue the exploration of **Sima de Cotalbin** (K903) then extending to a depth of around 550 m.
- To find new entrances.

Much work was put into β47 with unfortunately little depth gained. The 58 m undescended pitch landed in a large sloping chamber only to be choked at its base by scree to give a final depth of about 420 m. We all feel that without major alterations to this cave little else can be found. Exploration of K903 yielded much more passage. Two new entrances were found to the system; an extremely loose upper entrance and a lower entrance which gains very easy access to the lower reaches of the cave. Beyond last years extent several pitches and much horizontal passage was found, finally breaking into an abandoned phreatic tunnel. We had difficulty with the final objective due to the amount of snow this year, blocking many of the unexplored entrances. The most notable was **Ice Cave Zebra** (H906) which was a 'fun' pot giving access to many parallel shafts, including a snow route. This is currently at a depth of 86 m.

Our French partners, whilst continuing with their exploration of **Sima de Cotalbin** also looked at various entrances in the same locality with some success. Surveys of their main finds are included in this report

Our hosts, SEIL, spent their time well by looking at leads in pots explored during previous expeditions. These included β10, for which a traverse across the final pitch head reached a further shaft which unfortunately lead back into the final shaft; I8, I41 and π15. A description of their exploits is to follow in their next journal.

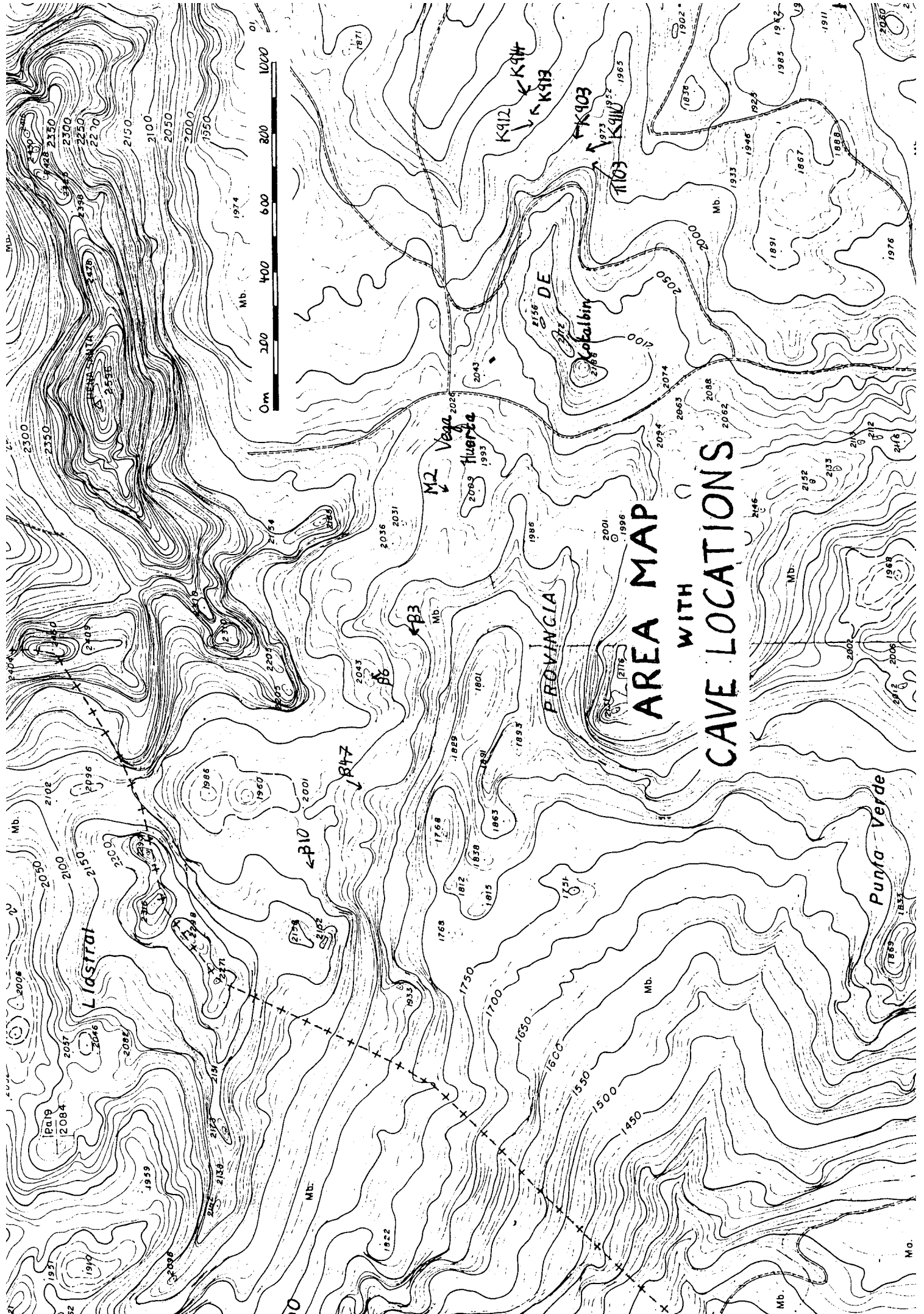
## Location

The YUCPC expedition area lies south of **Peña Santa** on the **Western Massif** in the **Picos de Europa** of Northern Spain. It is best reached from Oseja de Sajambre, on the road between Riano and Cangas de Onis. From here travel down hill towards Cangas for ¼ mile before turning right, to follow and exposed, twisting road for five miles up to Soto de Sajambre. Near the top of the village turn right following the sign to Vega Bano up a twisting track to the large meadow at its end.

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<sup>6</sup> SEG; Kaos de Bloques, No. 3, 1989, 9ff





## Pozo de la Garita Cimera — ß47

### Exploration Beyond the Secret Meander

Following an epic rig by Dave and Steve of the second half of the cave to **Secret Meander** — where exploration ended in 1988, Dave pushed on past the calcite squeeze — named **Mastectomy Squeeze** by Annie after the worst had been removed — to hear water falling in the distance below. At this point both decided they were knackered and decided to call it a day. Dave then spent twenty minutes backing through the squeeze.

John and Pete soon potted down to the pitch carrying a small amount of rope, and whilst Pete began to bolt and rig the pitch, John (on his first ever pushing trip) slept. For some obscure reason they didn't get further than half-way down the pitch.

So with batteries recharged Dave and Pete headed back down. Pete finished rigging the pitch, which turned out to be 58 m deep. Naturally he later named it **Twenty-five Metre Pitch**. Together, finding themselves in a rather large chamber, the pair euphorically tottered down large blocks and scrambled down a mud and scree slope to the other end of the chamber only to find the cave ended — a minuscule waterfall from an aven high above sinking into the loose stones.

Looking around they also found a dry cascade heading a long way upwards, but without an obvious draught. Near the waterfall a large boulder draughted from beneath and with careful excavation a hole appeared. Unfortunately the next block was holding up the rather large boulder and the scree slope behind — and it didn't look over promising anyway. Pete and Dave then turned their attention to what can't be the most stable looking boulder choke and feeling a draught passing through too small holes decided it might by-pass the scree choked chamber. They therefore felt it would be a good idea if someone else bolt climbed over the top of the boulders.

A few days later saw John — who doesn't know any better — bolting up the calcited wall adjacent to the boulder choke whilst Pete and Dave stood back at a safe distance: Pete on a beach forty miles away and Dave in another cave. Steve watched — probably grinning. At the top of the climb another climb appeared — the boulders stretching upwards. John and Steve decided to leave it for another day.

The day came and a team went down en mass — Pete succumbing to temptation whilst Dave carefully overslept. The bolt climb continued to 15 m and a short free climb approached the roof — but no way through the boulders was found. The group began to derig.

*DM*



## Guidebook Description

### Location

From the collapsed refugio at **Vega Huerta** head west, below the main path towards **Vegaredonda**; down valley. On the right the ground widens to form a semicircular slope. Straight ahead a boulder and scree strewn (or snow filled) gully slopes down towards you across the other side. Head for this maintaining your height and walk to the top of the gully. At its head is to the left.

Scramble up and to the right to the top 20 m ahead. Below is a large doline. Ahead the left hand peak is the **Garita Cimera**. Walk down into the depression towards this peak. Near the bottom a limestone bulge, topped by several cairns, situated next to a gully (and several sheep), is reached. A cleft on the far side of this bulge contains the entrance to  $\beta 47$ .

### The Entrance Series

Sliding sideways through the entrance leads to a short hands and knees crawl to the first pitch. Slings around boulders give a Y-hang away from the pitch. A natural deviation supplies a 45° take off followed by a 5 m pitch.

To the left, at the bottom, the passage slopes gently downwards. The way on is behind and to the right. Entrance is gained to what appears to be a meander. With the rope attached to an obvious thread, climb down through awkward blocks to the second pitch. With a sling attached to a jammed boulder, descend 2 m to a spit rebelay. The pitch soon bells out to land on a ledge 20 m down. *Traversing up the ramp leads to a stance on poised blocks with an inlet aven to the right.* Continuing downwards with a rebelay just below the ledge leads to the base of another ramp. Go down through the trench and up a ramp to the next pitch head.

A short traverse line leads to a Y-hang, followed shortly by a bolted deviation on the opposite wall. Descend past a large block, but before reaching the floor, swing up to the right to a stance on stacked blocks. A spike and spit rebelay, followed immediately by a deviation to the right, takes you to the floor. Slide between boulders up a ramp turning to the right at the top to gain the forth pitch. Backed up to a fallen flake, descend at 45° to a rebelay and the pitch proper.

*Down slope leads to a pit.* Following the left hand wall up the boulders leads to a short hands and knees crawl to the fifth pitch. With a boulder as backup, clamber down over the hole to the false floor. Using the hidden thread as a hang (the obvious spit below has been placed in choss) descend to a rifty ramp. Head up this to a short climb down into a small chamber.

This is the head of the 50 m pitch. Above the slot between boulder and wall two spits give a Y-hang. By using a rope protector, slide down through the slot. Ten feet down a rebelay takes you down a sloping wall of a fine shaft to two bolt rebelay - the first about 20m down.

From the base, head down, past the inlet to the left, to the first ramp. Walk down the trench and up the next ramp to an awkward pitch with bolted Y-hang landing on another ramp 5 m below. 2 m up the ramp a Y-hang between shattered ledges gains a fine 33 m pitch. Initially against a sharply sloping wall, a piton deviation is reached. halfway down a bolt rebelay is located on the opposite wall. Near to the base, a swing to the left, towards an obvious ramp, brings you to a large block with sling attached. Clambering up the right hand side leads to a bolt in the right hand wall for a hand line.

Continue up the ramp – crossing the trench several times. At the top a stallagmite boss gives a good back-up to the pitch. Step out on to the ledge where a spit in the right hand wall and natural spike on the left above give a Y-hang. Half-way down the pitch a swing and clamber to the left (facing the bolt) gives access to the rift, **Baby Bouncer**.

