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An Evening Stroll to Ano

"Dot"^{or} "To Dot."

Having spent the last four days coped up inside the van, Jonathan & I decided to go up the mountain on the evening of Day 1, Wednesday 8th July. 17 rucksacks full of gear had already come up so we loaded our packs with a few essentials like gas bottles, verbs, medical kits & washing up bowls & set off for Ano in the mist at half nine.

We went reasonably quickly, almost making to Morador by eleven. I say almost because we never actually found it, but left following a line of cairns from the top of set 4. Soon there were no yellow dots to be seen, only green glowing glow worms.

We decided we'd only get hopelessly lost if we tried to retrace our steps back to the path and so carried on taking compass bearings, through the mist.

Just as I was about to suggest ~~we~~ stopping for the night Jonathan exclaimed: "Beep Beep Beep Beep Beep Beep Beep Beep Beep."

"What the hell's that noise" (not realising it was J)
"A yellow dot"

"Oh... Good!"

We followed the dots past a nesting old rook & to a small headland with a 20' drop on 3 sides. At the top was a yellow dot which I sat on ~~&~~ while Jonathan went to look for the next. After much scrambling about, Jonathan returned saying he'd found a path but it had

No yellow dots on it.

"Sit Well we could follow the path, or have another look or just stay here 'til morning"

"We could see what the sign said"

This proved to be an excellent sign as it pointed to the refugio in the opposite direction to that we'd been walking. We were fast approaching Trea!

We spent the rest of the walk following dots. I would sit on one while Jonathan searched for the next. Finally we saw the Refugio sign. I went & asked where the english tents were. We were pointed in the right direction & finally made camp at half past midnight, three hours after we'd set off!

Over.

Thurs 9th July

Condition of store tar a disgrace - jam pots thrown amongst awnings & too rolls, more too rolls in shed, clean & dirty crockery all mixed up. 9/10 ("Disgraced")

Neil & Mel & Muriel

9/7/87

Walk up to Jaltayu looking for caves:-

We started off heading directly towards Jaltayu & trying to keep away from the main path (& hence find previously undiscovered caves). To the right of the main path, not far from Ario looked fairly promising. The first 'decent' entrance we found has been marked once '87 X. It goes down approx 15m - free-climbable but there is no way on. Next, ^{perhaps 100m more towards J.} we found a small rift about 20ft deep. Can be walked in from the bottom & doesn't appear to go. Marked SIE X. We then crossed the path and arrived on up to the left of it. Neil found Wolfs-Head Cave - which consists of a 45° slope for c 15ft with a wolf's skull sitting at the end. Further up on the side of the path is a fairly promising piece of pavement with a few shakholes - nothing seems to go here though. Also on the left of the path, visible from further down the slope is a large cavern with snow in the bottom. The level of this cave is slightly higher than the refugio (which is clearly visible) & seems to correspond to the description of 7/7. It goes nowhere. After this, the area gets fairly grassy & doesn't look very promising. We walked up to the top of [7/7 is marked and is to the right of the path - GN.]

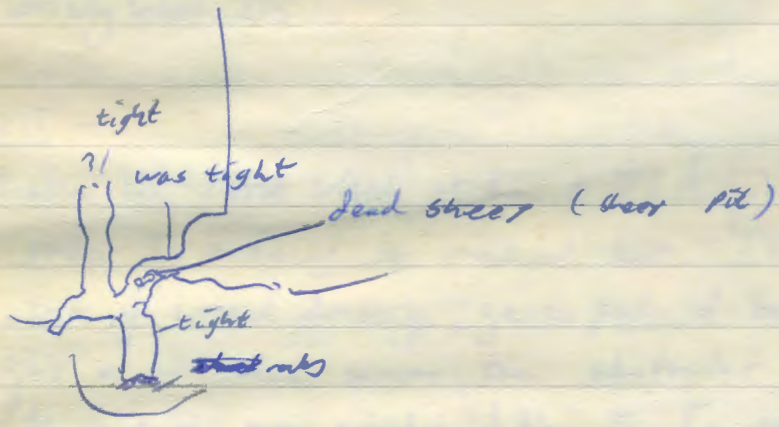
Tultayu just in case we would see anything, but all we spotted was $\text{\textcircled{a}}$ absolutely stupendous, magnificent view down toward $\text{\textcircled{a}}$ gorge. It's a ~~stunning~~ high cliff dropping straight down for at least a kilometre to a verdant valley. The peaks towards La Verdelluaga are pretty impressive, as are $\text{\textcircled{a}}$ ones above $\text{\textcircled{a}}$ gorge. It looks like there are caves in $\text{\textcircled{a}}$ cliffs opposite, but they'd be impossible to reach!!

N.B. For future shaft bashing in this area it is probably more efficient to just take one rope, a helmet & tape etc for belaying. ~~Any~~ Anything that looks like it goes can ~~be~~ be marked & suitable gear fetched from $\text{\textcircled{a}}$ camp.

Dan arrived, dumped down hundreds of metres of rope, ate a bit of scoff & then did a carry down of three ~~bags~~ bog-rolls. Apparently base has suffered from $\text{\textcircled{a}}$ over-enthusiasm of $\text{\textcircled{a}}$ carry-uppers to take $\text{\textcircled{a}}$ light bulky essentials from base to Ario!!!

shaft bashing 10/7/84 (33/5)

found by paul b. the previous day Paul b. J.C. and J. took rope and ladder to explore Paul found a small squeeze so Jon and I hammered and dug till I got to the next chamber, two ways on, one led to a boulder floor ≈ 3m below the other to an aven digging in one corner showed way on and the roof was dimly lit ≈ 7m before getting tight and seemed to be a higher entrance to the sheep bit. further hammering was needed so I could get out making the once tight entrance rather big.



Jon. T

Thursday 9th July 18:00 → 20:00

Phil & Sargant solo area 5 stroll. Identified (I ticked in the shaft kit's code) lots of entrances. Found 13/5 which is down and to the LEFT of 12/5, not right as in the Proc. Found an SIE 86 shaft which needs looking at (labelled SIE 86 ⊗) down below 12/5 & a long way further over left - away from Sultayre. Also found two crawling entrances. Tentatively labelled the vents 30/5 & 32/5, the SIE shaft can be 31/5. Entrance to Cistna 12/5 has a nest with 6 eggs in it.

FRIDAY 10th July

Phil & Lynn shaft bashing area 5. Labelled 32/5 with paint - a very tight & shaped passage which needs a sneller & more dedicated care than I got in & looked round the bend to the right - it goes but doesn't get my breezer. Still got a draft.

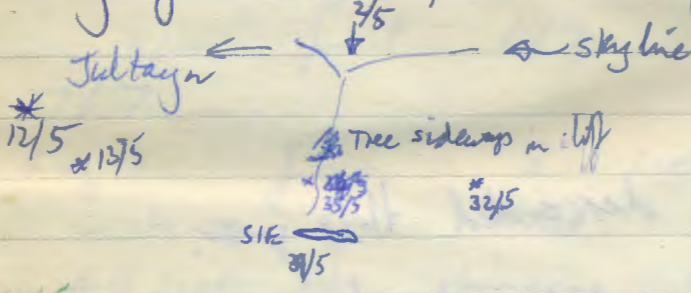
The first part of the paper is devoted to a general discussion of the problem. It is shown that the problem is of great importance and that it has not been completely solved. The author then proceeds to a detailed analysis of the problem, showing that it can be reduced to a set of ordinary differential equations. The solution of these equations is then obtained, and it is shown that the problem is solved.

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Rigged a 35m rope on ^{39/5} ~~31/5~~ (SIE hole) but did not paint any new labels. Lynn went down to the end of the rope & said it was 20m deeper than the rope; a snow plug may mean that there is a way on this year. Needs going back to with a longer rope. SIE bolt sticks out a bit but could be used as 1/2 a Y hang - take lots of tape.

Curious glance at ^{35/5} ~~30/5~~ on the way back



side of the hillside is the gorge looking uphill

35/5 is a dig under a cliff.

^{39/5} ~~31/5~~ is vertically below 2/5.

MEDICAL KIT -

After Johnathan had a rock lobbed at him & I (Philip) tripped and lacerated myself on several rocks, I examined the medical kit. It has dozens of \triangle bandages but NO stock of wound dressings, gauze pads & bandages: the things you need for cuts just a bit more serious than elastoplast will cope with. Have we supposed to bring our own supplies of these? In the meantime I have sacrificed one of the triangular bandages for body-patching.

Shit it's hot. Graham arrived having carried a mega pack up just after the heat of the day. After gasping a lot and expressing mild surprise at the concept of (missed a line here through incompetence) "choco-orange" he settled down to organizing food for an estimated 10 people: Paul, Philip, Graham, Johnny, with Shelly + Margot + Dan expected from Lagos, & Neil, Johnathan & Neil still booking 7/7 on ladder.

20:00 Still no return of 7/7 team or team for Lagos, looks as if we get a lot to eat.

note added 16/8/87

6/7 has never been descended this year.
In fact, never since it was noted and clearly marked
with green paint back in '81.

The cave labelled "6/7" this year has nothing to do
with it, is miles away, in fact not in area 7 (probably
in '82-style area A) though area 7 has now been extended
in this direction, approaching area 9. It has been renumbered

46/7.

Gyuhad.

Friday
Neil & Mel in Area 7

Found 7/7

descended shaft for 4 ladders, came back
in afternoon for more gear & returned
with Jonathan C.

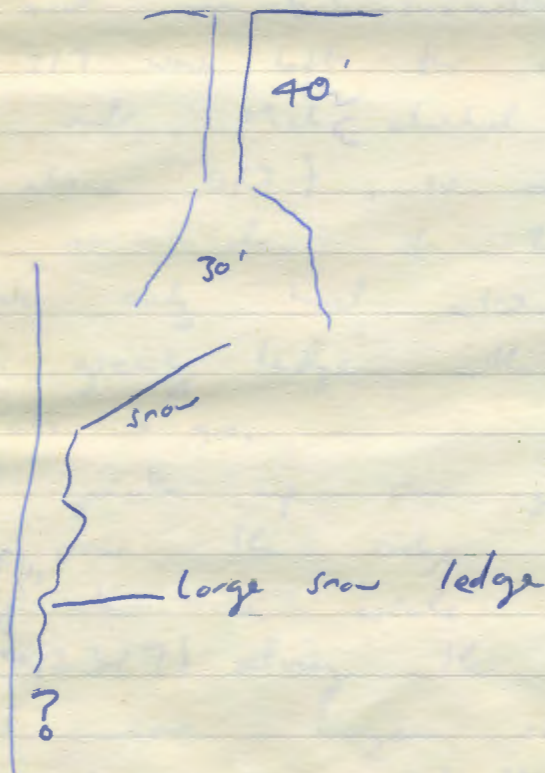
Also found 6/7 and worked up 22/7 23/7 24/7

7/7

Rig in from S. side of cross rifts
- others are blind.

40 feet of chimney to a 30' free hang
onto snow slope, descended snow slope
at left hand side and laddered
down between plug and wall for
a further 3 ladders - no sign of
bottom, many snow ledges, overhangs
etc, quite unpleasant!

Lifeline impossible past here.



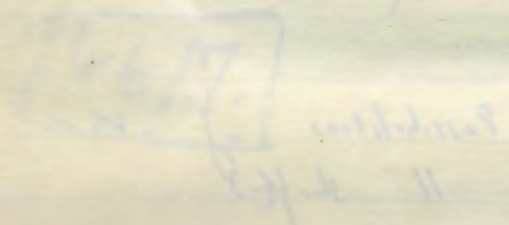
Possibilities of other
|| shaft

Neil

[Faint, mostly illegible handwritten text, possibly bleed-through from the reverse side of the page.]

writing on
pages.

W3



11/7/87 pros
bottomed, small
parallel slits 6' deep.
Blocked
with rubble.

[Faint handwritten text, possibly a signature or initials.]

OTHER Finds in Area (7) aka 3rd System.

When Neil and Mel came back to Arco at around midday, they were quite pleased with themselves, having used up all their ladders. Unlucky boulder chokes was not my idea of fun so I jugged at the idea of sitting around watching them thrash around, so we could bring down all the gear in one go, if no way on was found.

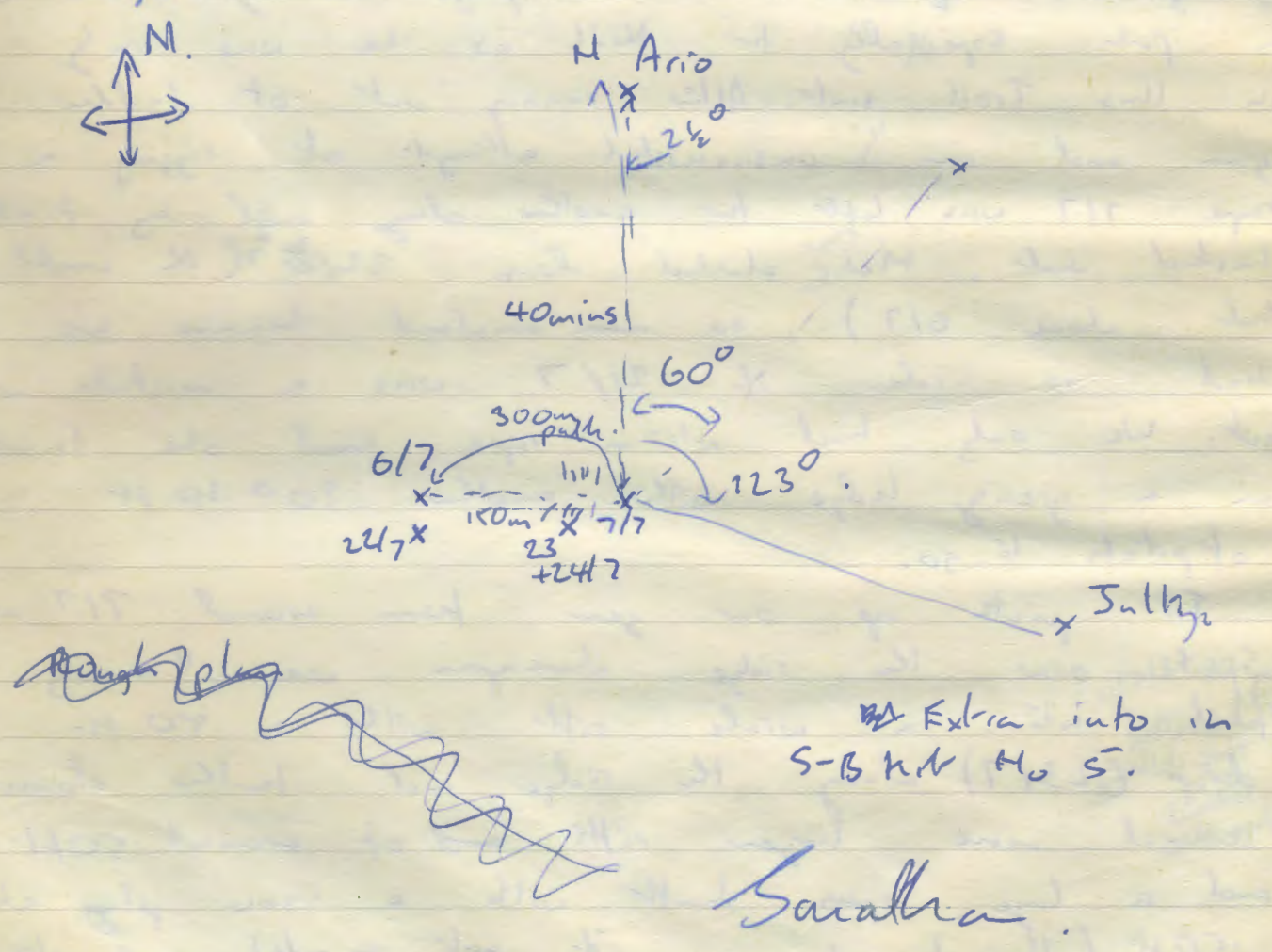
With not much else to do I haggled off in search of G/7 which turned out to be just as snow plugged. On the way back, I went up a gully where at the top there was a small hole which seemed to go.