### **The Middle Series**

**Baby Bouncer** involves a route at various levels through a rift — marked by carbide from contorted helmets. At the end the rift widens to a short drop from where a sling belay and bolt gives a descent **Tourist Pitch** via a deviation on to a ramp. A short ascent leads to further rift. An exposed traverse around a corner leads to a minor constriction followed immediately to the left by **Glorious Leader**.

A bolt before the constriction gives a traverse line to the pitch head which leads to a Y-hang 2 m below (bolt and natural) leading to a 17 m free-hang — landing in the complex chamber — **Bloques Impresentables**. *Looking across the boulder floored chamber, following the left hand wall for 3 m presents a slot through blocks into a circular, domed chamber about 4 m across. Further along the left hand wall a mud/scree slope leads to an inlet.*

The way on is to the right, at the cairn. Clambering down several blocks takes you past several dry inlets to a sandy meander. At its end an awkward rift gives access to a 9 m pitch via naturals (rope protector required).

From its base a short ramp gains a Y-hang with short traverse line, to a free hanging 35 m pitch. *A short way down this pitch a large window can be seen in the far wall. A swing on to the ledge below this — large nubble (not near the sheep) for hand hold — leaves a short bolted climb to this window. A distant deviation over a large flake gives a safe descent in **Piss Pot**. A short climb over calcited rocks leads to an uncomfortable, unwelcoming crawl or bowing back into the widened rift leading to the main pitch. Further down the shaft — and on the wall opposite the above window two small windows lead to very muddy rifts paralleling the way on below.*

A natural thread belay on the ramp following allows a good traverse line for the following 10 m pitch – which lands on a boulder 4 m above the floor. Ascending a steep, muddy ramp then leads to a small chamber and a 4 m handline; *“It must be, with two rub points.”*

Going upwards from the base of this awkward slot leads to a 7 m pitch with two cracked naturals for back up and a one bolt hang. To get on and off the pitch(*and so that others can't see how crap the rigging is*) it is best to enter the rift 2 m below, using a stalagmite deviation to pull the rope in.

The exit from the chamber below leads directly to an oxbow - a sloping hole to the right leading on to the 85 m **Hermon Monster Pitch**. Using two flakes as backups, a bolt on the left (facing up the slope) gives a hang rebelayed 6 m down. *A short distance below this rebelay an obvious ramp leaves the main shaft, providing an inlet shaft that rejoins near the base of the 85 m pitch.* Continuing down lands on an inlet ledge which gives an opportunity for a rebelay and descent close to the wall.

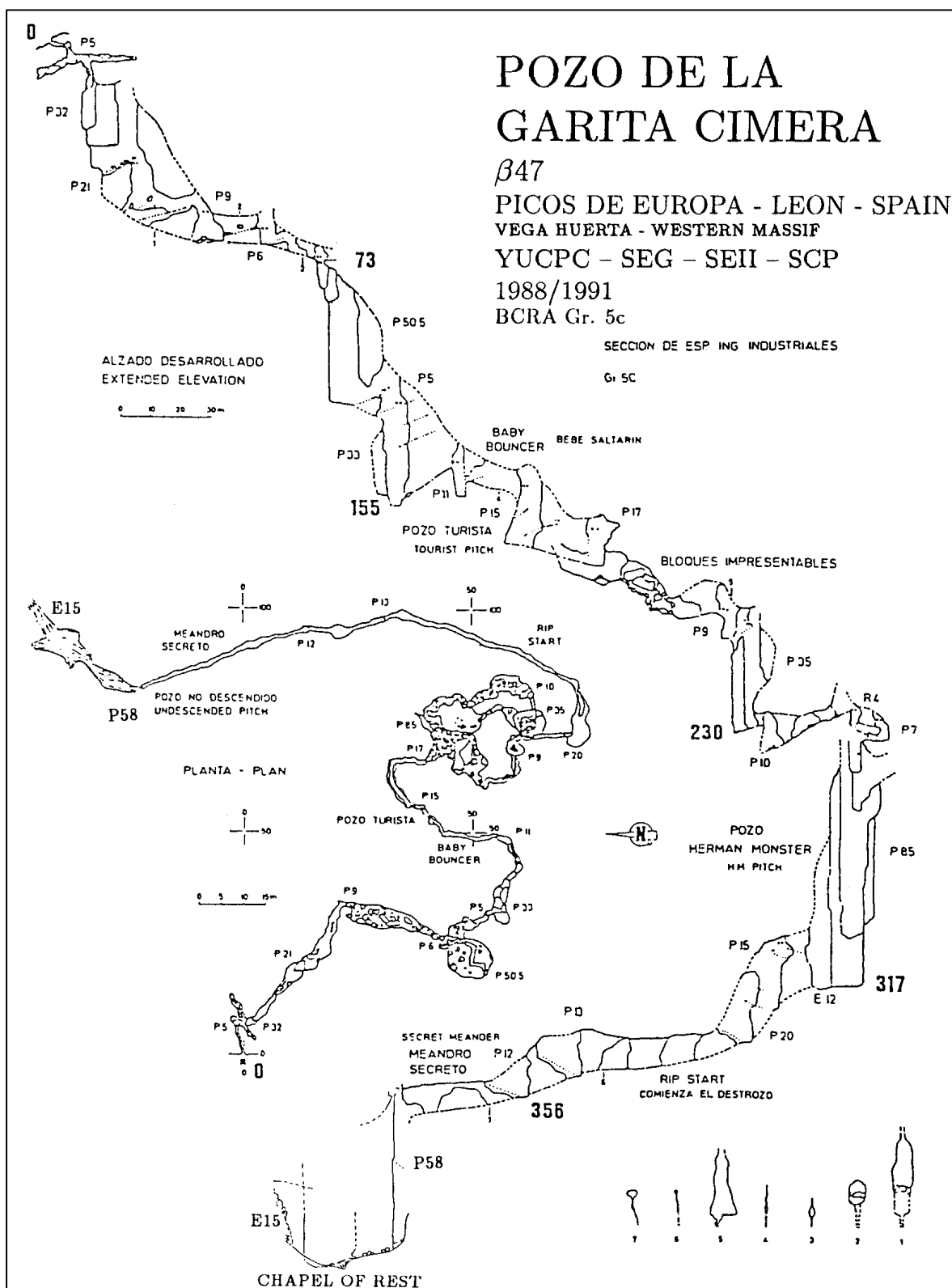
The base of the shaft is blind. A 12 m permanent rope enables you to climb up to the exit ramp. A short traverse and 2 m climb leads to a narrow rift which then opens up. A Y-hang rigged through an awkward slot leads to a 15 m pitch followed by a 20 m pitch to a pleasant stance on a ramp.

## **The Meanders**

From the obvious resting place a 2 m drop into a narrow rift leads quickly to the beginning of **Rip Start**. *An unwarranted terror (good sense) amongst our Spanish hosts has partially diffused its way into the British camp. This particular rift is a doddle — as long as you aren't carrying a tackle bag and haven't any patches on your over suit.*

Crawling over an obstruction immediately leads to a standing rift along which very slow sideways movement is advised — moving backwards each time anything gets caught on the sharp calcite nodules. A hammer is a useful device for venting your annoyance. Occasionally a bit of involved crawling is necessary. *According to Andrew, thin cavers will find this section impossible.*

At the end, a traverse through an awkward slot and over **The Coffin Lid** leads to a sloping descent over choss to the head of the next pitch of 15 m. Descent is from a one bolt flyer backed by a large natural. An optional deviation doesn't help remove rub points but stops the worst.



*Down slope at the base leads to a pool; upslope to the penultimate pitch — again via a very loose rift. This pitch fades, but a natural deviation prevents rub points when it doesn't fall off.*

Ascending the slope leads to a 2 m climb and **Secret Meander**. This level in the rift — the original phreatic — follows a fault and is very straight — but the rift below breaks into a winding meander. Sliding past the first block leads to wider, stooping passage. A traverse over large fallen blocks is the continuation. *Dropping between the blocks leads to too tight a rift.* Continuing, the way becomes smaller — coming shortly to a crawl. **Mastectomy Squeeze** — named after being hammered — acts as the backup to the final pitch. This squeeze was the limit of the '88 exploration.

The 58 m pitch — **Twenty-five Metre Pitch** — uses a mixture of rawl bolts and spits. A bolt to the left, just past the squeeze starts the traverse. In many places the hanging wall to right is very loose. The main hang drops to the mud ledge below and with a rope protector over its edge leads to a rebelay. *Below, a bolted deviation takes you to a sloping ledge. To the left a 45° boulder descent leads to a 4 m climb down to where the rift becomes too tight.* To the right a bolt leads to a rebelay 4 m below. The pitch lands in a massive chamber — **Chapel of Rest**. This slopes downwards over mud and scree at about 30° to two inlets — a wet aven to the left and **Choke Dave** to the right. A bolt climb up the choke for 15 m and free climb to the roof didn't yield a way on — despite a strong draught into the main chamber at the base. Near the waterfall a draughting hole was partially dug — with a too small gap at the end — next rock supported the massive block above. Looking down slope from the pitch a dry cascade comes in from the right — no draught.

DM

## Rigging Guide to ß47

Pitch No.	Name	Height m	Rope Length m	Slings	Crabs <sup>a</sup>	Bolts		Rope Protectors
						Spits	Rawl Bolts	
1		P5	65	3	1	3 <sup>b</sup>		
2		P32		3	1 <sup>b</sup>			
3		P21	30	3				
4		P9	20	1				
5		P6	11	2				
6	Tourist Pitch	P51	60			6	1	1
7		P5	10			2		
8		P33	50	2	1	4		
9		P11	15	3		1		
10		P15	30	2	1			
11	Glorious Leader	P17	30	1		3		1
12		P9	15	1		1		
13		P35	45			3		
14		P10	25	2		3		
15		R4	10	2				
16	Hermon Monster Pitch	P7	15	3	1	1		1
17		P85	100	2		4		
18		E12	20			2		
19		P15	55	2 <sup>c</sup>		2		
20		P20				3		
21	Twenty-five Metre Pitch	P13	20	2	1	1		
22		P12	25	2	1	2		
23		P58	70	1	1	2	5	1

<sup>a</sup> Crabs required for deviations

<sup>b</sup> Deviation bolt to be placed

<sup>c</sup> Two very large tape slings are required to go round pillars

## Ice Cave Zebra — Cueva del Hielo Cebra — H906

### Guidebook Description

#### Location

Walk along the path from **Vega Huerta** along the path as if to the **Canal de Perro**. At the first grassy col, descend down the first major gully on the left towards the base of the large doline with three stone circles. At the circles, keep to the left following the goat tracks (contours), curving round to the right at the end of the depression and climbing over between the col. From here an obvious path can be followed up valley in an easterly direction to a 'pass' with many choked shake holes. On the right can be seen a fault. The entrance lies 20 m from the path along this.

#### The Entrance Series

The cave contains a mixture of rawl bolts and spits.

The entrance is along an obvious fault – extending in both directions for several hundred yards. *The fault breccias appear to be made of very hard crystalline carbonates. The original development was along either side of the fault.* The surface rift gradually descends to the entrance shaft proper. This is rigged with a long traverse and backup line to a Y-hang across the rift. A pitch of 14 m with a deviation 9 m down arrives on snow.

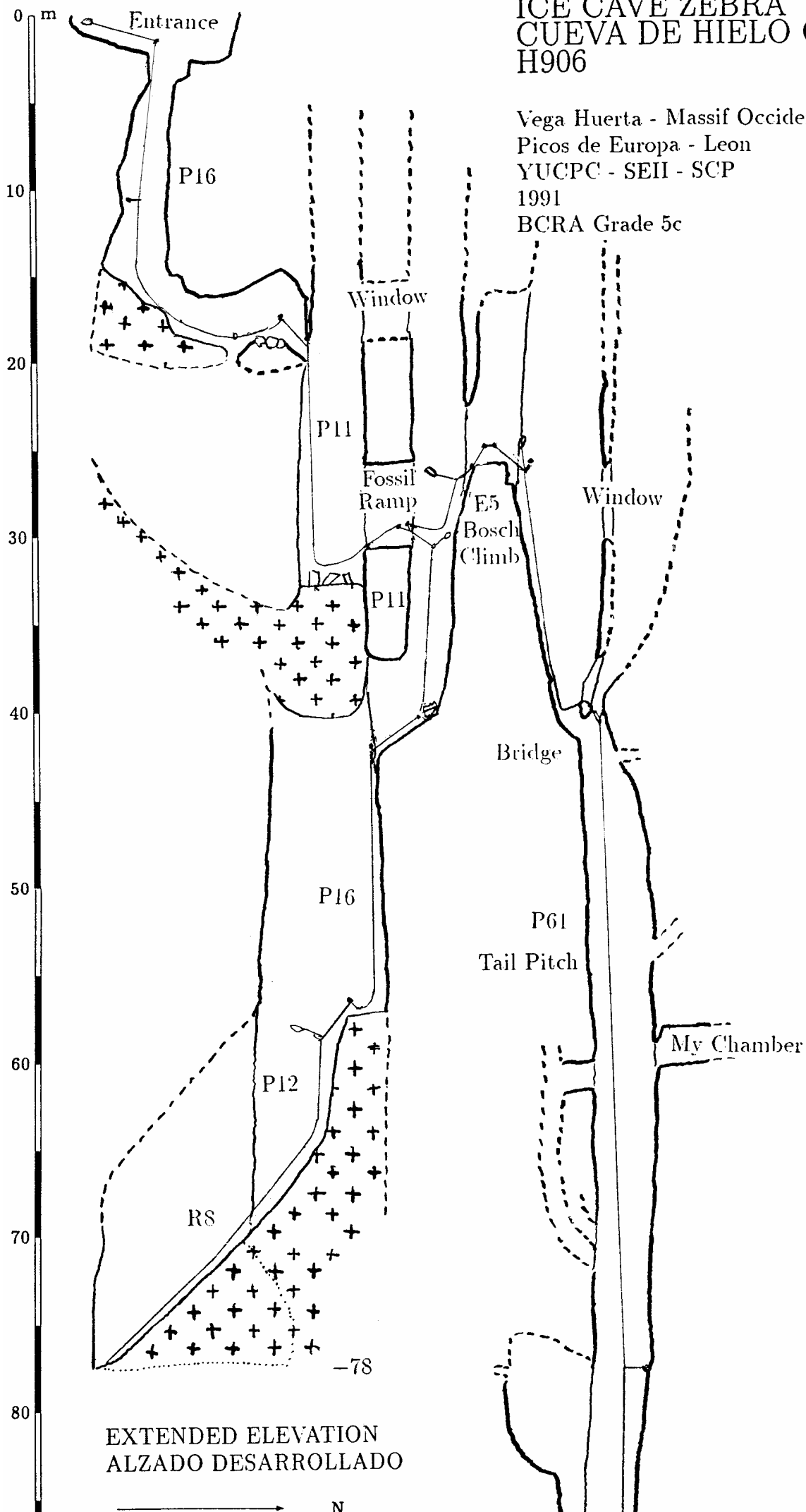
Walk down using hand line to a psychological thread on the left, by the hole. Then climb up over the hole to a rubble slope over a huge rocking boulder to a hand line down the other side of choss to head of second pitch. *Across the shaft a window leads above the ramp.* Drop 9 m to the snow plug below, from where the short climb opposite gains a fossil ramp. *This ramp is obviously part of a much older system originally from an entrance to the north but intercepted by the younger series of shafts.* From here the ways diverge.

#### The Snow Route

A pitch of 9 m via a distant deviation is followed by a steeply descending ice slope (care) requiring a hand line to a rebelay and 'oh, shit' the snow plug from the second pitch hanging above you. Descend 4 m to a deviation, followed by a further 15 to arrive on a snow and ice ledge. Walk over to the right to the next bolt, using the pitch rope for protection – care is needed to ignore fresh snow falls from above.

# ICE CAVE ZEBRA CUEVA DE HIELO CEBRA H906

Vega Huerta - Massif Occidental  
Picos de Europa - Leon  
YUCPC - SEII - SCP  
1991  
BCRA Grade 5c





Descend between rock and snow plug at about 60°, past a deviation round a 'really strong' icicle, down the remainder of the snow ramp - which curves around to the right - using the rope near the bottom as a hand line.

The other way on from the ramp involves climbing to the obvious fossil window 5 m up over the third pitch. Several rawl bolts are in place and with additional protection from naturals it is quite easy. At the top of **Bosch Climb** the rift joins with **Tail Pitch**. A Y-hang from a thread and bolt gives a drop of 15 m to a bridge and Y-hang mark II! The final descent is a pitch of 45 m via several deviations (care — loose walls). The base ends in choss — mainly from gardening of the shaft walls and rigging failures. No draught was noticeable amongst the choss.

### **Tail Pitch**

**Tail Pitch** has rather complex features. From the top, another shaft can be seen through a window in the opposite wall. This shaft reappears at the bridge. To the eastern side at the bridge a short rift ends in a 4 m descent to a ledge rejoining the main shaft. A phreatic from the ledge leads to 'space' behind the wall — unfortunately we didn't have a Jack Russell to shove through. This 'space' is suspected to be part of a shaft joining 14 m below the bridge. Just below the bridge — on the western side — a very small crack leads to another shaft — inaccessible.

At about 20 m below the bridge, two tubes lead off from the shaft. The higher one, '**My Chamber**', is a 3 m rift. The phreatic upper section continues and 'space' can be seen beyond, but the rift is only 8 cm wide. On the opposite side another tube leads off directly to an un-descended shaft. This oxbows back into the main shaft — together with another shaft.

### **Further Potential for Exploration**

The potential for this cave seems good — possibly in a year following several very wet Summers and little snow fall. The ice plugs are however probably quite old — as there is no direct entrance for the snow.

Another rubble filled entrance from an adjacent shake hole probably leads into the second shaft. Along and around the fault are many more impassable shake holes.

*DM/JW*

## **Sima de Cotalbin — K903, K912, K9110**

The cave was found and explored by SCP in 1990 to a depth of around 530 m. The following year SCP, YUCPC and SEII worked together to extend this cave.

The system now has three entrances - the original being the middle entrance. With the new top entrance (K9110) and lower extension the pothole is now approximately 720 m deep.

### **Guidebook Description**

#### **Location**

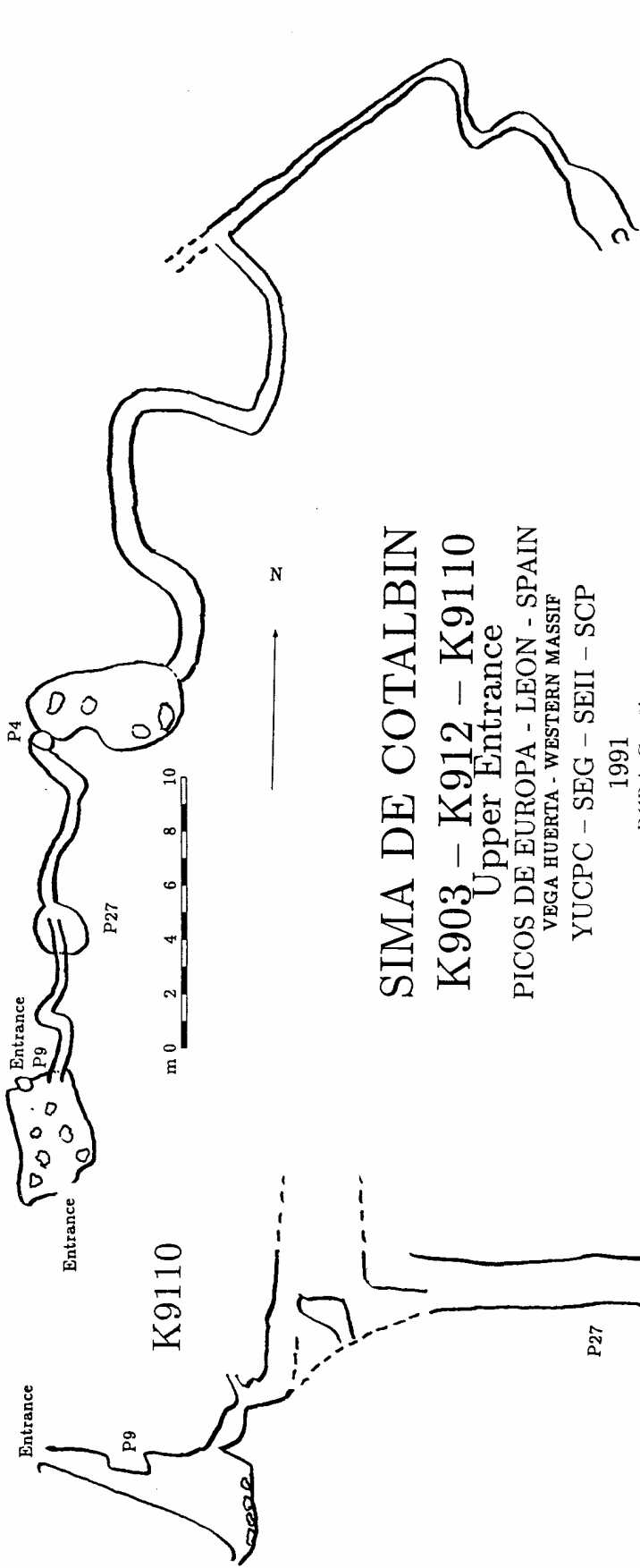
From the collapsed hut at **Vega Huerta** walk past the fuente, over the ridge to the left and into the next gully. Walk down this, past where it widens and bears right to where it widens even further. If you go too far you arrive at a steep 'grassy' slope. Bear right to a narrow gully going upwards — to a large cairn at the top. From here follow the contour towards the Cares, paralleling the valley.