Back at 7/7 ~~there~~ the one seemed to be opening out a bit the snow plug becoming more of a path especially for Neil as he was only in this Troll sub. After running out of ladders again and an unsuccessful attempt at rigging a rope 7/7 was left for another day and my finds checked out. Mel climbed down 22/7 (the small hole above G/7), so we were unclear because we had no idea if 21/7 was a mistake or not. We only had a 10m rope and she landed on a greasy ledge with another 20-30 ft of pitch to go.

To pick up our gear from around 7/7 we hopped over the ridge whereupon we nearly fell into a wide rift with a 50 ft drop (23/7) along the ridge and further down several more larger rifts and at around 50 ft and a large open shaft with a snow plug about 150 ft (though I saw it not myself) and stones which clattered down one or two sides of it.

for quite a distance. One of these 5+ shafts/cracks
 was numbered 24/5 the rest left for the moment.
 Compass bearings were taken to pinpoint these caves
 on several good routes to them though not. As we
 scumbled around for 10 more minutes though found
 nothing else in the near surroundy though several
 dolins in the direction of Jalkayen looked
 promising. As it was the caves (23 + 24/7) turned
 out to be on the ridge just above 7/7 (as the
 next one along, I can't remember).

Anyway in the area there are lots of caves
 with good potential between about 1700 + 1800 m and
 with the possibility of more caves higher up along
 the "fault" line which passes between 7/7 and
 23 + 24/7. We have found the caves for 1930
 + beyond.



Saturday 11 July

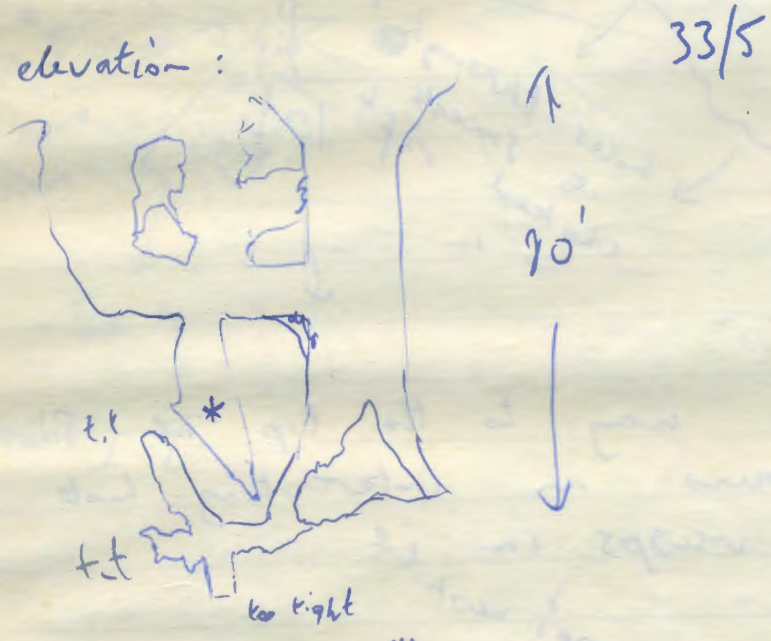
07:45 Phil S. goes off to dig ^{39/5} ~~32/5~~ - to the bottom this time.

Recap: Fri 10th July: Shaft bashing near Cabeza la Formosa.

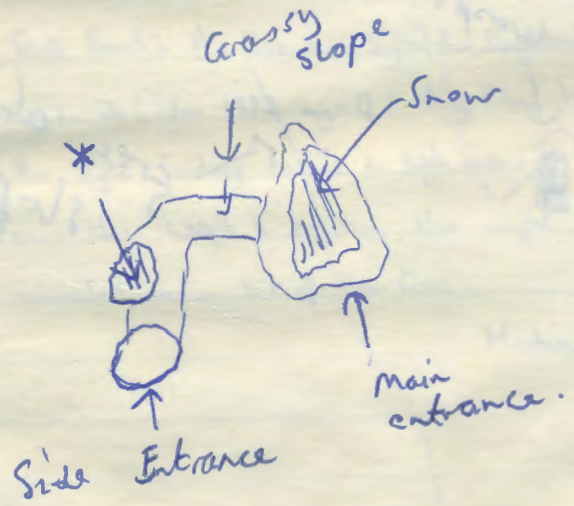
Objective: To investigate shaft found previous evening.

This was safely descend on ~ 90' of ladder. A small hole at the bottom of the main shaft was pushed for ~ 20' by JT, JC. It was marked 33/5

Extended elevation:



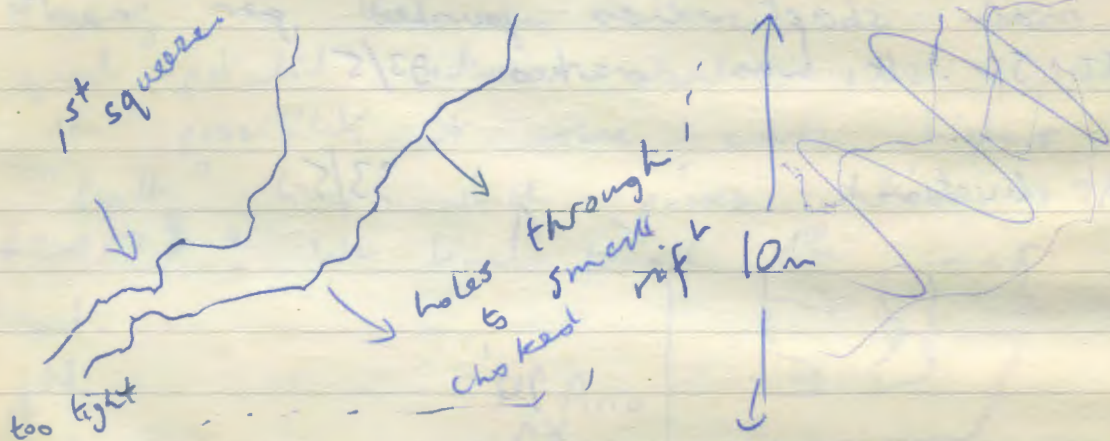
Plan.



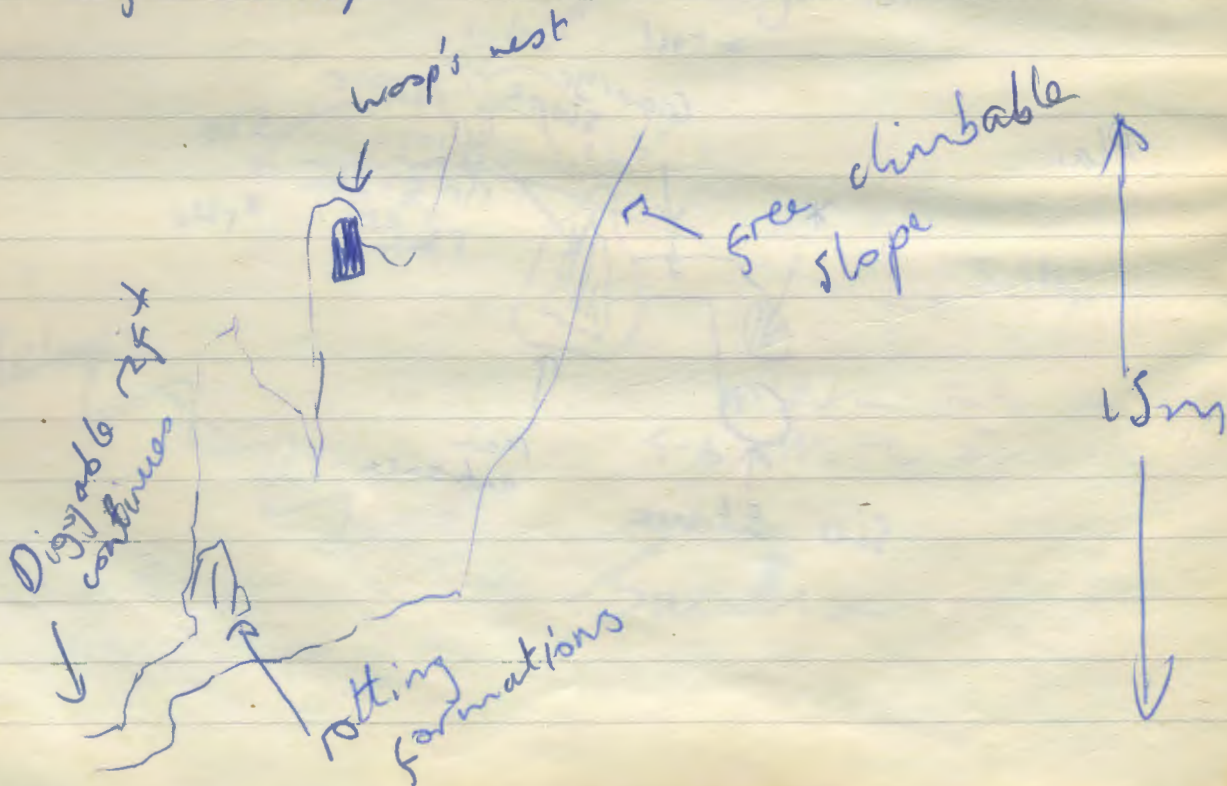
After this we looked around and found
 optimistic ~ 100m away from 33/5. A further
 100m away was a promising rift ~ 10m
 which we had a dig in. We got through
 one awkward squeeze and were stopped
 by another about 6' further on. This
 hole had an SIE mark and was
 left unmarked.

NEW
 CRACK
 →

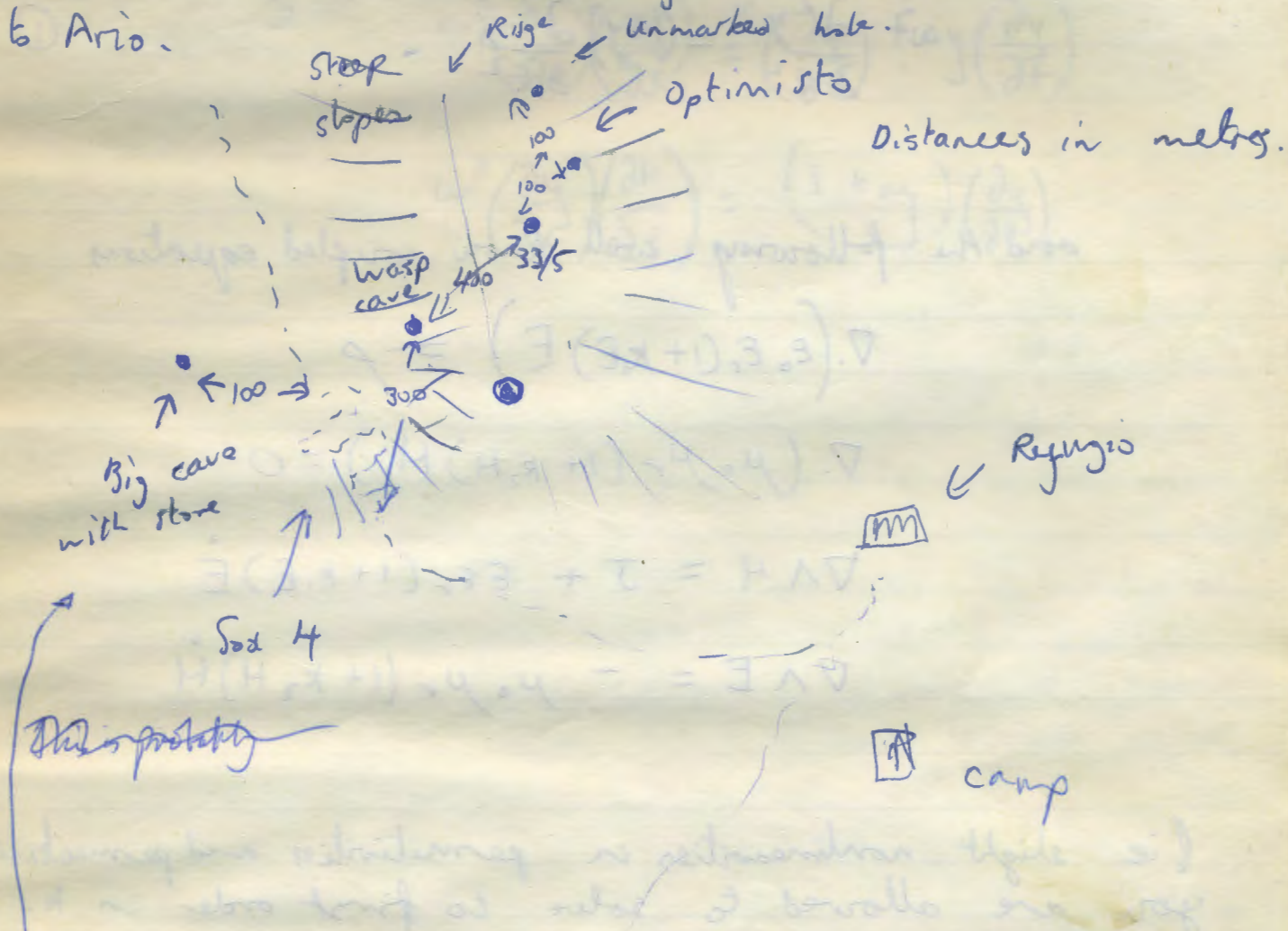
Elevation



On the way to the top of Sod 4
 we found an interesting hole with
 lots of wasps in it



We carried on and dumped the gear at the top of Sod 4 and went down to a large cave visible from the path below Sod 4. This has a large entrance and chamber and to the left is a small store with a wooden door. After this we returned to Ario.



This cave was the first found in the Ario area by John Singleton & myself in 1979. It then had very impressive ice formations in it. In 1982 myself & Andy Riley had another look (no ice this time) & found a climb up to the right leading to rift & high aens. A very narrow streamway seems to go under the store. From the height & position this might feed into the top end of the Xite streamway. Entrance reminded me a bit of Dow Cave.

Martin L.