When you reach the place where the 'path' slopes downwards, K897 is ahead and to the left and K901 is to the right. For K912 — the lower entrance — look ahead to the green grassy hillock. The entrance is situated high up in the right hand wall of the gulley to the right of this hillock — at the end of the hillock.

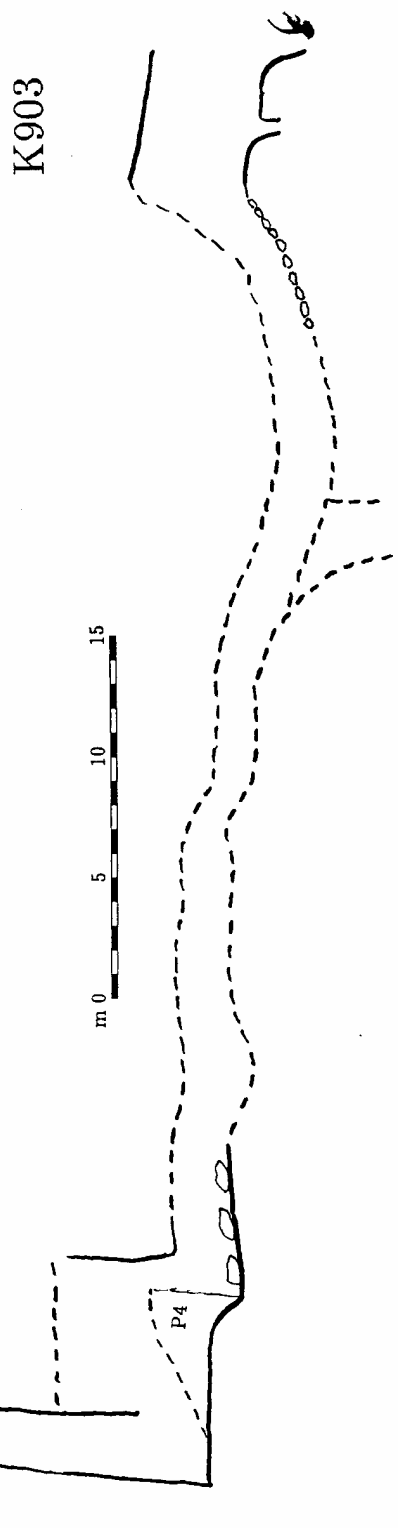
For both K903 and K9110 — the upper entrance — head upwards from the vantage point towards the very obvious sheep cave until you reach the obvious chasm. Crossing this, head down and across the scree (snow) slope. From the far side head upwards and along until the obvious northwards facing gulley is reached. K903 is the large entrance at its top. To find K9110 continue upwards over the ridge. The entrance lies midway between this ridge and the next.

#### **The Upper Entrance Series — K9110**

The main entrance is in the side of the ridge. A large oval shaped cave, about two metres at the widest point, drops down via a small ledge to a squarish chamber of three metres width. Along the chamber wall to the right a passage can be seen. Directly opposite the entrance, on the far side of the chamber, an upper entrance enters via a 4 m tube in the roof. This upper entrance can be seen as a small hole in the cliff outside the cave. In the far right hand corner of the chamber below the tube in the roof is a slot which is the main way on.



SIMA DE COTALBIN  
 K903 - K912 - K9110  
 Upper Entrance  
 PICOS DE EUROPA - LEON - SPAIN  
 VEGA HUERTA - WESTERN MASSIF  
 YUCPC - SEG - SEII - SCP  
 1991  
 BCRA Gr. 3b



This leads to a narrow descending fissure **passing through a very unstable area**. This continues directly to an ever enlarging rift, down which debris from the chamber above often trundles. At its end a bolt can be found on the wall opposite a tight rift which offers a good safety line along the rift and down through the squeeze (cows tails only) to the 'floor' 3 m below. Another bolt here preventing the unwary from descending too far.

A large boulder gives a free hang for the 23 m pitch bolt rebelayed 4½ m below (and down which a cascade of debris from the entrance chamber will occur if care is not taken). At the base a gentle ascent leads into another small boulder floored chamber. A passage then leads out of the chamber before a sharp right to a short slippery free climb down to the bottom of a larger chamber. An attractive helictite can be found back under the climb.

Continuing up slope, the chamber passes into a narrow meandering passage before opening into a much larger passage five metres ahead where an inlet enters. This passage continues to a T-junction with a narrow rift. To the left a five second drop has not yet been investigated and it is not known whether it connects with K903. Traversing (above a four second drop) along the right hand rift for seven metres reaches an ascending passage from where an inlet can be seen at the end of the rift. Following the narrowing passage upwards leads to traverses around the very large holes in the entrance chamber of K903.

### **The Middle Entrance Series — K903**

An easy, short climb down through the large entrance of K903 brings you to a sizable chamber. Belaying to a large boulder, drops down two 5 m dry cascades to a 40 m free hang near to the wall. This lands in a chamber and bearing left brings you to a meander and the second pitch. Half way down this 30 m pitch a deviation pulls you away from the dry cascades — down which you descend near the bottom. From here a traverse up a ramp takes you to a series of pitches — the bottom of which is free climbable. A further ramp leads to an 8 m pitch and following a climb over boulders a 30 m pitch, with a long traverse line heading to it.

A traverse along a rift leads to the 12 m pitch following. Near the bottom a rebelay to a large block provides an excellent swing to a steep and airy ramp — best lined — to a 32 m pitch, immediately followed by a 34 m pitch gaining a chamber with several aven inlets — where the lower entrance (K912) joins.

### **The Lower Entrance Series — K912**

K912 lies ~ 70 m lower than K903. The entrance is hidden by the side wall of the gulley. Climbing this gives a drop onto a 30 m snow slope. A deviation allows a safe descent down to where the massive passage bears right to a large arch — rebelayed at the corner. The way on is straight ahead from the base of the snow ramp down a short scramble to the main 75 m pitch which descending from the top of boulders is deviated to a narrow rift with two rebelays. The shaft below widens and two-thirds of the way down a rebelay against the wall gains the floor. Here it joins the route from K903.

## Main Shaft Series

Traversing along the top of the ramp leads to a short slope (lined) to the head of the free hanging 29 m pitch. At the base, facing the shaft, to the right of the trench a bolt traverse line leads to the **Main Shaft** (300 m). A suitable take off with a Y-hang just over the edge presenting a fine 75 m free hang — near the wall at the bottom. Again to the right of this ledge (facing outwards) a Y-hang leads to a rebelay just over the edge. A deviation further down to a cascade and ledge. Again traversing up and along the right hand wall gains the head of the final large pitch, with three rebelays followed by the free Y-hanging 120 m descent.

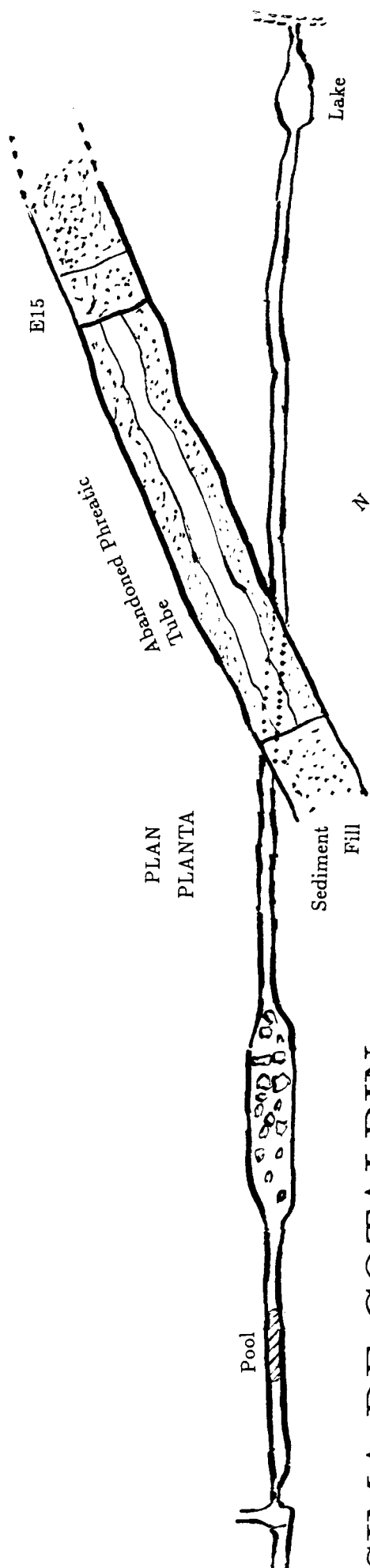
## The Meanders

Walk along the ramp dropping down to a sandy shelf 7 m along and then down to the next pitch of 34 m. *Continuing along the top passes over several holes.* The pitch head area is extremely brittle – with platelets to the left. The short traverse line leads to a Y-hang with a rebelay half-way down. 7 m along from the bottom a 5 m rope climb up boulders leads to the continuation. Downwards leads back to the stream.

The passage soon widens temporarily before a short squeeze. This is best done by climbing up 1 m and then raising your legs up to pass through horizontally. It is best to take off all gear first (unless you are a very thin French man) and pass it through. Well built people have problems. Two alternatives are possible. Climbing 4 m up into the rift just before the squeeze gains an awkward passage dropping at the wet aven just beyond. The final alternative is a frightening high level traverse starting from the rope climb and dropping back in at the wet aven.

The water drops down through a trench. Following along the top of this – the rift ends at a 2 m climb. Past this an airy traverse in the rift leads to a wet inlet. Following this leads immediately to a 50 m pitch which chokes at the bottom. Just beyond, clambering down steeply leads to a 12 m pitch. Continue along the rift at the bottom until it becomes sensible to drop down to the head of the following 15 m pitch. At the base a ramp rises sharply and at its top another drop leads to the top of the next 12 m pitch. Alternatively — if you're small — go straight through the bottom of the trench.

The pitch descends into a boulder chamber. At its end, climb down 2 m into the meander and crawl out onto a small shelf — the head of the next pitch. This is a series of wet cascades, dropping 65 m with various rebelays and deviations. At the base a short traverse leads to a backup to a Y-hung 11 m pitch.



# SIMA DE COTALBIN

K903 - K912 - K9110

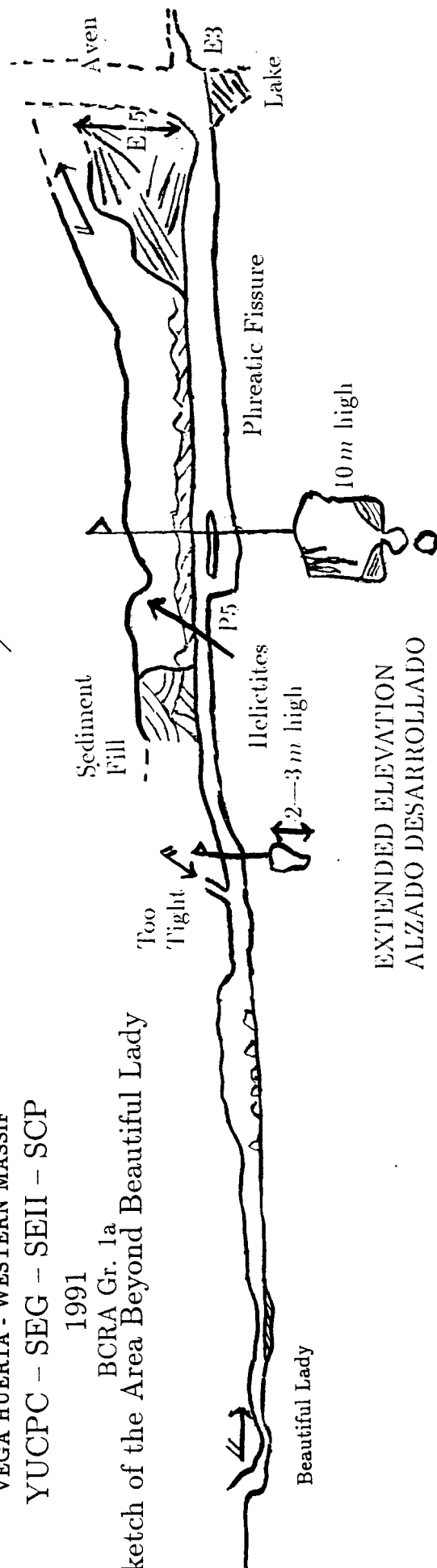
PICOS DE EUROPA - LEON - SPAIN  
VEGA HUERTA - WESTERN MASSIF

YUCPC - SEG - SEII - SCP

1991

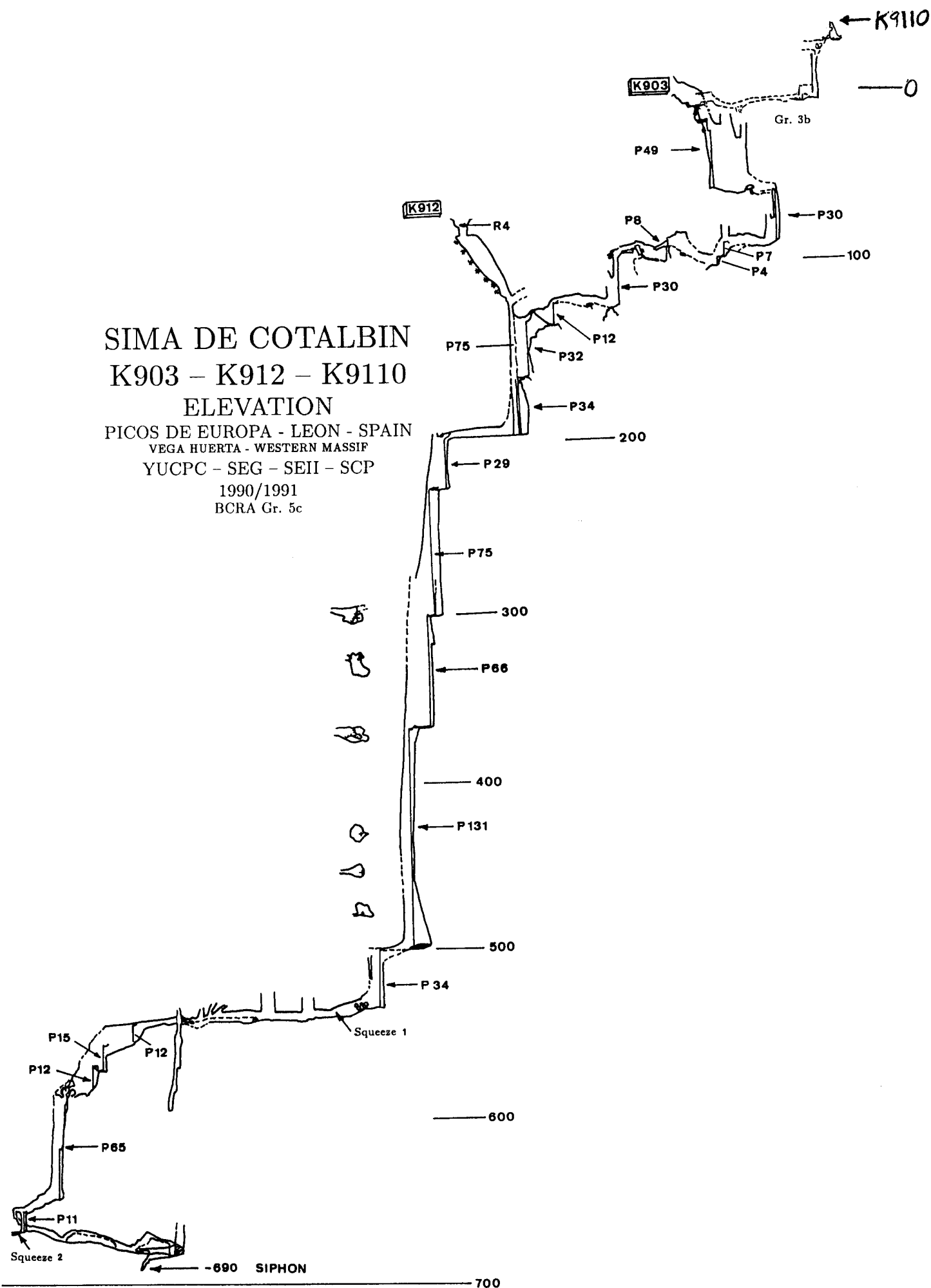
BCRA Gr. 1a

Sketch of the Area Beyond Beautiful Lady



# SIMA DE COTALBIN K903 - K912 - K9110 ELEVATION

PICOS DE EUROPA - LEON - SPAIN  
VEGA HUERTA - WESTERN MASSIF  
YUCPC - SEG - SEII - SCP  
1990/1991  
BCRA Gr. 5c



# SIMA DE COTALBIN

K903 – K912 – K9110

## PLAN

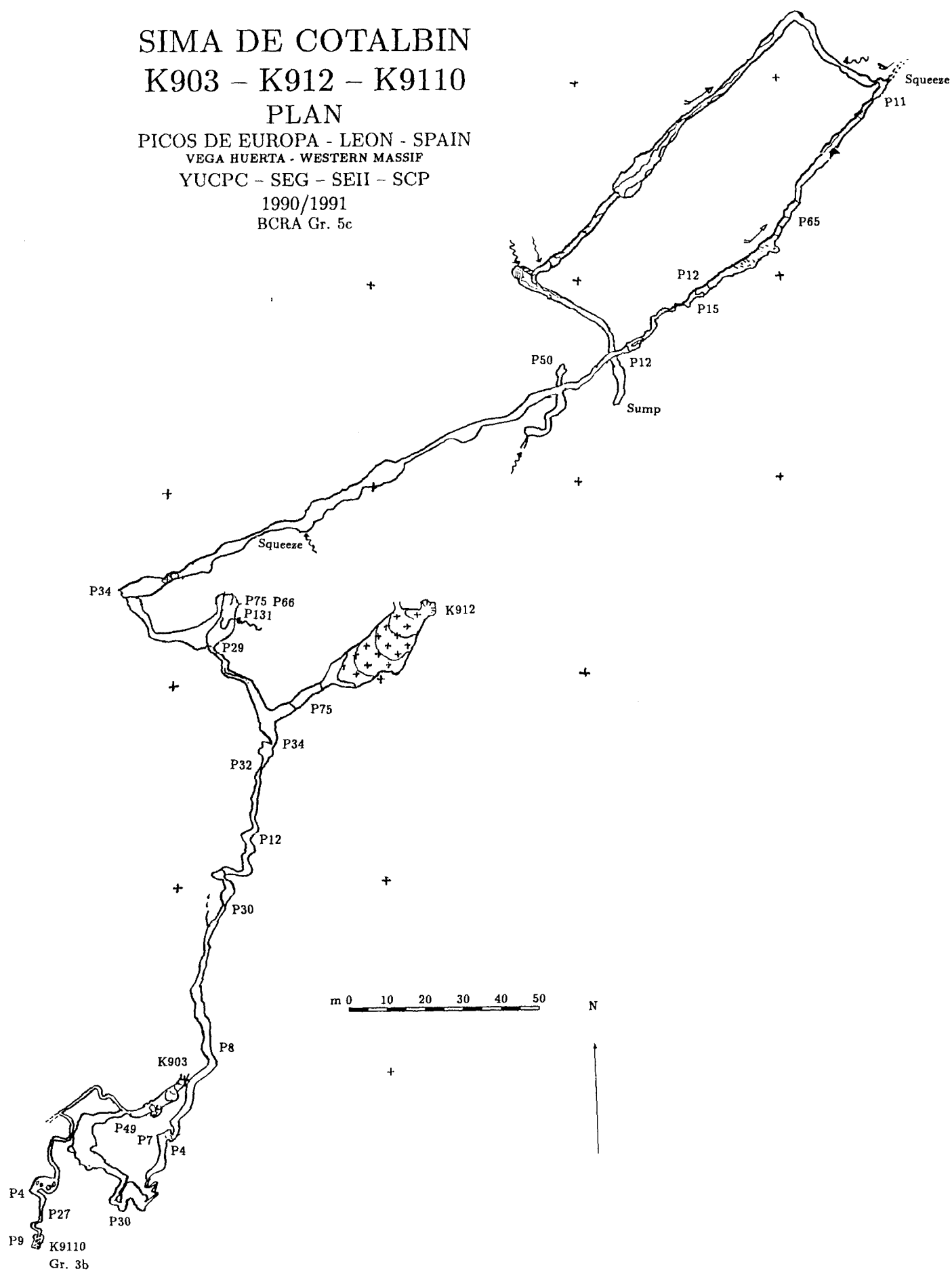
PICOS DE EUROPA - LEON - SPAIN

VEGA HUERTA - WESTERN MASSIF

YUCPC – SEG – SEII – SCP

1990/1991

BCRA Gr. 5c





*Upstream from the base follows the rift back to where it becomes too tight. Downstream drops almost immediately 2 m. The stream continues along a 1 m wide hading fissure which is traversed 40 m to a stalagmite floored chamber. Beyond this an inlet stream enters down a small cascade (unexplored) and the passage lowers into a short wet bedding crawl. This deepens into a 15 m deep meander which is followed for 50 m to a wet 8 m climb and small sump pool. A small muddy tube in the roof at the final meander may be followed for 30 m before becoming too tight.*

At the bottom of the 2 m drop, if instead of going left you look to the right the draught goes through a small phreatic tube, **Beautiful Lady**. The tube is about 30 cm high and 60 m wide — into which blows a howling gale. Originally this was dug out through alternate layers of mud and calcite and it is possible that after each Spring melt it might have to be re-dug. The low tube may also become very unpleasant following heavy rains.