Paul wants something to do! :-

Paul

solve the following for y as a function of x & t

$$\omega^2 \frac{d^2 y}{dx^2} = (1 + \alpha y) \frac{d^2 y}{dt^2}$$

$y \rightarrow 0$ at $x \rightarrow \pm \infty$ $\int_V y^2 dV$
 ① = constant with time.

and the following well know coupled equations

$$\nabla \cdot (\epsilon_0 \epsilon_r (1 + k_1 E) E) = \rho$$

$$\nabla \cdot (\mu_0 \mu_r (1 + k_2 H) H) = 0$$

$$\nabla \wedge H = J + \epsilon_0 \epsilon_r (1 + k_1 E) \dot{E}$$

$$\nabla \wedge E = -\mu_0 \mu_r (1 + k_2 H) \dot{H}$$

(ie slight nonlinearities in permittivities and permeabilities
 - you are allowed to solve to first order in k_2 & k_1 ,
 - for simplicity you may assume $\rho = J = 0$)

$$\omega^2 \frac{\partial^2 y}{\partial x^2} = \frac{\partial^2 y}{\partial t^2} + ay \frac{\partial^2 y}{\partial t^2}$$

~~$$\frac{\partial y}{\partial x} \times \frac{\partial x}{\partial y} \Rightarrow$$~~

$$\omega^2 \frac{\partial y}{\partial x} = \left(\frac{\partial x}{\partial t} \right) \left(\frac{\partial y}{\partial t} \right) + ay \frac{\partial x}{\partial t} \left(\frac{\partial y}{\partial t} \right)$$

$$\Rightarrow \omega^2 \left(\frac{\partial y}{\partial x} \right) \left(\frac{\partial t}{\partial x} \right) = \left(\frac{\partial y}{\partial t} \right) + ay \left(\frac{\partial y}{\partial t} \right)$$

$$\omega^2 \left(\frac{\partial y}{\partial x} \right) \left(\frac{\partial t}{\partial x} \right) = (1 + ay) \left(\frac{\partial y}{\partial t} \right)$$

$$\text{Continuity equation } \frac{\partial \rho}{\partial t} + \nabla \cdot \mathbf{j} = -\frac{\partial \rho}{\partial t} = \omega$$

$$\left(\frac{\partial \rho}{\partial t}\right)_{\text{total}} = \left(\frac{\partial \rho}{\partial t}\right)_{\text{free}} + \left(\frac{\partial \rho}{\partial t}\right)_{\text{bound}} = \frac{\partial \rho}{\partial t} = \omega$$

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following $\left(\frac{\partial \rho}{\partial t}\right)_{\text{total}} = \left(\frac{\partial \rho}{\partial t}\right)_{\text{free}} + \left(\frac{\partial \rho}{\partial t}\right)_{\text{bound}} = \frac{\partial \rho}{\partial t} = \omega$

$$\nabla \cdot (\epsilon_0 \mathbf{E} (1 + \chi_e) \mathbf{E}) = \rho$$

$$\nabla \cdot (\mu_0 \mathbf{H} (1 + \chi_m) \mathbf{H}) = 0$$

$$\nabla \wedge \mathbf{H} = \mathbf{j} + \epsilon_0 \nabla \times (\chi_e \mathbf{E})$$

$$\nabla \wedge \mathbf{E} = -\mu_0 \nabla \times (\chi_m \mathbf{H})$$

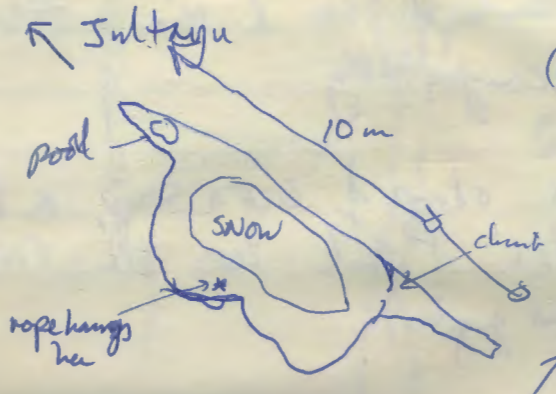
In slight contradiction, in paramagnetic substances, the spins are allowed to align to form a net magnetic moment.

For simplicity, you may assume $\chi_e = \chi_m = \chi$.

Sat 11 July (again)

39/5
OVCC
37/5
(UNLABELLED)

(SIE '86)
(LABELLED)



45m deep



Knocked this off this morning with the 50m barlow, a couple of m left at the bottom.

~~35/5~~ 35/5

Then went & stuck my body in ~~35/5~~ ³⁵/5 (unlabelled) just on the cliff 50m below the horizontal tree. This is a pneumatic tube poking out of the hillside, floored with loose rocks and with a solid ceiling. I lay in it in my jeans & sweatshirt gardening it with my feet in the sun still - nice & cool. It goes off to the left still protruding but needs a lot of (small) rocks shifting. Note for gentlemen: do not dig this cave with a butt zip on your jeans & baggy knickers.

Shaft Boring Well in Area 5

I walked back from ~~37/5~~ ^{39/5} ~~contouring~~ wond away from Jultayu, going up slightly until I got to the Valle Extranu which I followed up to Arco, (away from Jultayu)

About 100m horizontally from the horizontal tree & slightly up reached an area with a lot of shafts, nearly all ~~clear~~ obviously blocked, we could verify a more determined climb down. Since the place was obscure, I was on my own & nobody knew where it was, I decided not to try it.

Coming up the Valle Extranu (which from down there looks as if it is the ~~last~~ last but one valley) came across a steep fold cave. Big open gash going up inside at 45° about 20m ~~wide~~ wide and 3m high. Was up into a flat crawl at the top with a solid roof & chossy floor. Didn't push it. This cave is

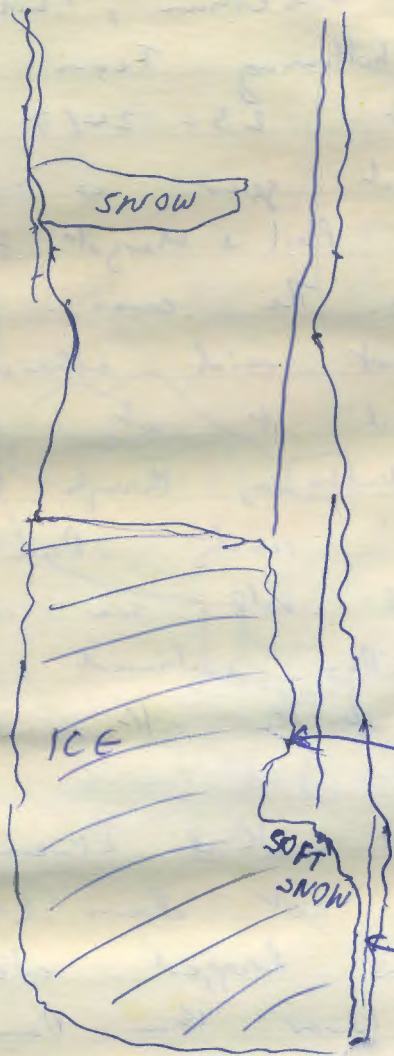
easily distinguished by the ~~to~~ 30m 'nettle slide' pouring out of the entrance down the hill. A fair number of flies & these nettles STING. Jeans required to read outside comfortably.

Margot arrived. We had a slug of cup a soup, a bit of bread and then we got some water. Paul has the FIEBRE DEL HENO sniffles (& the gags, wheezes, sneezes and gurgles).

Began to cloud over at 14:00 → 14:30, sun coming through cloud.
rumour has it, it was N.N.I.

O.K. own up, who bought the 'Sal de Regimen'. After reading the ingredients & discovering that there is actually no Sodium Chloride in it, but that there is Magnesium Sulphate & Calcium Stearate (well known laxatives) we have decided that it is the Spanish equivalent of Andrews, or Epsom salts. Well done Martin! I shouldn't think it would have a laxative effect unless you had a whole jar full, but it certainly doesn't replenish your Sodium.

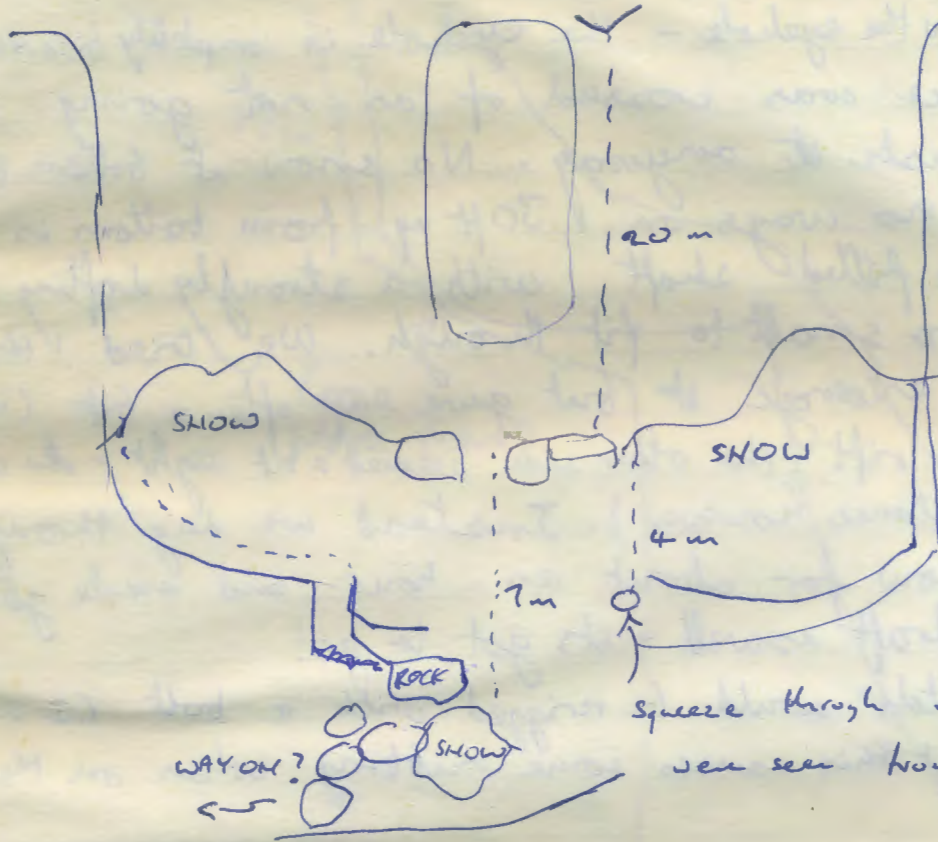
12th July. 7/7. Dan, Jonathan & Graham
Having heard great reports of this cave, we dashed up in the heat. Eventually found water & Graham went down while Jonathan & I bashed a couple of bolts in. I followed Graham down part of shaft to spot between shaft wall & ice column. Went down between wall & ice & got VERY COLD indeed. This cave ought to be renamed FRIDGE CAVE. Graham went out while Jonathan discovered alternative ways on under the snow. Surfaced & re-rigged. Very cold indeed.



GRADE -!

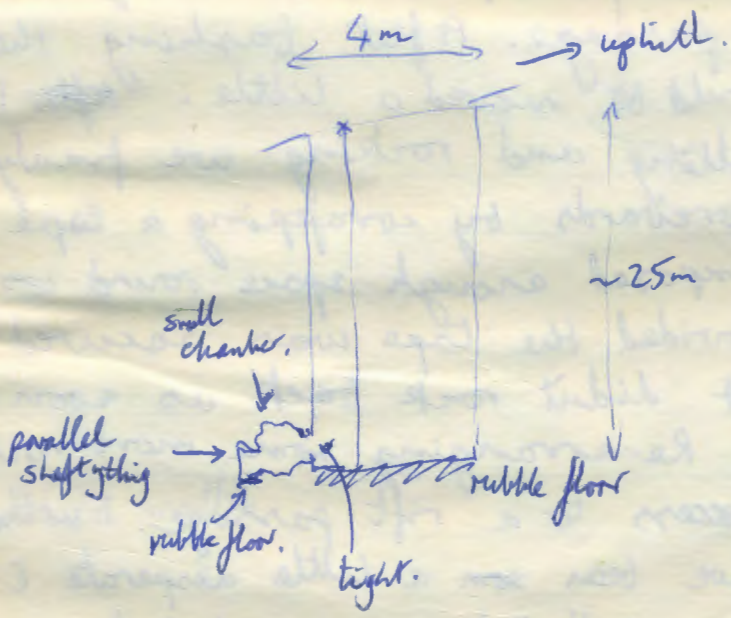
Desperate overhanging snow ledges you have to jump up and down to pass them.

DAN SELL as well Dan, Sam Khan, Phil, Mergol & Graham
 with Fridge came bottoming Team 717 thought
 they'd have a look at 23 + 247 but we
 the hill, we stuck as much as we could
 its 3 (ices) , where upon Phil + Mergol found up so
 we could the rest on them. The caves looked less
 deep in the better sunlight of mid afternoon. Phil rigged
 237 of the rocks and bottomed it at around 25m.
 Meanwhile the hollows were left-way through the first hill.
 when the first was at last ready Dan descended,
 to a snow ledge which had also seen rocks ~~the~~
 logged in the rife. The Pt 23 continued down and
 interesting and the up hill end of the rife which
 followed as the hollows.
 A better way on was spotted between two boulders,
 which I rigged when I got down (like what
 take off) and descended. The dropped also a long of
 shown at the about 10ft lower than Dan had got.
 The rife appeared to be checked by large boulders,
 though a way on could be seen though a well
 sized hole (downfall). Needs looking at as I saw one
 with better light than mine. Sun 12th Hal + Mergol looked
 through & decided that the way was impassable, examined
 every possible hole, nearly free climbed out, then gave up &
 de-rigged.



squeeze through which Denis' feet see see how done

23/7
grade 1
Pris



slot 4m x 2m at widest.

~25m

small chamber.

parallel shaft going

rubble floor.

rubble floor

tight.

2/7 Neil and Graham

12/7/87

(Just below the eyehole - the eyehole is completely bizarre!)

The entrance was crossed of as not going, but we thought we'd push it anyway. No snow at bottom of shaft (12m + 39m) - no ways on. 30ft up from bottom is small parallel stone filled shaft with a strongly drafting slot in side - a bit too small to fit through. We tried throwing stones at it to enlarge it but gave up after a bit (needs a lump hammer, but the rift the other side seemed a bit tight - the stones dropped down some distance however). Instead we dug through the stones just below for about an hour and made good progress - it started to draft as well - it's got to go!

32m pitch could be rigged with a bolt (I used a 8/8 deviation, but this causes some rubbing when on the lower part).

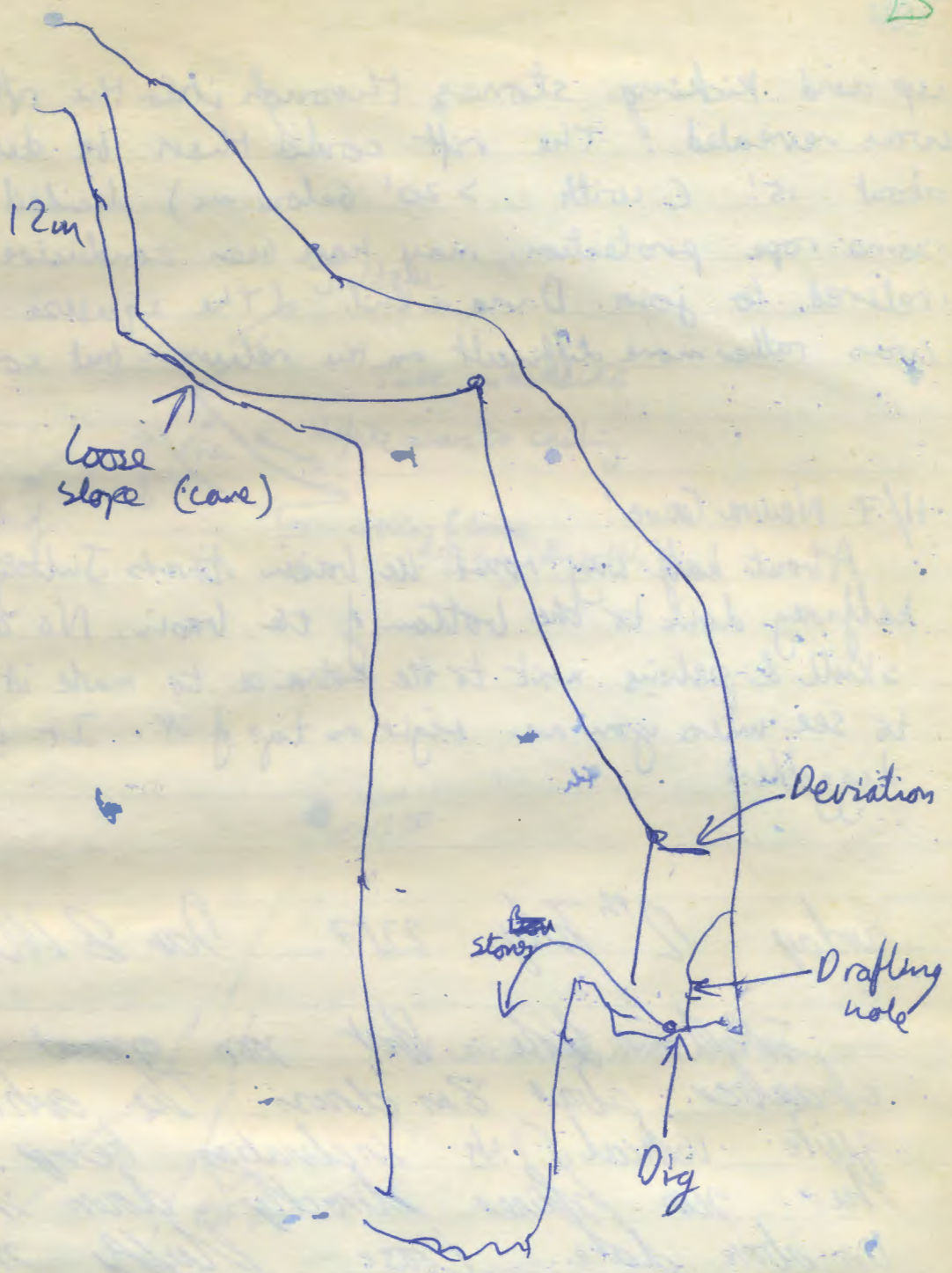
10/7 Neil & Graham

i Nuevo! cueva.

12/7/87

Near 4/7, entrance on going horizontally into the ridge. Way on was blocked after about 15' by a large boulder completely filling the passage. After bashing the choss away round the edges it could be moved a little. ~~After~~ Following prolonged twisting jostling and rocking we finally managed to rock it over forwards by wrapping a tape round and pulling. This exposed enough space round ~~on~~ one side to squeeze past, provided the tape was secured to another large rock so that it didn't rock back as soon as we passed it (sealing us inside!). Re-arranging some more rocks on the far side allowed access to a rift passage. Further exploration in shorts would have been some a little desperate (we were already pretty gashed). Donning full kit we pushed forward to a 50' free climb - ending with a few overhanging moves! Several ways on ~~holes~~, but a climb down to a rift which also closes down with boulders after ~20'. But! by climbing

2/7



lots of silica needles

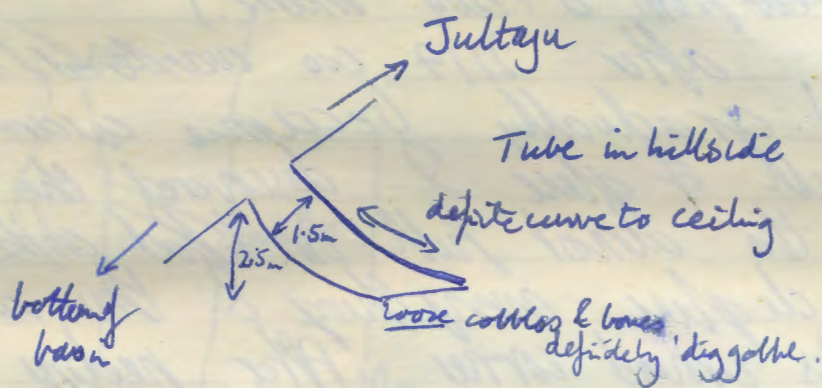
up and kicking stones through into the rift the way on was revealed. The rift could then be descended, after about 15' (with >20' below me) decided the use of some rope protection may have been conducive to longevity so retired to join Dana & Phil. (The squeeze up to the loose boulder was rather more difficult on the return - but could be enlarged)

11/7 Neura Cave!

About half way round the basin towards Jultayu from 2/7, about halfway down to the bottom of the basin. No draft. I put a sheep's skull & pelvis next to the entrance to mark it. It is very difficult to see unless you are right on top of it. It looks phreatic, and diggable.

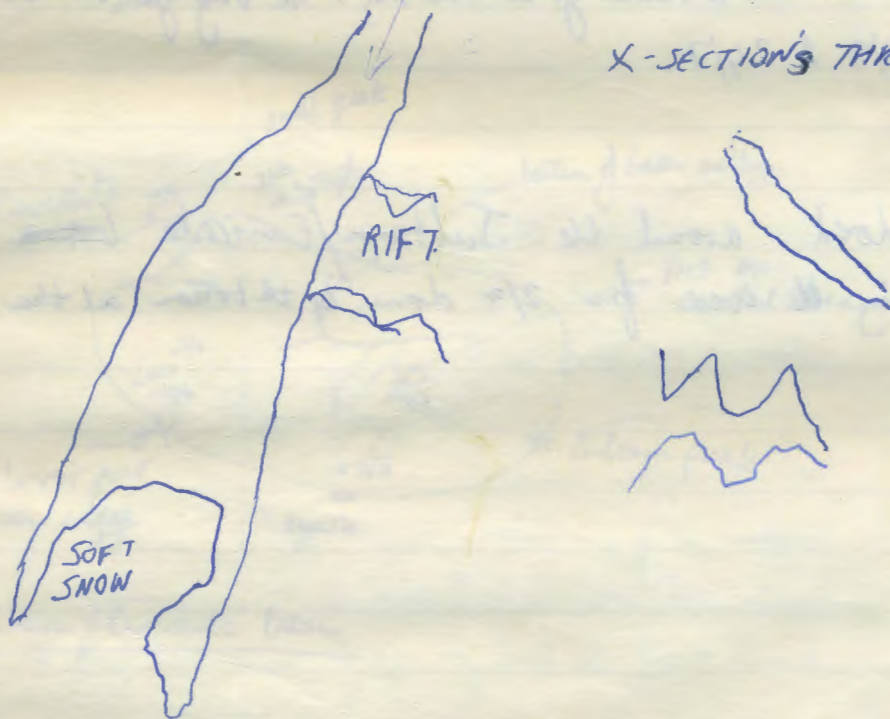
Sunday 12th July. 2217. Dan & Muriel.

Small hole that soon opened out into larger chamber about 8m down. The entrance is not quite vertical, its inclination being such that the sun shines directly down it at 13:30 on above date. Loose fluffy snow at bottom that I kept sinking into possible ways on under snow. Free climbable with line out. Then noticed horrible 45° rift that I crawled along 'til too tight. Very sharp spread ridges on roof & ceiling. Luckily it didn't go. Oh well, another cave to make off.



SUN
@ 13:30

X-SECTION'S THRU RIFT



12/7/87. (Whose idea was it to have caves in areas 7 & 8 so that when people write the date without the year (eg 12/7) it is impossible to distinguish it between a ~~cut~~ from a cave mark?)

Anyway after 22/7 we wandered on up the hill. I gradually became aware of a strong smell of glue & discovered the lid had come off the almost full bin I had with me. Set down to de-glove everything & then noticed small stuff in rocks around corner. After peeling off dried glue from the contents of my rucksack pocket we went over to investigate & found a very deep hole.

After calling Phil over, we eventually ridged down ~30 m to a rocky floor with a 2-second drop directly below. This cave is 9/7

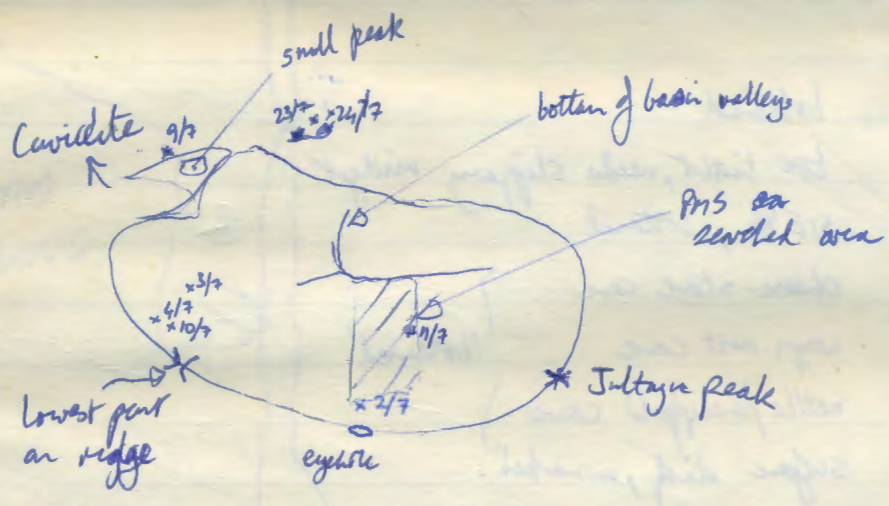
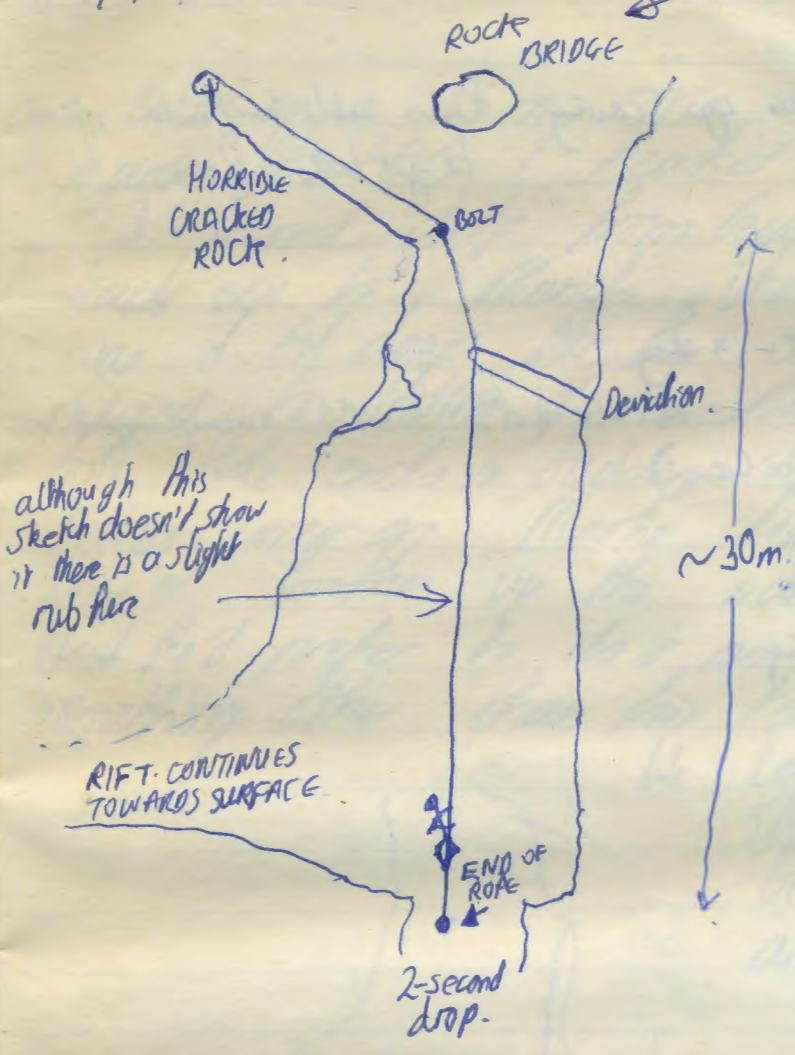
PMS brought bolting kit over from 2/7 (Neil & Graham were down) and the other bolting kit seemed to have gone missing. The bag for it was at the tackle dump near 23/7 & 24/7.

12 July 87

Phil wandered around the Tultayn/Cuvicerte ~~basin~~ basin, pretty thoroughly covering the area from 2/7 down to the bottom and then up to a 100m to the right.

9/7

Looks very nasty from underneath



Jultayn / Curicente Basin

MONDAY 13 July '87

Neil + Phil stay in camp. All others go caving. Phil's ankle bone/tendon refuses to get better. Rains.

Cave Status Area 7

- 2/7 Going as a dig
 4/7 still to be investigated - a dig
 6/7 ~~Not Found.~~ Found + Numbered. still snowplugged.
 7/7 Snowplugged (Fridge cave)
 (21/7 Not Found yet?)
 9/7 New going shaft
 10/7 New open rift - going.
 11/7 New near-surface dig
- 22/7 bottled (New)
 23/7 bottled (New)
 24/7 bottled (New)

Area 5

- 33/5 bottled
 32/5 too tight, needs slippery midget
 34/5 39/5 S/E '86, bottled
 1280 - cheese-store cave }
 - woops-woot cave } "bottled"
 40/5 - nettle/sheepfold cave }
 35/5 ~~37/5~~ surface dig, unmarked.
 shafts unlocated, between Valle Extrema & 39/5 (not promising)
 (34/5 Number reserved by Paul for cave he hasn't found yet.)

4/7 Mel & Margot

Went down this promising cave (ref. SGR) ready to dig our way through to the deepest cave in the Picos. Found a grotty hole "full of dead sheep & slime" (ref. R.G) & decided it wasn't digable !!

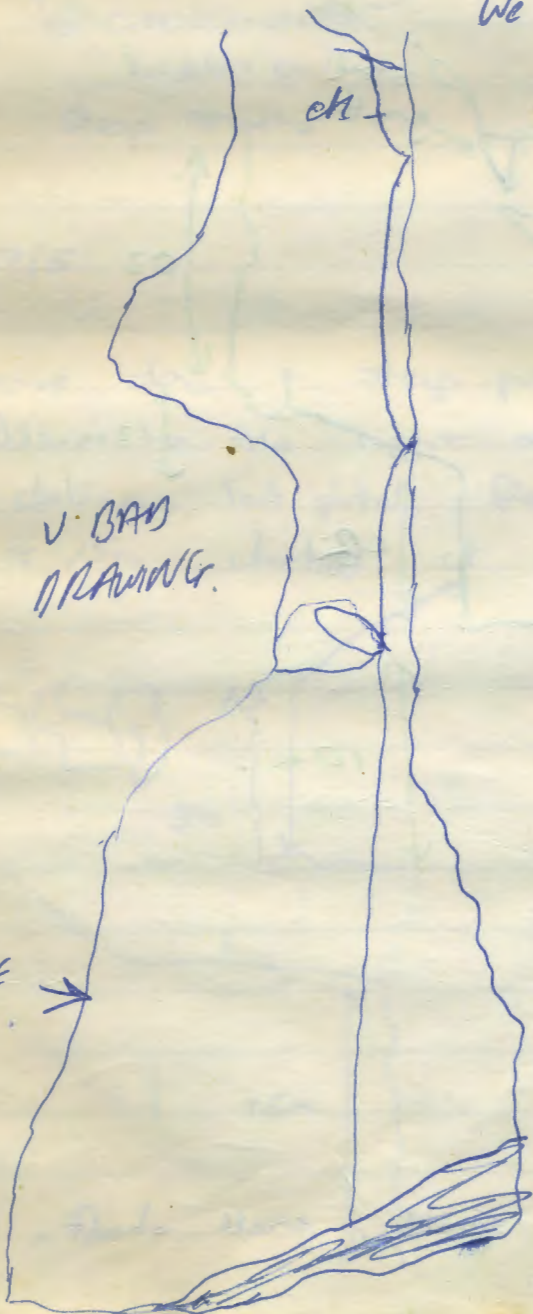
9/7 Dan, Muriel & Martin.

Picked up a 65m rope & Got down the
 mainshaft 'til I reached the end of the rope.
 ~3-4 second drop from beyond here. I rushed
 back up to Muriel who decided that the cave
 was a bit deep for her. Bing Martin appeared &
 rigged to bottom of mainshaft ~40m below 65m
 rope. The ends in bouldery chamber. V. impressive but no
 obvious way up. Martin climbed up in possible
 way on ~~in the~~ up the side of the shaft but decided
 that he'd prefer to do it on a braided rope with
 something other than his teeth to belay to.

We left the cave rigged.
 Should be surveyed & would
 be excellent practice for
 anyone wanting SRT training.
 Also climb on could go!