Having passed through this short phreatic the passage changes to a meander of about 5 m in height with calcite formations and a draught blowing out of a roof aperture. The floor is of mud and choss. After 10 m there is a choice of ways on; one continuing as low as possible into boulders — the other over the top into the widening rift and into the remains of a 8 m diameter phreatic tube. The top of the rift emerges at a bend in this passage. To the left is one completely sediment filled choke with helictites — possibly gypsum — found near the end. Straight on over the boulders for 40 m leads to a well decorated part of the phreatic with inlets coming in from the roof. At the extent of exploration is a 5 m mud climb up the steeply rising layers of mud to a gap of about 2 m at the top through which the draught blows.

Along the length of this phreatic are ways through the boulders to the vadose trench or rift in the bottom. This follows a fault in the rock as does the phreatic. The rift continues about 10 m under the climb and then dog legs to the left away from the fault. The draught in the trench is lost at this point going up two or more body sized phreatics in the roof at 60°, 4 m above the floor. The passage continues with areas of mud for another 8 m to an area where a lake is found.

A constriction at floor level, 25 cm wide and 1 m high leads onto the lake. The beautiful sea green water is shallow for a few feet, before becoming very deep. The lake widens to 4 m fairly rapidly and the roof rises to an aven. Eight metres across the lake the far wall rises with a short climb into a rift following the same trend as before. Just below the surface and a metre across the lake a block could be used as a stance to bolt over the lake. There is very little draught here.

The passage opposite is a narrow rift — followed in the upper phreatic. This has not been followed to a conclusion — but is thought to be an inlet.

## Prospects for further exploration in Cotalbin

Cavers have been actively exploring the potholes in the area South of Peña Santa for thirteen years now. There is still a large amount of karst to be investigated by cavers, and within the areas already explored many entrances were found to be snow-plugged or collapsed. There is therefore much to be done this coming Summer. Undoubtedly the Sima de Cotalbin System is extremely promising, and it would be a shame not to be involved in its continued exploration with our Spanish and French partners.

**Sima de Cotalbin** appears to be different to other caves in the area. Many of the caves including M2, B3, B47 and those near by — K901, K897 all trend northwards and are understood to resurge in the Cares Gorge to the east<sup>1</sup>. Like wise K913 and K903 both initially head north, but below the 131 m pitch the cave follows a major joint (possibly a fault) heading WNW — ESE in the direction of the Cares.

The route down to the bottom of the cave via the lower entrance (K912) is relatively easy compared to other Picos caves. There are three possible routes. The most sensible is in the large phreatic, by climbing up the large mud bank and following the draught. The second possible way ahead would be across the lake and into the tight awkward passages on the far side, but this appears to be an inlet. The final and most desperate route would be to follow the main stream way — and attempt to dig a way above the sump.

Both the Upper Entrances lie upon the same fault — 40 m apart.  $\pi$ 103 which currently reaches a depth of 419 m lies a short way higher up upon this fault. A rift in the entrance of  $\pi$ 103 heads along the fault but is too tight. It would be worth re-examining  $\pi$ 103 to look for possible connections. The current bottom of  $\pi$ 103 is situated in an area of very loose rock. An undescended pitch has been located. It was described as being in a rift containing many blocks very loosely wedged in the rift. The wall surfaces are apparently very fragile. However, this pitch head lies close to the line of the fault or major joint found at the bottom of K903. As this pot is quite an easy descent, it is clear that another visit should be made this Summer — with 10 cm long bolts to rig the pitch heads.

Finally in K9110 a tight rift with a 5 s drop below would be worth examining as it doesn't lie above any part of K903. It would probably require widening.

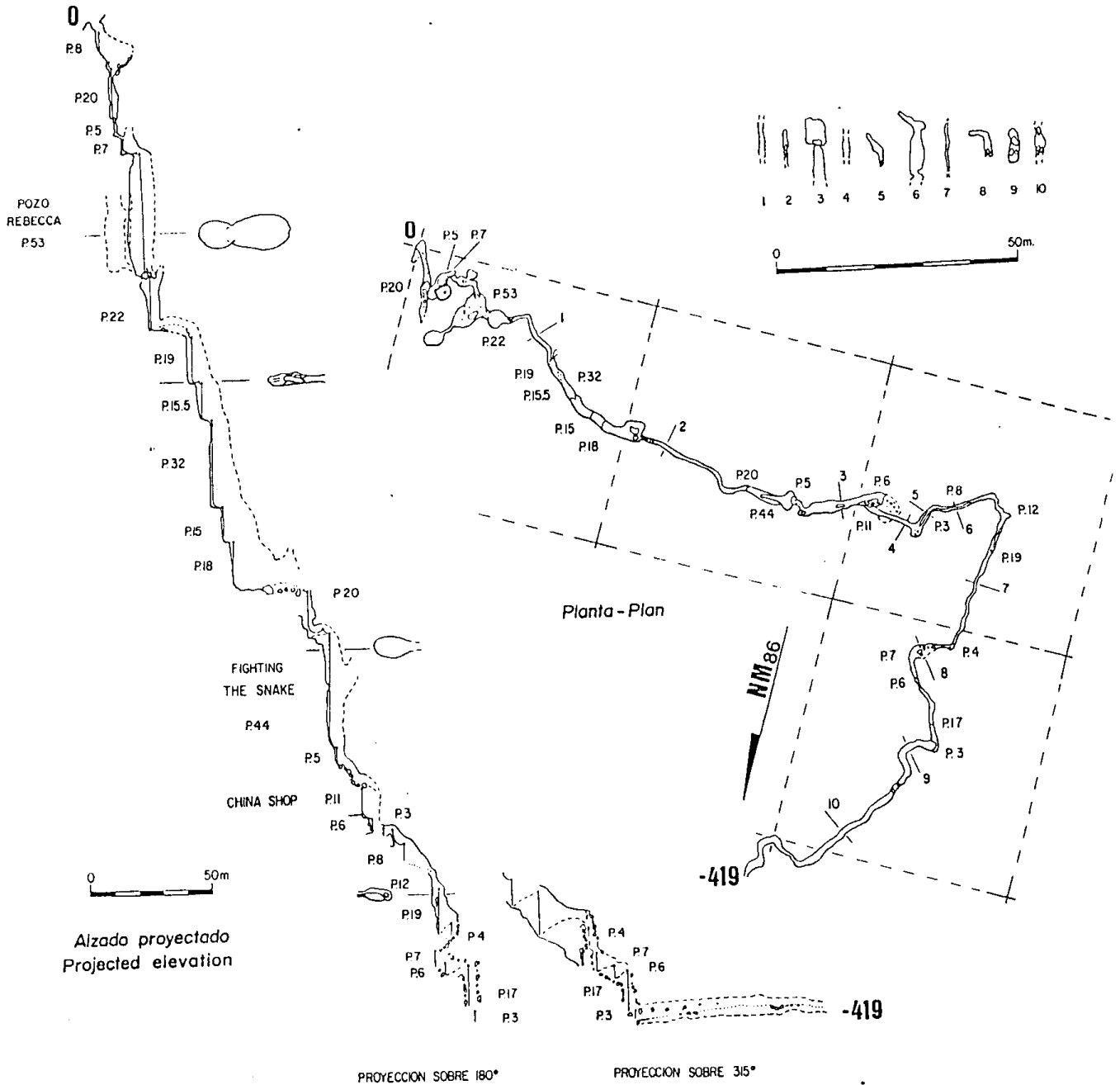
*AE/PH/DM/JW*

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<sup>1</sup> D K Lloyd; Water Tracing in the Vega Huerta Caves, Western Massif; Cave Science, 1990, Vol 17, 103ff

# π-103

SIERRA CABALLO - MACIZO OCCIDENTAL PICOS DE EUROPA - LEON  
YUCPC - SE11 / 1986

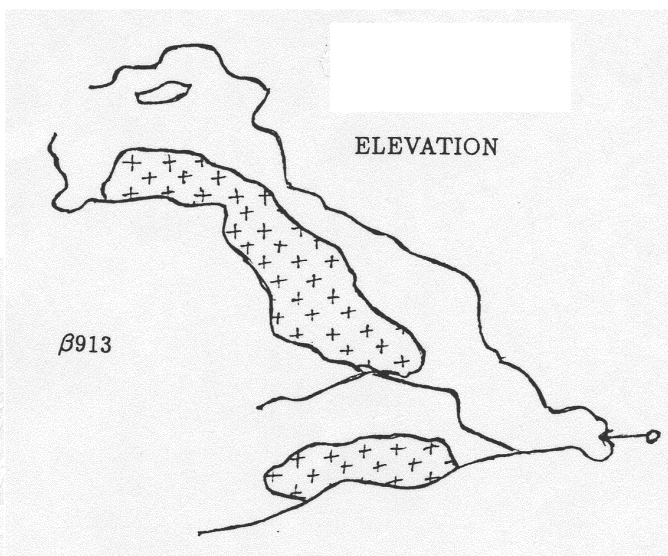
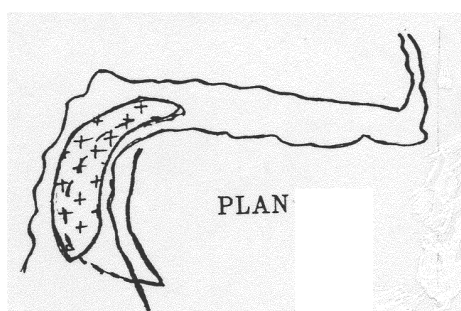


## Small Finds

### β-Area

#### β913

This cave was found in the gully just below the entrance of β47. A descending passage leads to a draughting rift but becomes too tight.