V. BAD
DRAWING.

POSSIBLE
WAY ON →

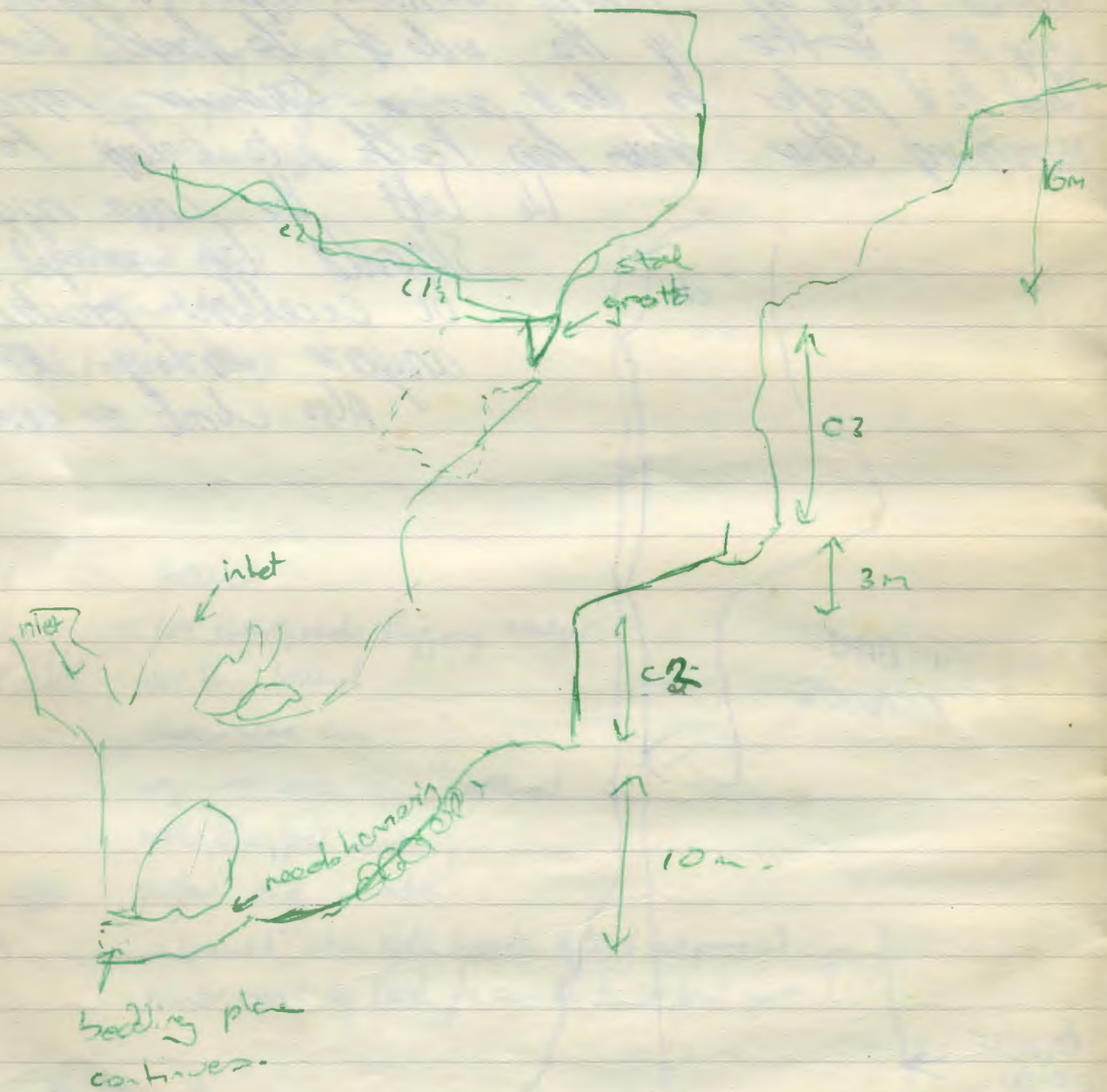


32

14/7/87

Dave H. J.C. & J.T

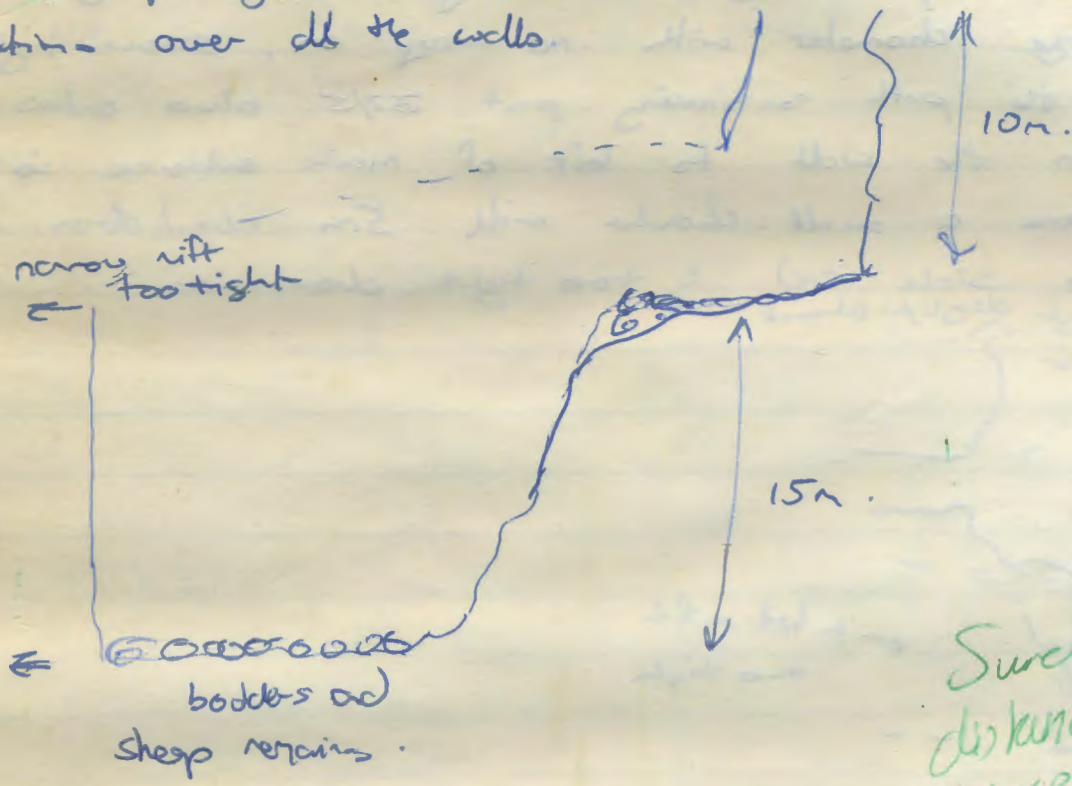
Found 5/5 explored down two short tree climbs and a 40 degree boulder slope to a chamber two obvious inlets with proffies and a rift in the floor too small and blocked with boulders. Removed the boulders, still a bit small, needs hammering. There is an obvious wall, too rough for a person beyond the squeeze that needs hammering.



36/5 - John Cooper's Cave.

- location above 5/5 to the south, small shaft rigged

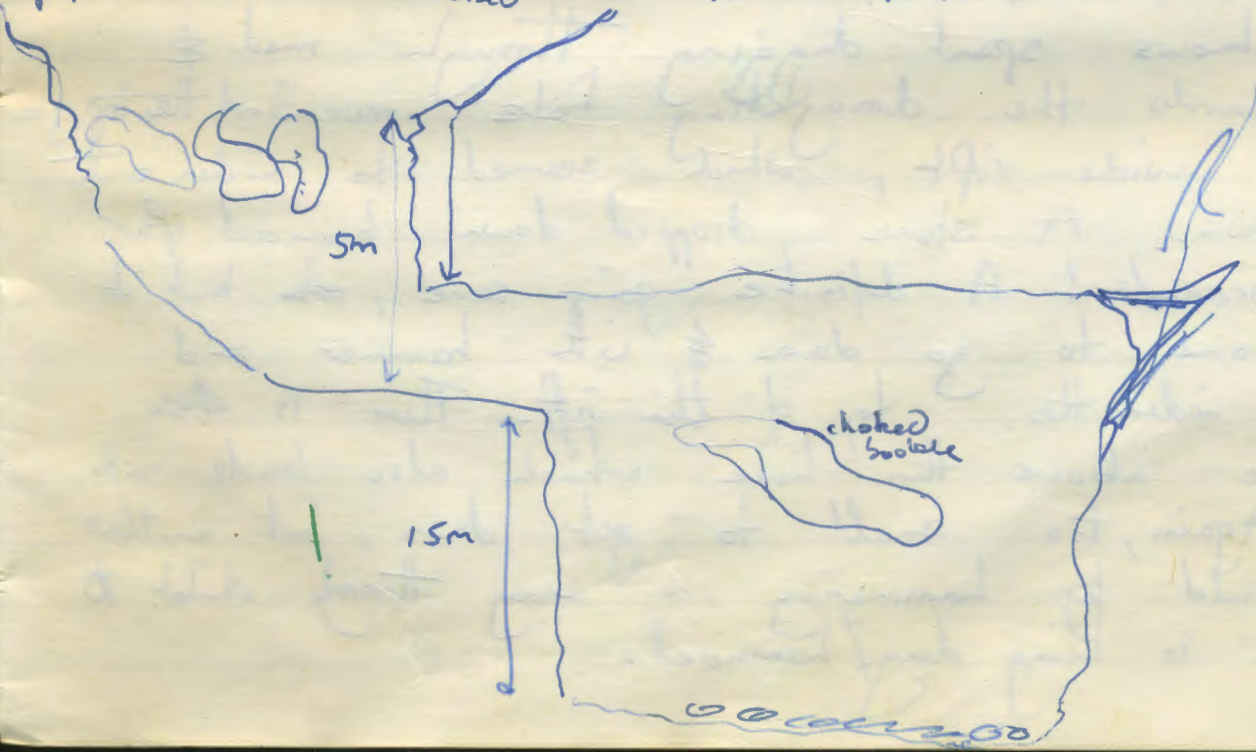
Non ~~vertical~~ network, drops 10m to the floor, followed by 15m at 60° passage chokes permanently after ~ 70m - lots of pretty ~~horizontal~~ over all the walls.



Surely these distances are overestimated !!

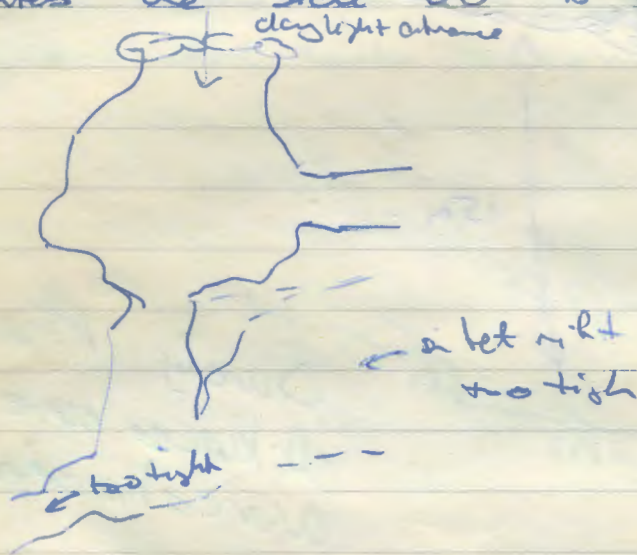
37/5.

Traverse down a steep path too east (to the gorge) in a doline to the right of the path at the bottom of the doline. 1st pitch free climbable ~ 4m, followed by pitch ~ 15m choked at the bottom.



25/5

Continue past 37/5 large entrance just over the ridge, marked SIE enters large chamber with no way on, second tight entrance near the path continuing past 37/5 also enters this chamber. In the wall to left of main entrance is small hole enters a small chamber with 5m climb down. In left after enters one side (red) is too tight climb down.



= numerous on rocks cover that cloaked with
on of the surface

2/7 Martin, Neil & Mel.

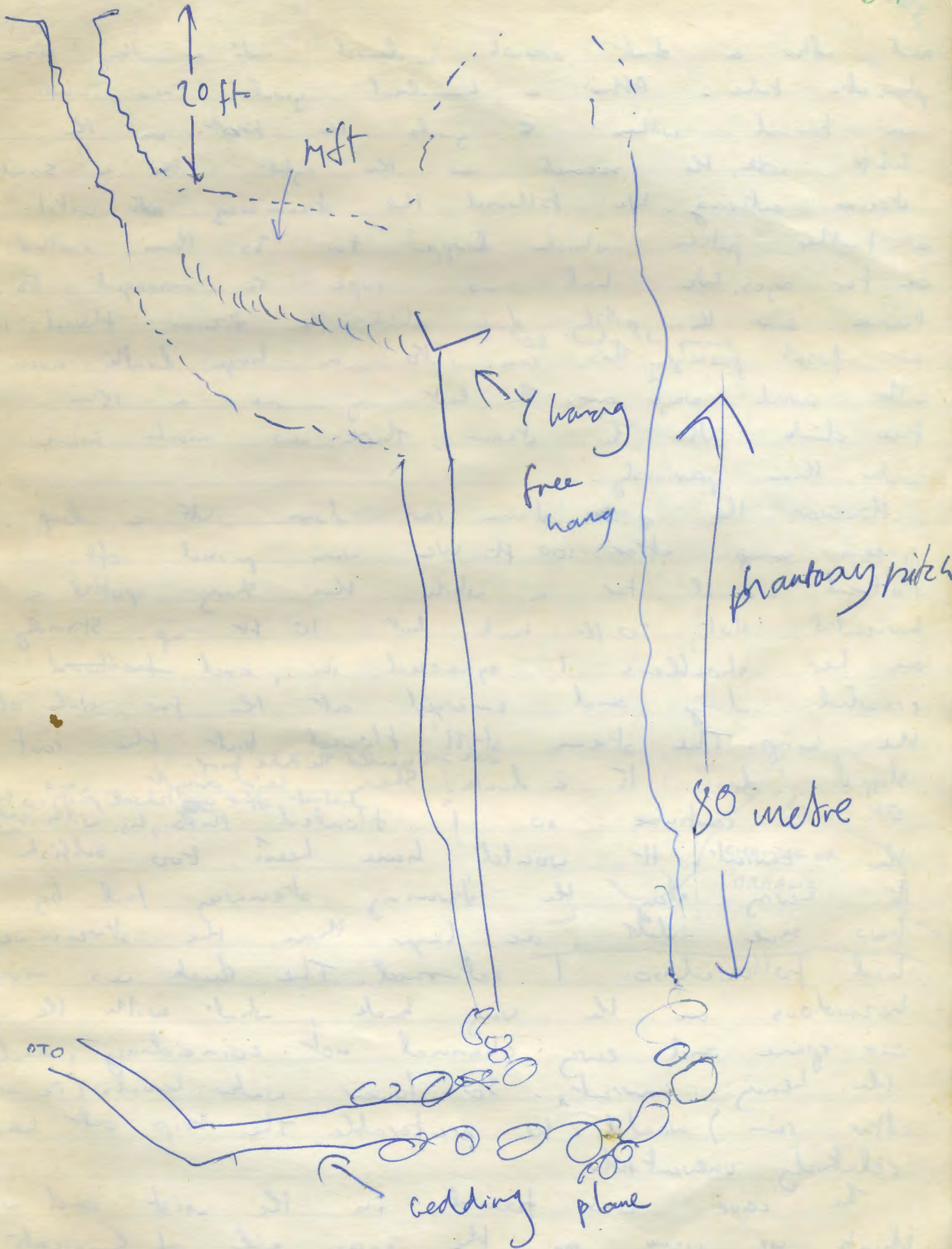
6ft & 5 hours spent digging through mud & rocks towards the daylight hole revealed the top of a four inch wide rift, which seemed to widen out further down. A stone dropped down bounced for 4-5 seconds! A definite going cave, but it needs someone to go down with hammer and chisel to widen the top of the rift. There is another hole above this hole which also leads into the rift. Again, too small to get down, but another party could try hammering a way through whilst the other hole is being dug/hammered.

1875

I have been thinking of you very much lately
 and wondering how you are getting on
 I hope you are well and happy
 I have not much news to write
 at present
 I am
 your affectionate friend
 [Signature]

While jumping from boulder to boulder on the side of limestone ^{with Shung} it by magic stairs ratted for a while then so I had a look down. There was a fine club in 20K. Luckily off into a rift along which I was possible to traverse around two corners to a opening of the rift and a pit. A FIVE SECOND DROP. climbed and when I stepped out Shung, the relevant 10/17 to catch out. the rope situation. Amongst the gear was a 40' and a 6m, so we decided to haul the rope for the pitch. Back in the cave two reds provided a yard. Two hangs, which allowed us to descend the booming pit. Although I managed to do several somersaults on the hard chert over Shung had no problems. The pitch landed in a large chert with no obvious way on, so we pondered our strategy over a patch of pebbles and two jump bars. We turned over some a few holders as it presented confusion will no success, then after a half hour digging around the bottom of the pit a massive hole amongst the rocks was produced. This led to a right leading place running back in the direction we had come from, and after 30m of that our crawling we emerged in a long pebbly tube, very while we had to tunnel but appeared to be leading upwards.