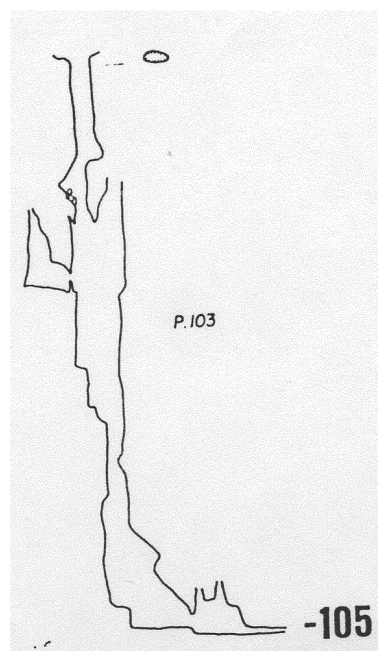
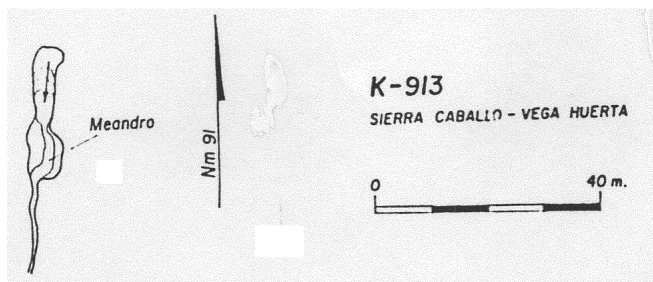
#### β9150

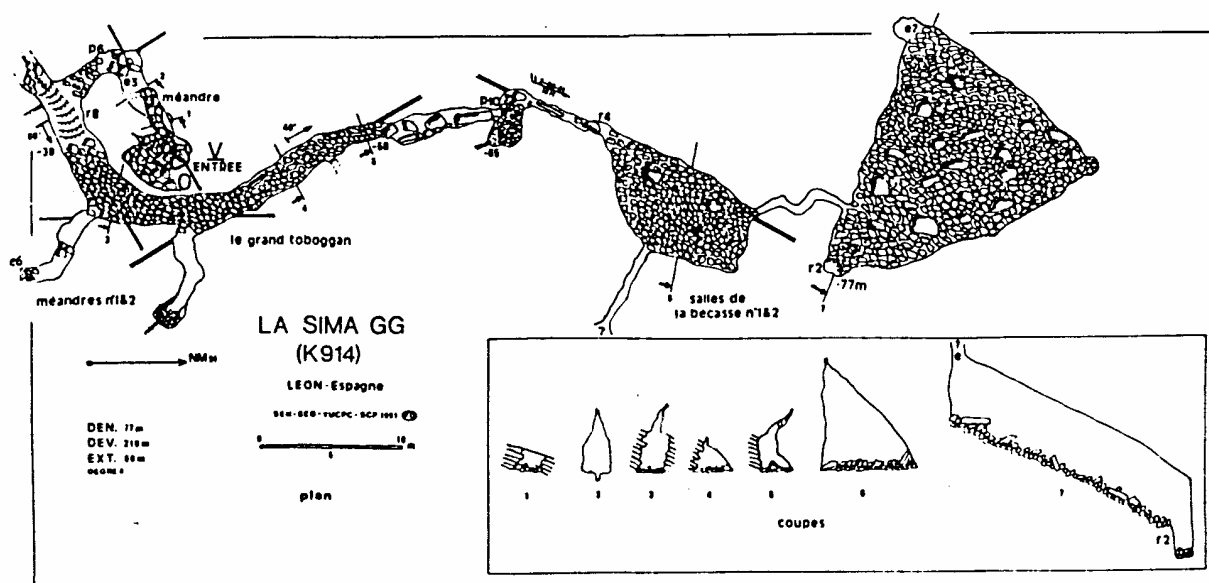
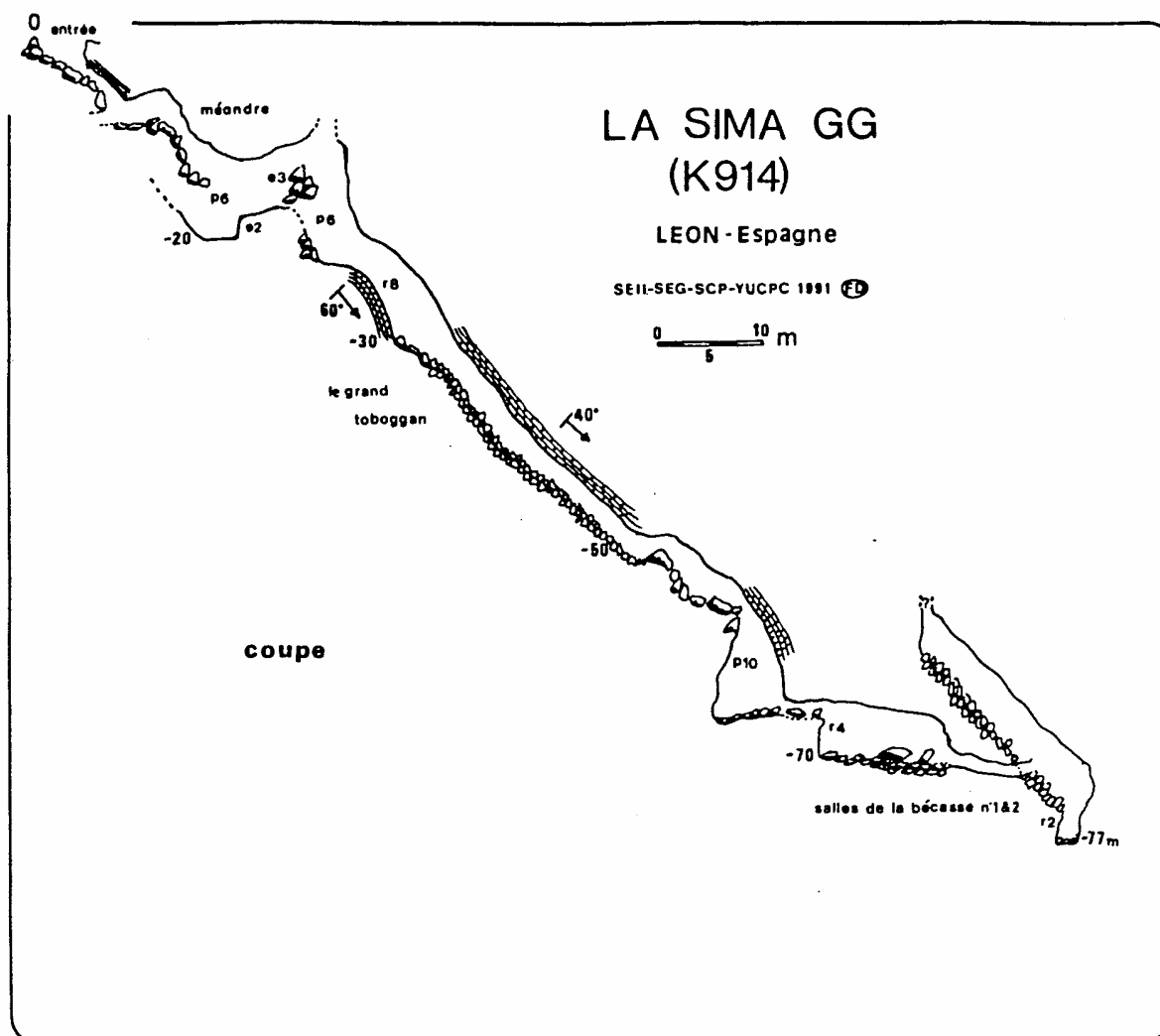
Despite its title we didn't find fifty new caves in this area. A small unobvious entrance above β10 leads to a small impenetrable hole.

### K-Area

Our French partners did quite a lot of exploration in this very promising area. Two of their more important finds (K913 and K914) are shown.

Several shafts and holes were found well beyond K912. All had some snow in them. This will be a good area to look at.

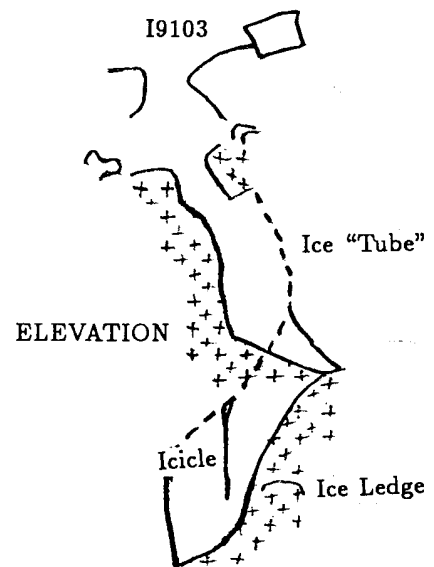




## I-Area

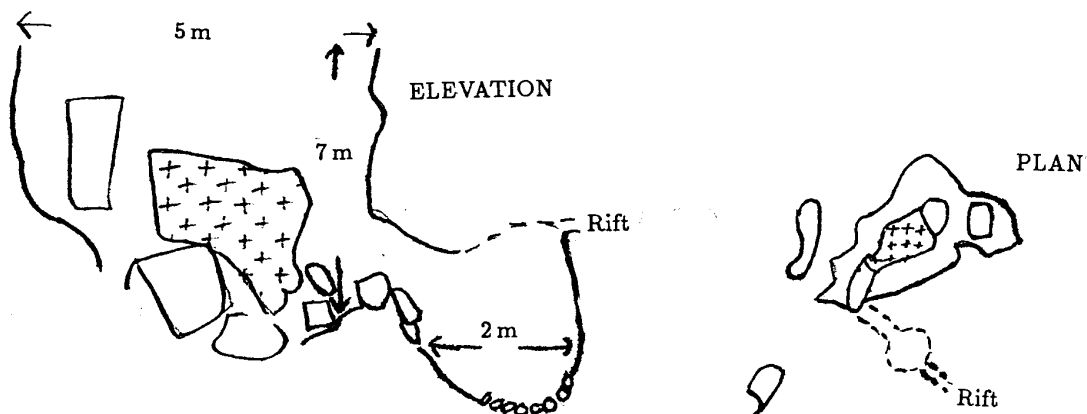
### I9103

Located under Peña Santa, this is an evil looking shaft near I36 at the "point of contact" between the limestone and whatever there is to be in contact with. 50 m of rope reached an ice ledge, but there is still the possibility that it might go — especially in a year with less snow.



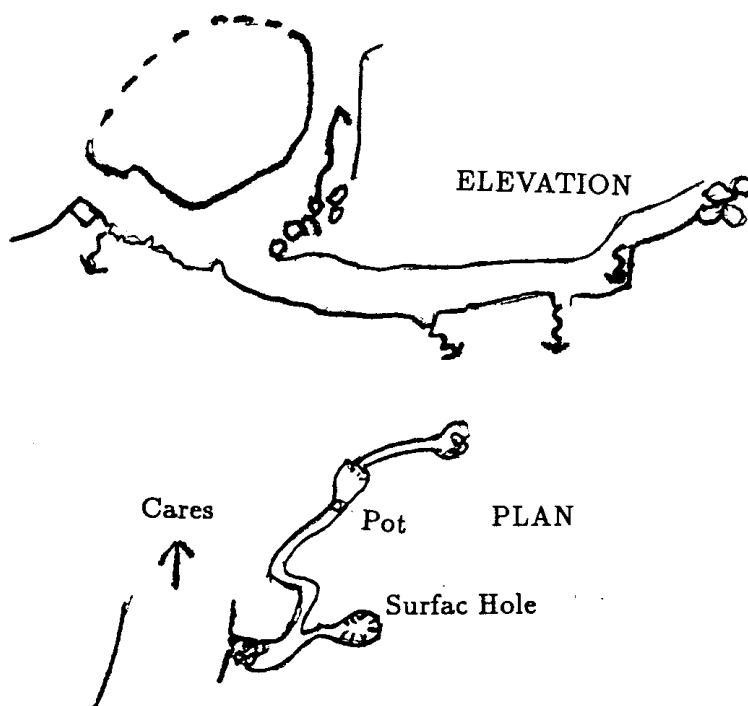
### Unmarked Pot

An unmarked hole below I41 was examined. A rift at one end closes down.