The trail continued with a few little squashes into a round chamber with 3 ways on, one above a 3m climb the other two part of in the same spot but soon split into a hole in the roof which I think is part of a bedding surface striking well above the limit of my light. The other led downwards



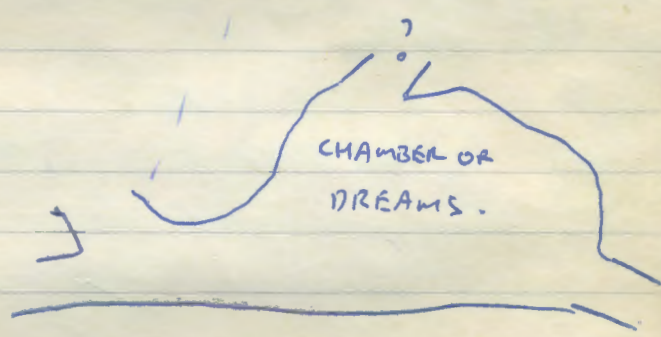
38

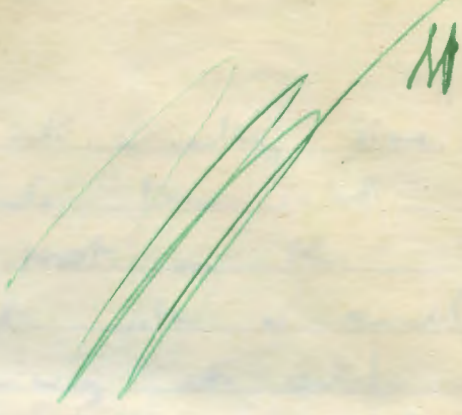
and after a short crawl widened into a walking size pneumatic tube. After a hundred yards two inlets we found within 5 yards the first on the left with the second on the right with a small stream entering. We followed the stream way ~~into~~ until a further patch which dropped for 3s then ratted on for ages. We had no rope so managed to traverse over the patch down which the stream flowed, into a fossil passage. This ^{runny at about 600} ran into a huge drafty aven with several ways on. The best way was a 15m free climb into the stream. There was much more water than previously.

However the ~~of the~~ stream ran down into a deep green sump after 100 ft. We were pissed off. Potted around for a while then Sherry spotted a horizontal slot 20 ft back, but 10 ft up. Standing on her shoulders I squeezed in, and followed crawled along and emerged at the far side of the sump. The stream still flowed but the rock sloped down to a duck. ^{which will be called The Fake Sump.} Sherry ^{said} ⁱⁿ ^{the} ^{past} ^{to} ^{be} ^{ok} ^{to} ^{continue} ^{so} ^I ^{float} ^{through} ^{with} ^{self} ^{air} the current. It would have been too selfish to carry along the streaming streamway fed by two more inlets, one larger than the stream we had followed, so I returned. The duck was more hazardous on the way back, what with the air space and easy channel not coinciding, and the heavy currents. So lower water levels (re not after rain) would be preferable. The trip out was relatively uneventful.

The cave was found in the mist and we think we were on the gorge side of Curvanti so it may be hard to find

Sarahane + Sherry





Paul "The nurse thought I was an athlete" Brennan
 Jonathan "I fancy Martin (May) more than Lynn" Cooper
 Jonathan "Martin is everything desirable I look for in a man" Cooper

Mel: "Of all the things you can do that you can catch AIDS from: I haven't done any of them"

[Faint, mostly illegible handwriting covering the bottom half of the page, possibly representing a list or notes.]

Trip into area 4 (iNuevo Area!) Mel and Graham
Short description in no 3 shaft-bashing kit.

Two caves in bottom (on RHS) of large depression on left hand side of culicentro path about 15 mins from pass above tents. We marked a stone on one of the calans with two orange dots (turn left here - depression ~ 50 yds away) Caves are marked 1/ and 2/ , first descends ~ 15' to slope to pitch head (~ 50'). Large chamber at bottom (~ 30' diameter). Deep vadose trench leads each way from pitch head. - definitely goes. Second cave down through tight-sharp squeeze ~ 10' to rift (constricted) to ~ 45 stone rubble. We headed south from here through several depressions with obvious cave development some entrances, some of these crossed off by the SIE. A going SIE cave (number 1) was situated near the edge of the gorge - prime location! - worth a look - it must be above the limits of Xiter. The area further over towards culicentro looks promising - worth looking at.

42

free climber

6m

3m

wire

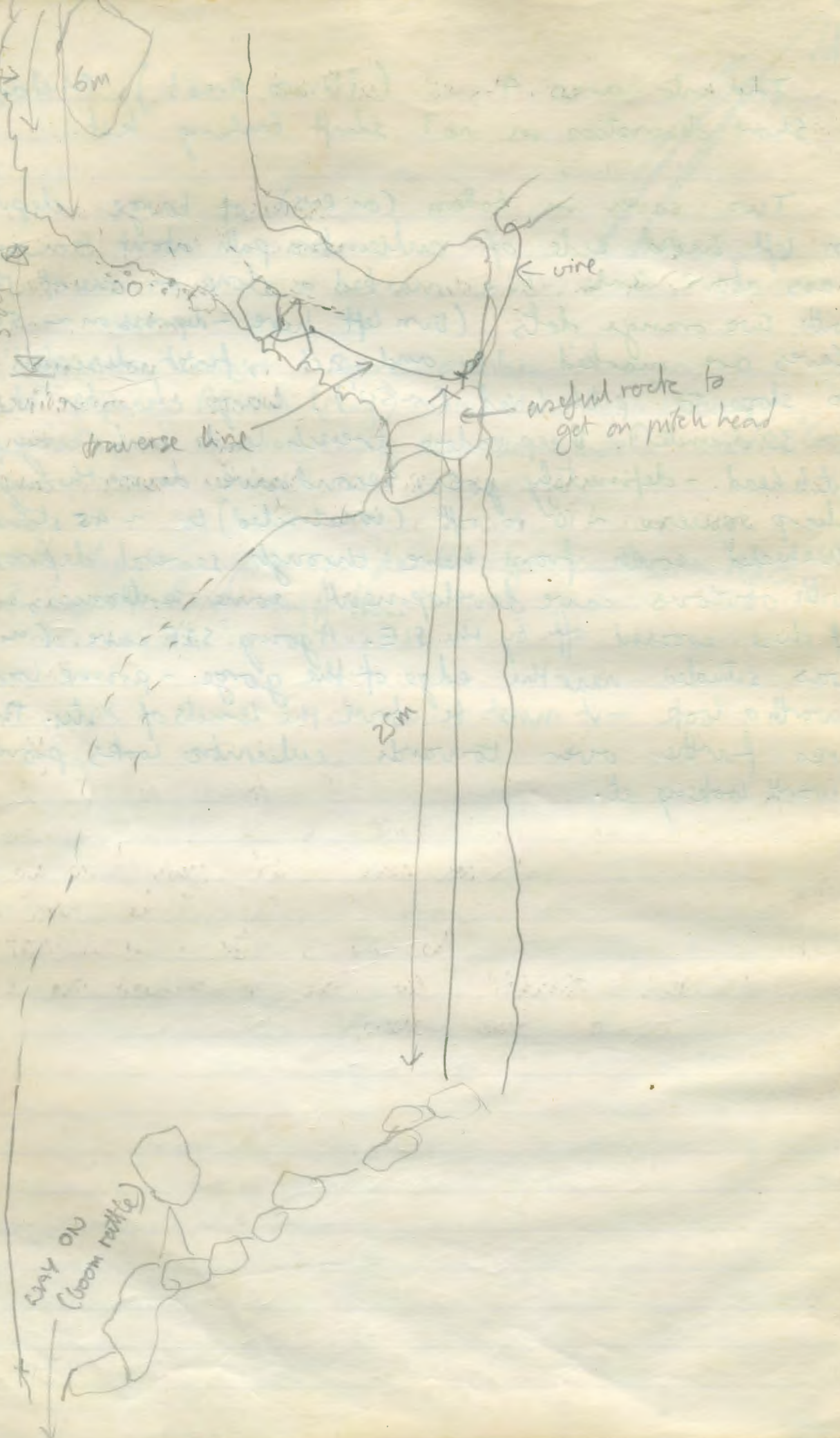
useful rock to get on pitch head

traverse line

25m

down

way on (boom rattle)



1/4 Sherry + Johnny (T)

Freeclimb down from upper slot down about 6m (easy hand/foot holds) onto soil/mud floor sloping down. Through hole (1m x 2m) onto downwards slope of mud & rocks leading to pitchhead. Put a bade up around wedged large rock at top of slope & use as hand line down to pitchhead (no, you dont have to freeclimb the pitch!) Wire looped around natural to form almost free hang (needed a slightly longer wire (7ft?) or rope protector round knot)

Abbed down 25m pitch onto sloping ~~low~~ fake floor of boulders & mud. Small holes near landing place dont go. Way on is in far corner at the bottom of the boulder slope. ~~But~~ There is a small hole leading into a rift, Boulders dropped down it rattle & then go \cong BOOM \cong after 5 secs (or a bit more?). We tried to rig a ladder & lifeline down the hole ~~so~~ & Johnny tried to go down it but it was a bit tight so we decided to leave it 'till we could enlarge the hole a bit with a hammer also we would need a LOT of rope (& bolts) shouldn't be hard to make the hole bigger - we shall return!

Wt
An attempt to Organise what has already happened.

- 2/7
4/7. Investigated - bottomed.
6/7 Found - Full of snow
7/7. Bottomed - may be worth looking at later
8/7 SEE SBK
9/7. Grong (sort of) p. 31
10/7 Bottomed - Too light.
11/7 Near surface dig
12/7 Rabbit hole - a dig if we're desperate.
13/7 Cueva del previsto. (Piss pot) (Unfound)

22/7 - 24/7 Bottomed

AREA 5

- 5/5 Dig with possibilities. (Planned)
11/5 To be found.
23/5 Horizontal cave. Bottomed.
26/5 Unmarked but has SE mark. Bottomed. (20m)
30/5 Near Trea Path. Red circle cave. No go
31/5 OPTIMISTO (marked 30/5!!!)
32/5 SBK
33/5 Paul's 50m shaft. p15
34/5 Reserved for future expansion (by Paul)
35/5 Surface dig - unmarked.
36/5. SC's cave. Bottomed. p. 33
37/5 Bottomed. p 33
38/5 " p 34
39/5 SIE SHAFT (previously 31/5 in this book) unmarked by oval
40/5 SHEEPFOLD CAVE - Valle Extremum
41/5 Plastic entrance, above valle by Henry

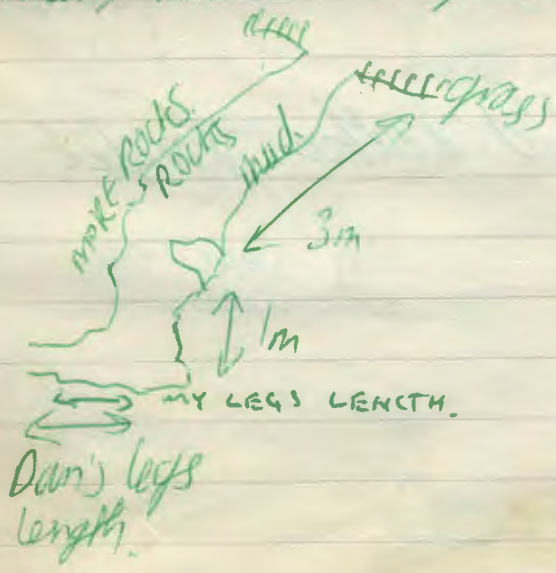
16th July 1987

Rained all day. ^{17:10} ML went off to look at area 4, PMS went off to look at a previously unvisited part of Area 5: Leave the Arico basin SE, 50 m or so up & to the left of the pastore's huts/ruins. You come out into a little valley ABOVE the Valle Extremera. This contains a large rock slide/rockfall on the left & eventually drops down into the Valle Extremera. High up on the left side is a surface shaft with snow in it (unexamined closely) and a lot of surface shafts nearby all choked, as you go down quite a way - needs chiselling out. On the left hand wall is an obvious phreatic ^{4/5} entrance, I went in this until ~~out~~ it got too dark to see - it looks as if it continues but may

16th July 1987. A foul, miserable day. Dan & Jonathan Cooper set off in the rain & mist to find the cave that will keep this expedition occupied.

We climbed up towards Zuluaga, guided by the dull red light that was Graham's dayglo cascade shining through the mist.

At Rabbit Hole, which is not labelled, Dan threw on an oversuit & scrambled down the muddy crawl to a short climb (1m) to a horizontal squeeze that he could just get his legs thro'. Jonathan had a quick look and saw two jetroped shaftbushers then decided to leave it for another, more desperate, day.



The duo then ascended to 1017, leaving Duns gear there so that he ~~could~~ ~~return~~ could scramble about the steep slopes with ease ~~they~~ scrambled along a high level route between Curicente and the base of La Verdelluenga. However the gods of the caves were guarding their secrets well for only two small refuge caves high in the side of Curicente. The first was large enough to stand in, very muddy & ended after 6-8m. The second was small, not so muddy & body lengthed.

The two, cold, wet, miserable, ~~stuck~~ knackered, mountaineers staggered on to the base of LV & then the elements finally beat out all enthusiasm. The hikers may have had for shaft bashing and they returned on a lower route.

Again, two small pots were found, the first being a 2m climb into an impenetrable boulder choke, the second being somewhat smaller and more bouldery.

And so, downcast, the walkers staggered back to Ario, in the mist, soaked to the skin, dejected and depressed.

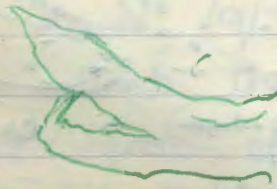
Oh well - A day I'd rather forget!

RESURGENCE I

67
BCRA GRADE -1



ELEVATION!

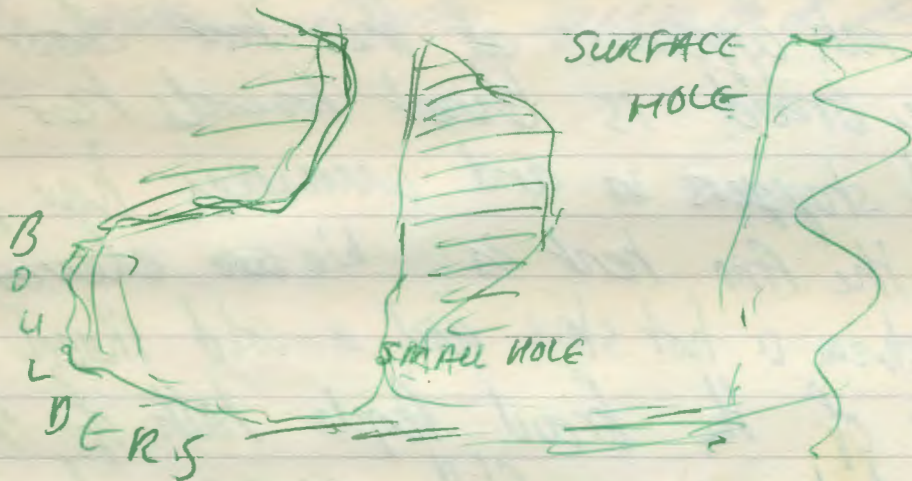


~~PLAN~~
PLAN

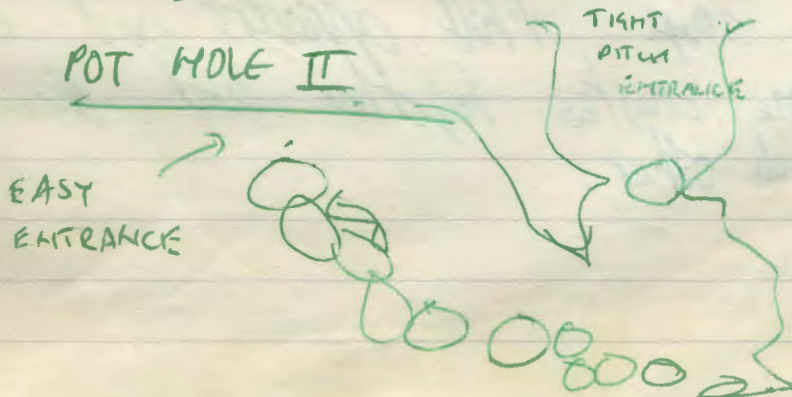
RESURGENCE CAVE II

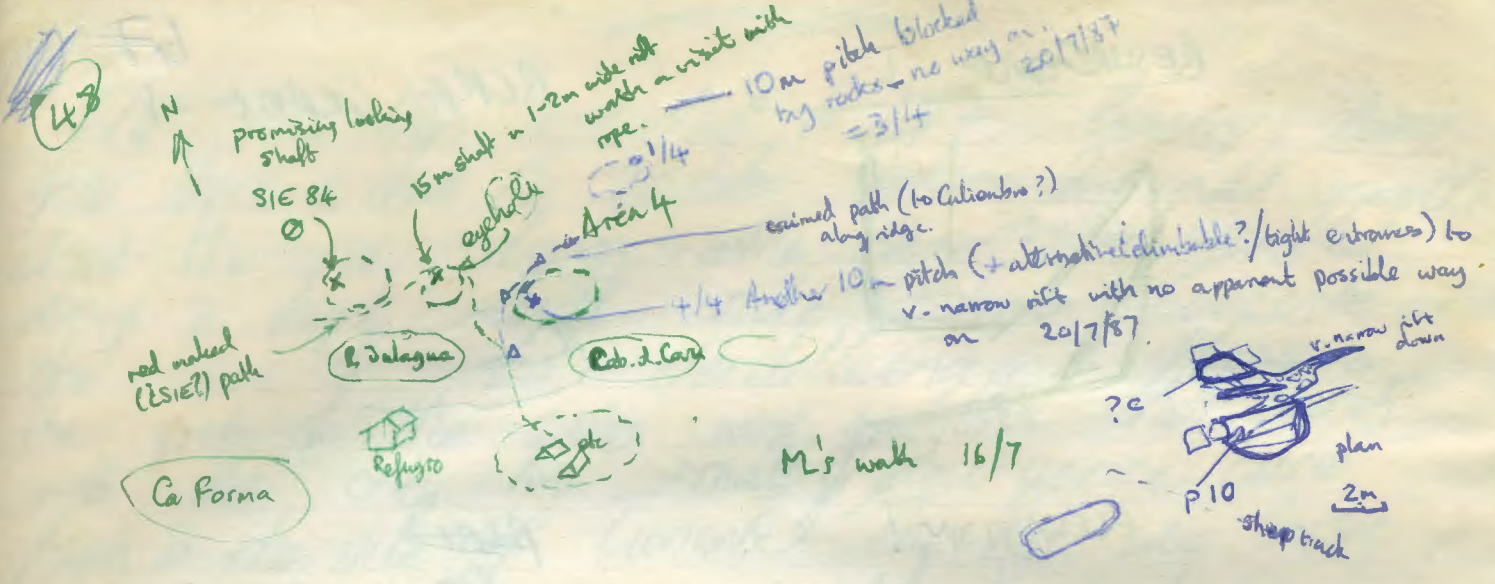


POT HOLE I



POT HOLE II





10:26 Friday 17th July

It has been raining solidly for two days. Dan, Jonny, Lynn, Martin, Jonathan, Dave, Graham, Martin, Martin & Sherry sit in the Ario tent. The rain beats solidly on the sides of the tent. Jonathan dons a wet suit and starts off on the long canoe back to a sodden base camp.

Murel, doing an excellent impression of a drowned rat, appears at the tent door. A soggy sponge, i.e. bread, is thrust towards her.

Paul staggers in and announces how positively roomy the Ario tent is. We are eleven. I am crushed between a hot stove and a cold Murel. We devour the last of the bread. People talk of oversuit stew and carbide soup. Phil appears and hovers in the doorway. Everyone cringes together and throws peanut butter at each other.

Thurs 16th July.

Martin, Graham & Lynn went down 9/7 with the hope of finding a way on via a climb that Martin had previously started. Unfortunately, despite heroic efforts to get past a boulder, the climb continued upwards past choss with no end in sight. A packet of peanuts was eaten and then devious tactics on the part of Graham & Lynn ensured that they were body lined past the boulder, but Martin then discovered he had to free climb it! Surveyed the cave (taking sum total of about 5 measurements!) & then on finally getting out of the cave it decided to rain.

Friday 17 July

Don, Martin M. & Martin L surveyed 2315 partly to get out of the rain & partly to see how long it was ~ 40m Oh well, it'll answer the BCKA if this is the longest cave so far. Smashed a rock into another hole, near me & the yoke. Martin squeezed down, didn't go.

July 12 1901

Martin's business & light were down. A.P. with the
 hope of finding a way on or a stand that Martin had
 previously started. Unfortunately, despite heroic efforts to get
 out a ladder, the club continued upwards past class with
 no end in sight. A packet of packets was eaten and
 then believe comes on the part of Graham & your service
 that they were badly tired. The ladder, but Martin
 then discovered he had to use club it! Jumped the
 one taking our lot of about 2 measurements! + 1000
 on finally getting out of the cave & decided to run

(The following text is extremely faint and largely illegible due to bleed-through from the reverse side of the page. It appears to be a detailed account of an expedition or a similar event, mentioning various activities and observations.)

SAT 18th July

Cold & overcast, sunny & windy in parts. Mostly Dry & Cold.

Team 2/7: Neil, Mel & Meriel

Team asleep rearing: Graham + Lynn (after overnight trip) also Sherry.

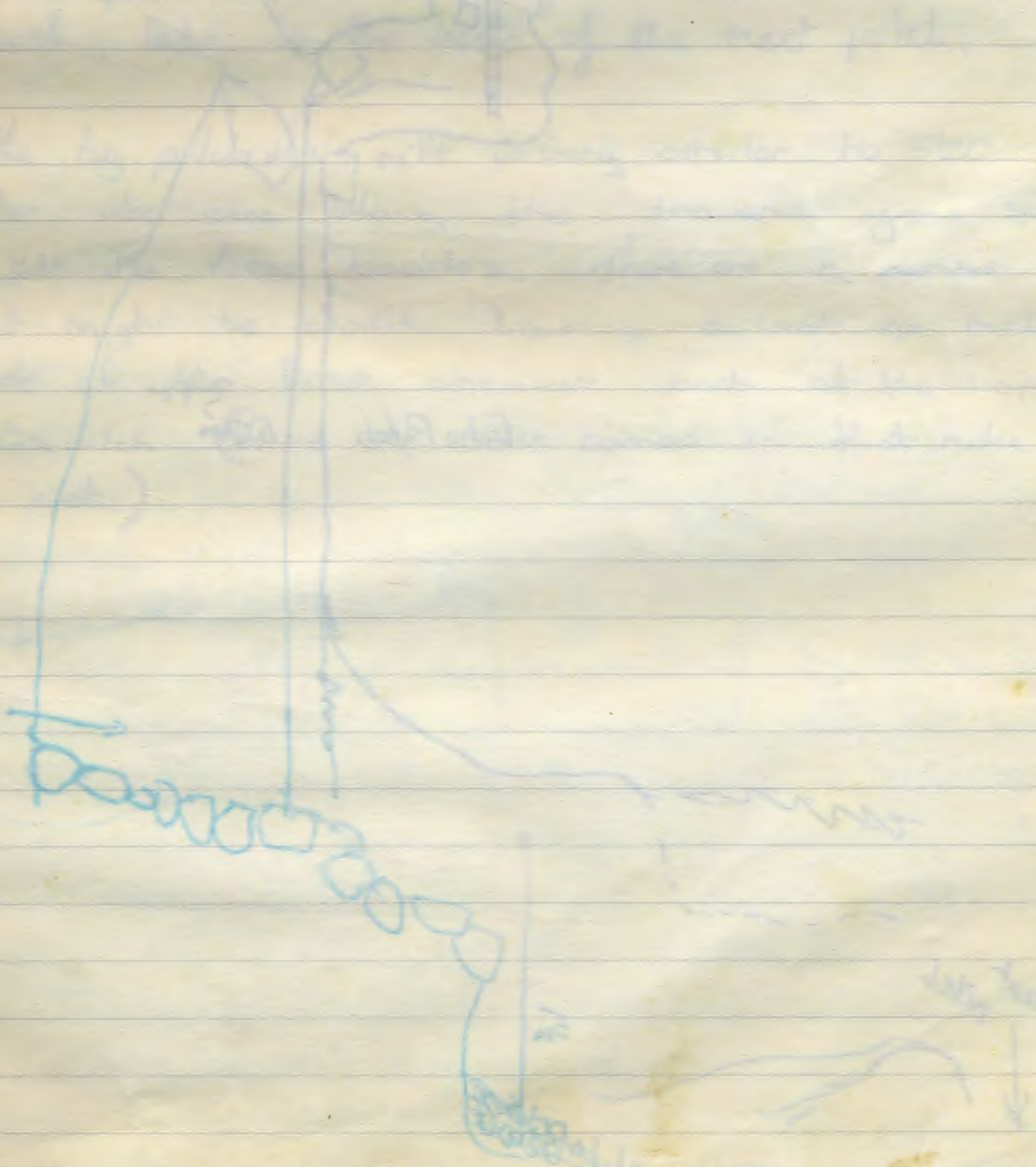
Team 1/4: Martin H., Dan & Philip

Team 1/4 photographic: Martin H., Martin L. & Paul

Team gone to lagoons: John Tambo

Team going to go to lagoons: Dave H.