## Unmarked Entrance

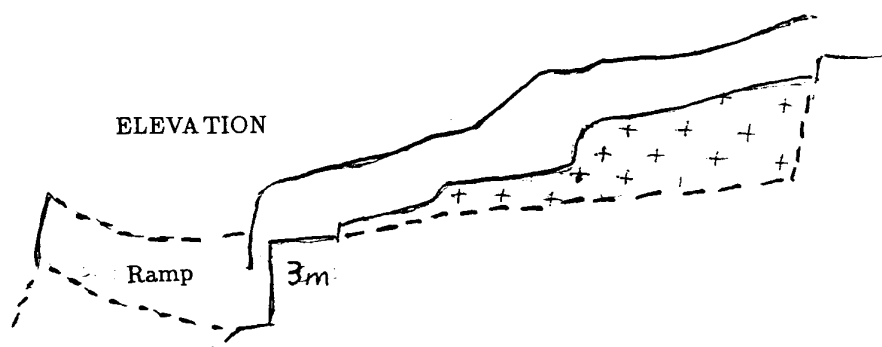
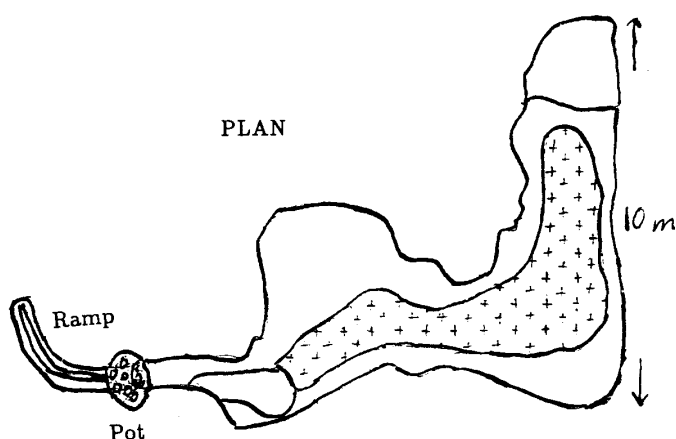
Entrance in the main gully used to approach K897. Continuing further down the valley just past the overhanging rock to the left there is a triangular entrance to the right of the gully with an upper entrance above. A very narrow passage leads to an inlet and an impassable wet pot — a bit of bang might work.



## p-Area

### p903

A small ramp initially follows a major joint before turning right. An awkward 3 m slot drops into a ramp which bends to the right only to end at a blockage. The overflow rift was very narrow and still is despite attempts with a hammer. It is currently at about 6 in maximum. The trench blows a howling gale and can be seen to bell out below for 15m. It would be well worth returning to this cave with a blow torch or some bang.



## **p902**

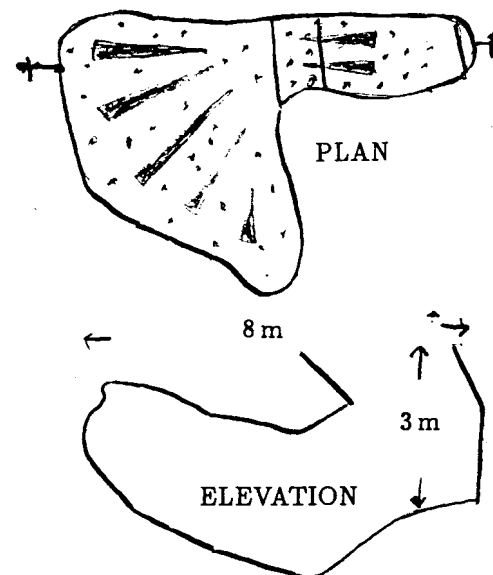
Snow plugged hole with various windows — links with  $\pi$ 903.

## **p912z**

Cave in same entrance as  $\pi$ 912. Too small.

## **H-Area**

Hole found in centre of large depression beyond the stone circles, bordering H- and  $\pi$ -Areas. A short drop leads to a downwards slope into a small chamber.



Several holes were found 100 m upslope from H906. All were choked with snow or rubble. One required a 10 m abseil.



## Equipment

### The Use of Rechargeable Drills and 8 mm Rawlbolts on Expedition

This year saw York University CPC Expedition using rechargeable impact drills for the first time in the Picos, Spain, thanks to the generosity of *Bosch* and *Black and Decker*. When we discussed our requirements we decided that there were three main considerations to be born in mind: power source, power and bulk.

For the power source we considered using both alkali and rechargeable batteries. Alkalies were out because we didn't receive any sponsorship. Rechargeables come with the drills but don't produce many holes. Motorcycle batteries looked promising but we were warned that we could burn out the motor with prolonged use — similarly with alkalies. The best bet seemed to be the rechargeable cartridges supplied with the drill — but the nearest mains source is effectively a day's round trip away. Last year one of our members, Dave Binks, had tested a solar panel and found it worked better in the Spanish mountains than it did in England (surprise). We therefore acquired the *Bosch* solar panel.

The two drills we were sent were a Bosch professional GSB 12VE and the Black and Decker BD602 DIY 7.2V impact drills. Both had variable two speed functions, with maximum speeds of 1700 and 600 rev/min respectively.

### 8 mm Rawlbolt Through Bolts

In short test in Britain using our drop test boulder — which turned out to be very hard limestone — we found that drills less than 12V had difficulties drilling an 8 mm diameter hole and that the 12V had difficulties with larger holes. We also considered it a waste of time to drill a shallow 12 mm diameter hole only to hang off an 8 mm bolt. We therefore looked into other types of rawl bolt and found the *Rawl Bolt Through Bolt*, for which the bolt diameter is the same size as the hole drilled. Reports from *Caves and Caving No. 34* suggested that these might in fact be stronger than the traditional *Spit*.

Other benefits of using the 8 mm *Through Bolts* we felt would be that it doesn't matter if you over or under drill the hole — unlike with the *Spit*. The bolt secures itself to the rock in the following manner. As the nut is tightened the bolt is pulled outwards and the sheaf forced to expand as it moves against the cone. Once the bolt is secure, the nut is difficult to turn. Extreme over tightening damages the hanger before shearing the bolt. Another benefit which became apparent whilst in Spain is that if either the rock is bad or the hole drilled too large the nut does not tighten, but the nut pulls out gradually. With a *Spit* you wouldn't necessarily know until the bolt failed.

## Placing a Bolt

The method employed when placing a *Through Bolt* is initially to test the rock for soundness with a hammer and to clean and flatten the surface. Initially a 6 mm diameter hole is drilled. There are two reasons for this. Firstly it doesn't stress the motor as much which at 8 mm is approaching its limits. Secondly, the 6 mm hole drills quite rapidly (about 30 s). This hopefully will give a straight hole, whereas an 8 mm hole drills far more slowly and in an awkward position may not be true. The bit is then changed and the 8 mm hole drilled.

During drilling the dust should be cleared by reaming the hole at slow drill speeds. Following a few seconds initial drilling the chuck should be retightened. The drill bit should not be allowed to heat up as the drill tip blunts very easily when hot — this is another reason for changing the bit half way through.

The rawl bolt we used was 5 cm long (next size 6.5 cm) which effectively gave us 4.6 cm. The manufacturers suggest a minimum 3 cm deep placement which leaves just enough space for plate hangers, but not for rings. For a correctly drilled hole the bolt requires to be tapped in but NOT hammered. (Hammering only stresses the rock and is pointless as the bolt only secures itself as it is pulled out. Hammering also flattens the end so that you can't retrieve your hanger at the end of the expedition.) It should be remembered to tap these bolts in a few mm more than looks sensible as the bolts pull out this far before locking.

After a few people have passed by the nut should be given a final quarter turn.

We do not think these bolts would be of any use in a popular caving area due to probable damage to the thread and loss of the nut which is likely to occur with constant rigging and derigging.

## Drill Usage

Both the *Bosch* and *Black and Decker* drills were excellent to use. Obviously I cannot compare the makes because they are different in power and features. In rock that was taking thirty minutes to hand drill (yes, it was very hard rock) took the 12V *Bosch* around three minutes and the 7.2V *Black and Decker* five minutes.

The main draw back with the *Black and Decker* we received is that the battery pack is fixed which means you can't use a spare cartridge. We had two battery packs for the *Bosch* which meant that not only could we have one charging whilst the other was in use, but we could leave the drill at the bottom of the cave — for two weeks — and only bring the batteries out. No sign of internal damage was found following the expedition although the chuck had corroded. (*Black and Decker* do produce a range of drills with removable battery packs.)

We were however disappointed with the number of bolts each battery pack gave — 3 to 5 bolts - but we suspect this could be because the rock is very hard; the caves are very cold (0 - 2°C); the batteries were new (new batteries don't charge fully for a while). However these were three to five bolts we didn't have to drill by hand.

A disadvantage in using the drills is that you end up having a lot more kit to get tangled up in whilst pushing pitches. Not only do you have the electric drills and paraphernalia but you still have to carry hand bolting kit for when the battery pack runs out.

The 12V drill with removable cartridge tended to be used for deep caving whilst the 7.2V drill with its fixed battery was generally used for surface of near-surface work.

The only complaint about the *Bosch* drill is that everyone felt the chuck to be poorly designed. The teeth are not very deep when compared with the *Black and Decker* and easily foul with dirt. Towards the end we could not tighten the drill bit up without the chuck key jamming and the drill bits kept on coming loose.

Conversely, the 7.2, 9.6, and 12V *Bosch* models all have the same internal specifications so that you can connect a 12V supply to a 7.2V drill — as long as you don't drill continuously for a long period.

The solar panel worked very well charging the cells in eight to ten hours. The panel itself measures 25 × 25 cm, but we placed it in a wooden box to give it some protection. We would suggest that if you wish to use a solar panel for charging that you build your own as it is very expensive — unless you can get one at trade prices. We suggest that you don't always follow *Bosch* instructions — they advise that you shouldn't place the solar panel in direct sun light!

We do not think that an electric drill is a worthwhile tool for placing a couple of bolts in a cave — unless you can basically walk in and out. We do however recommend them for use on vertical expeditions.

YORK UNIVERSITY CAVE AND POTHOLE  
CLUB  
PICOS 91 EXPEDITION

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COMPANIES FOR THERE ASSISTANCE

SPORTS COUNCIL  
YORK UNIVERSITY ATHLETIC UNION

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BOSCH (*Drill and Solar Charger*)  
COLEMAN'S (*Sauces*)  
DERWENT VALLEY FOODS (*Philiass Fogg*)  
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