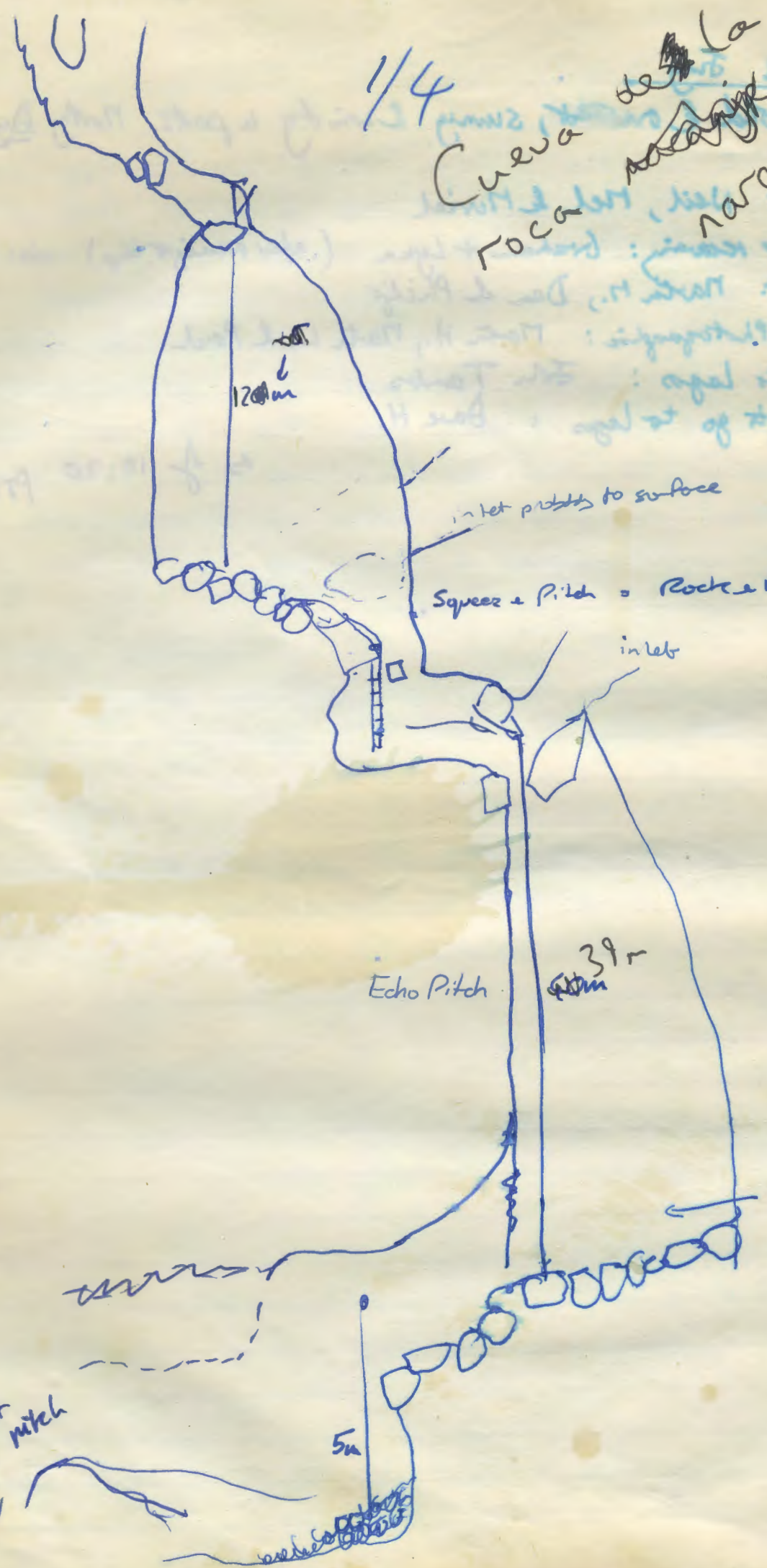
as of 10:20 PM



52 9

1/4

Cueva de La Roca Naranja



120m

inlet probably to surface

Squeez + Pitch = Rock & Roll

inlet

Echo Pitch

39m

Echo Beach

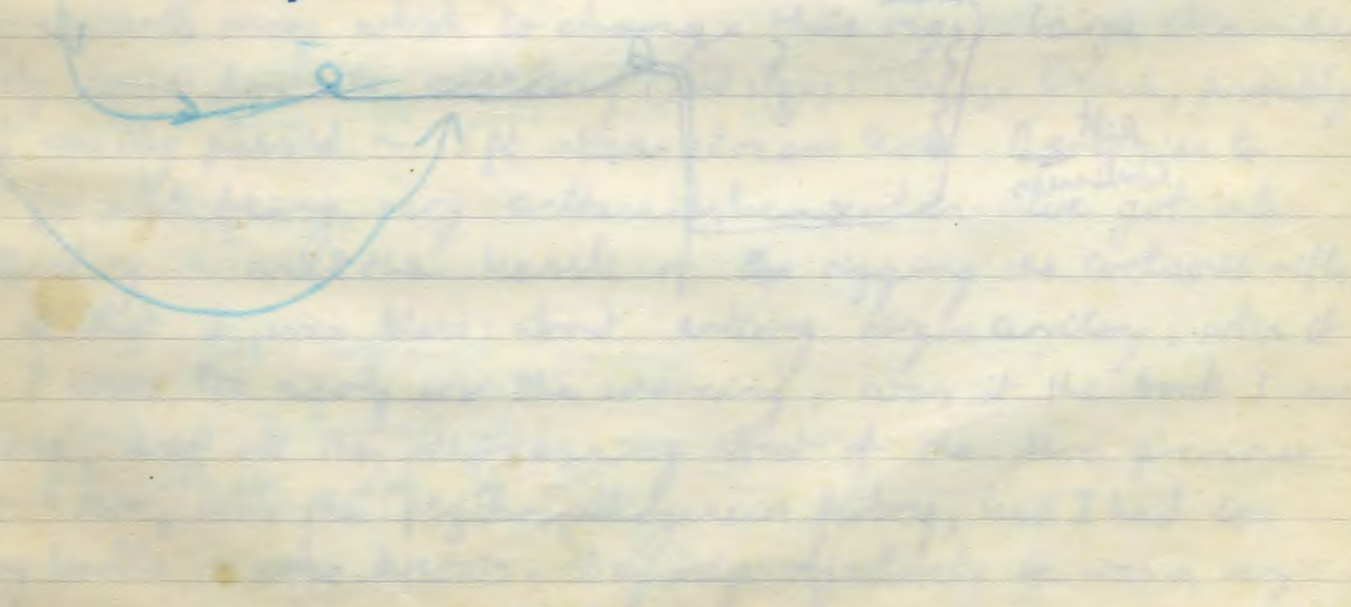
5m

next pitch

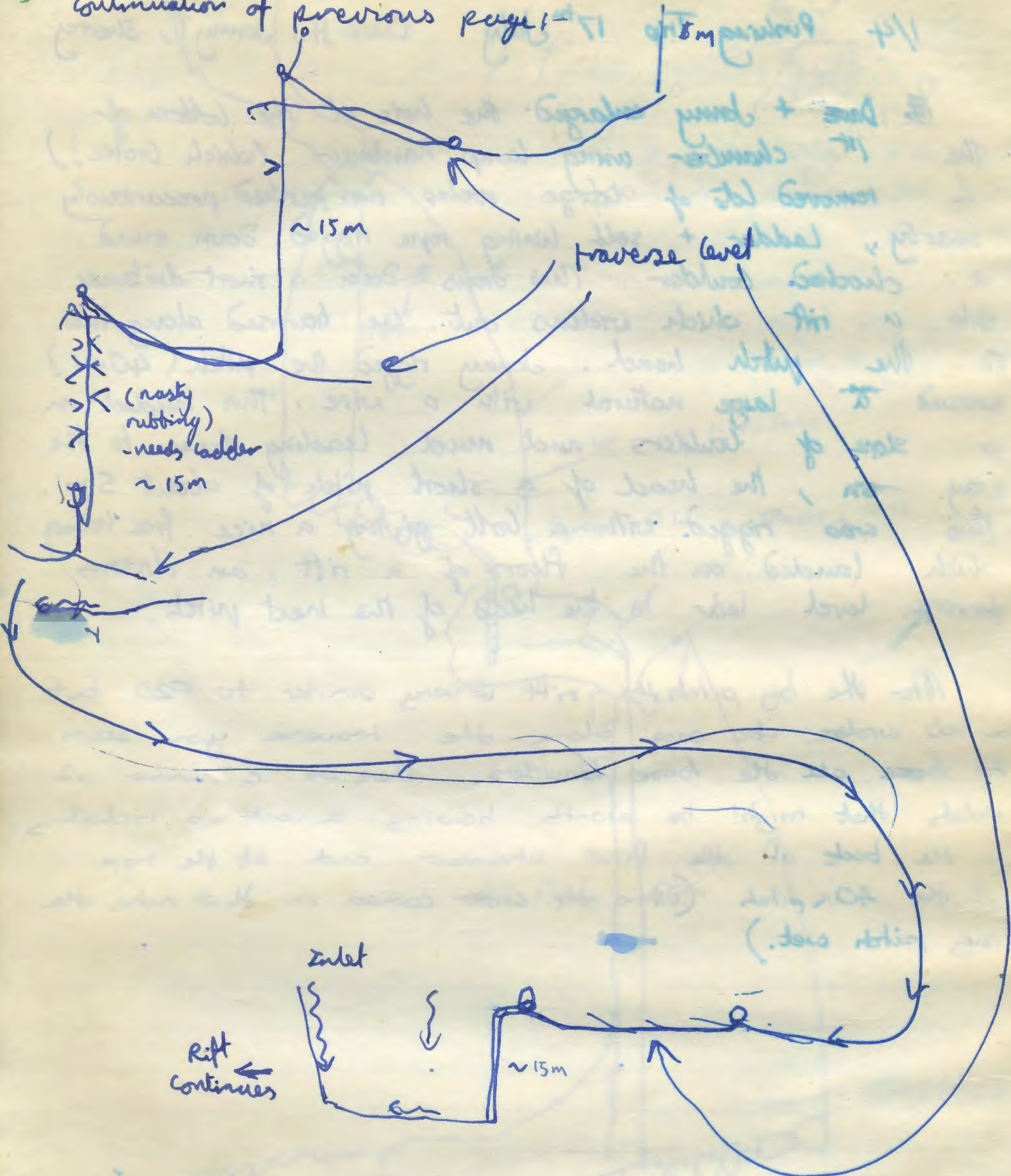
1/4 Pushing Trip 17th July Dave H, Jonny T, Sherry

Dave + Jonny enlarged the hole at the bottom of the 1st chamber using lump hammer (which broke!) & removed lots of large rocks now perched precariously nearby, Ladder + self lining rope rigged down round a chocked boulder. This drops down a short distance into a rift which widens out. We traversed along this to the pitch head. Jonny rigged the pitch (40m) around a large natural with a wire. This landed on a slope of boulders and mud leading down to the way on, the head of a short pitch of about 5m. This was rigged with a bolt giving a nice free hang which landed on the floor of a rift, an obvious traverse level led to the head of the next pitch.

After the big pitch the rift is very similar to F20 but a bit wider, also once along the traverse you seem to lose all the loose boulders. There are a number of inlets that might be worth having a look up including in the back of the first chamber and at the top of the 40m pitch (where the water comes in that makes the big pitch wet.)



continuation of previous page:-



1/4 Pushing Trip 17-18th July

Lynn & Graham.

55

Left camp ~ 9pm, ~~and~~ headed for entrance in thick mist - found the entrance with remarkably little trouble. Met the previous party at the entrance just coming out.

Our mission was to rig as many ropes as possible and take long enough over it that it was light again to find our way back from the entrance. We rigged 3 ropes and took ~ 11 hours. After charging a wire on the 40m pitch the rigging proceeded methodically at the sharp end thus:-

20m rope along ascending traverse (greasy foot holds at start). Belay 45m rope to two naturals (rock too bad to bolt) not a free-hang but rub points not too serious. At traverse level with contorted drop below, ran up to further two belays down best? part of rift. Constricted space and many rub points. - Placed rebelay ~ 8ft above next traverse level to

stop swinging about on lower part. A ladder on this lower section may be easier to climb and safer. Ran out rest of rope along traverse to a further pitch into large(ish) chamber with 2 inlets. Placed bolt, which spun round when tried to remove driver. Driver was removed by wiggling and shearing threads. Rigged off two naturals instead (unfortunately

the secondary had to be lower than primary - but not seriously so - pedants may wish to change this rig). Large chamber quickly closes down to meandering (and sharp) vadose trench, probably most easily passed ~ 15ft above stream level. Apologies to

Lynn for not being very enthusiastic when we got into new territory - was it the hassle of the rigging the tortuous rifts, was it that I was blasé about entering virgin territory, was it that it was too early in the morning, was it the book I was reading, was it the depressing effect of the two previous days rain, was the psychospelogenesis failing, had I had too many lentils - who knows. Anyway objectively it was a very

good trip and the way is set for a new era in the ongoing saga of Oute's exploration of the Spanish Picos ~~Bill's MIT!~~ - sorry I've been reading the book too much.

pl 2 481-51 not printed

Who said to whom... "Have you ever had a long slow ~~slow~~ screw against a wall"

and then replied "because I think I had one once and it was nice"

A Crisis of Conscience, - or example of pure logic.

I have not been caving,
i.e. in my own gear beyond sunlight since
bottoming 217 on Sunday - 6 days ago.
I have sat at base camp for a day and
just come up.

We have 2 going caves.

∴ I should don my gear and do an overnight
pushing trip down 114 or hammering in 217.

However - It is raining + I am cold.

My gear is warm + dry in 1017
It is 9.30 ∴ It will be dark when

I reach either 217 or 114 definitely.

My gear will end up wet + consecrated
if I go caving so I will be less keen on
getting in it in the future.
+ I will catch a cold and have raw my
hands raw so be less able to cave later.

+ No One else fancies an overnight trip.

∴ I will not go caving
∴ I will go to Cangas tomorrow for a meal

But I shall return ^{sitting} invigorated + full of
vigour (same thing?) and with a big plastic bag
to keep my gear consecrated.

S.C.

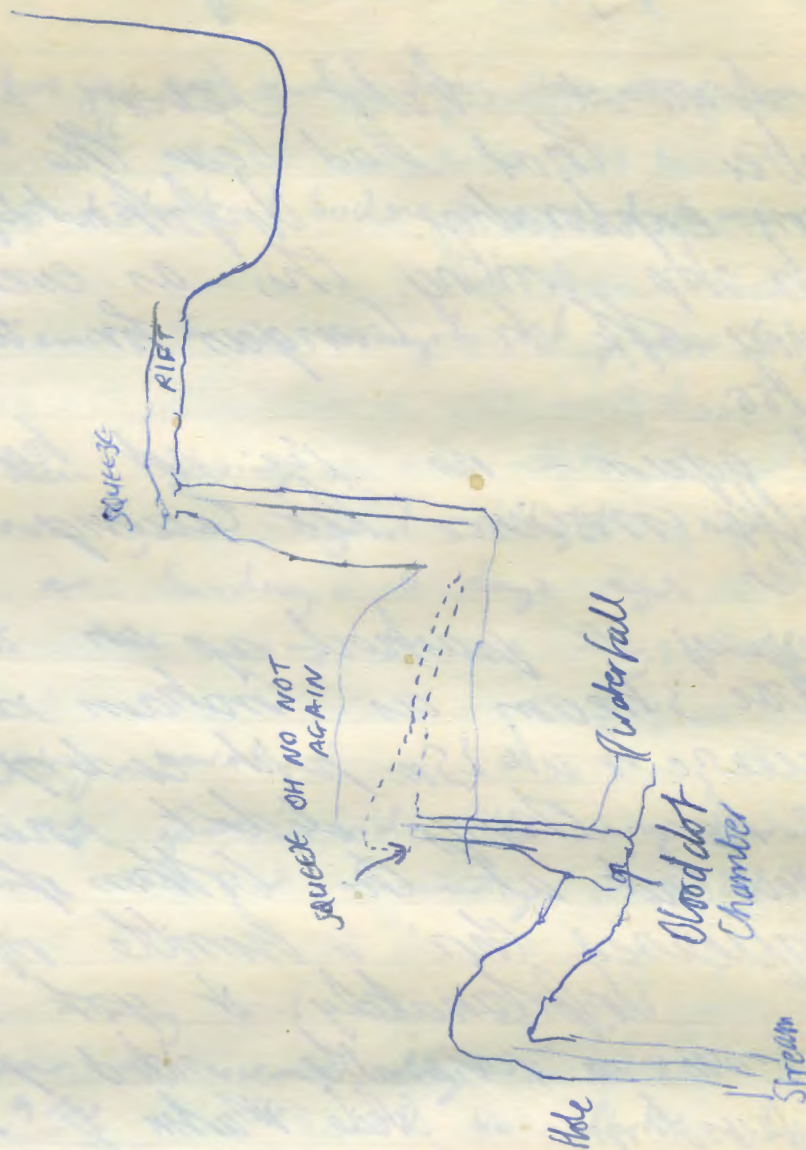
1/4 1988 July 1987 Looking Mt. Dan, Martin M. Phil S.

Went down at half eleven & soon reached the chamber that had been the limit of Graham & Lynn's exploration. Unfortunately I'm going to have to stop writing this as everyone is buggering off to Cangas for lunch & I'd like to go too.

Back again - as I've not been to lunch, just a guilty conscience for leaving an account unwritten.

Anyway we pushed up an awkward rift 15' above stream as Graham said. Then a squeeze to a 25m pitch ending on a rocky floor. Now here things didn't sound too hopeful. I arrived last at the bottom of the pitch and squeezed thru a terrible rift - "Oh no not again." Unfortunately it got steadily worse until it was a reasonable sized passage that you could stand in. While Martin & Phil hammered at the next pitch, I went back thru the rift (easy) & attempted to bring a tackle bag thru (Hard!) Unfortunately got totally jammed, lost a welly, and had to go back out, grind about in the bottom to retrieve the welly, go back & get the tackle bag, out empty half its contents and then back thru the rift. Nasty squeeze to head of next pitch, 'Pebble Pitch' which lands in large rift covered in bloodst formation. Phil unfortunately got very hot & stuck. "Oh No not again" and rebred early. We then rigged the next pitch. A sharp hole in the rift. No obvious way or at top or bottom

1/4



59
but very pretty.

Went out reasonably quickly apart from the fact that I had managed to bugger two batteries and get a hole in my Tubo de Plastik.

Pitches were wetter on the way out. An excellent pushing trip, we were never sure if we wanted the cave to go on past each squeeze or not. Good luck to the next pushers!

19/7/87

Everyone is going for a fix up in Congo and Neil, Neil and Jonathan have went down to 1/4 so I set out to retrieve my funny from ~~10/7~~ and fetch some carbide from top camp. Took a very zig-zaggy path from 10/7 looking for area E, stopped at 2/9' (La Jigoda) and climbed in over snow, way on my just to be possible but way down under the snow was sheer ice and unable to see climb, sound of running water only heard.

Found exact location of area E and several cones fitting descriptions of E1, E2 but all unmarked, those I could see climb were blocked by snow, others show some promise worth a look anyway (with gloves/oversuit 's the snow freezes your extremities) or to top camp found a few unmarked shafts all boulder choked.

F38 is now completely dry, but is a manflake tin was put under every drip it could probably produce water faster than at drio. took one of the bld's of carbide and

Some of the monoflokes and returned in the mist
getting slightly lost and ending up at the bottom
of sod + . Jon.

10

Sat 18th July. Muriel, Neil, Mel & Margot
Hammering trip in 2/7.

We hammered & hammered & hammered & drilled & drilled at the eyehole above the dig which we dug & dug & dug the other day. The dig had filled ^{being} with mud after the rain & we abandoned this ^{being} less hopeful than the eyehole. It is now possible to get into the rift (which gives a 7 sec drop), but the hole should be made just that little bit wider (to be comfy). We left all the digging gear here, but the crowbar may or may not be useful. There's a very strong wind coming up through the hole which is intermittently strong & weak - it must open up into the side of the gorge!! At least that bit won't be tight!!

1/4 'Pushing' trip. 19/7/87 Neil, J.C. & Mel

After hearing the wonderful description of 1/4 given by Dan, Martin & Phil from the previous day, we were full of enthusiasm to push 1/4 all the way down to Culimbro!! However, we did wait until 2.00pm to set out, so that it would be light when we finally left the cave & ∴ not get lost on the way back to camp.

The trip into 1/4 was fairly efficient. The only hold-up was an hour spent trying to find the way through the 2nd rift. We eventually found the way through, but ~~but~~ by this time I was knackered & after 1/2 hr trying to get through the crux I gave up!! We ate a bit of cave-food (peanuts, Yorkie bars, jump bars, peaches, & primula). We came out of the cave fairly steadily, leaving behind some food, 30m rope & rigging gear at the top of petunia shaft & more ropes & two ladders before the rift. When we got out it was still light!! Obviously only about 9.00pm

Conrad (62) Great! hooks like we'll be back before bedtime!!

Pity it was so misty though. Visibility was approx 15 ft. We followed the ridge up to the top of the depression where we found the path. Unfortunately, we then lost the path & found ourselves on the top of another ridge. Was this the ridge around the Airo bowl? Better to be safe than sorry - so we followed the compass due west, down a nice grassy slope. At the bottom of the slope there were some limestone rocks - was this the toilet? We carried on west, but nothing looked familiar. We continued west, surely we must hit something soon!! Well, lets go North instead - that should bring us out onto a path! So we followed the compass North - down nice (steepish) grassy slopes which looked like sheer drops the following morning when we could see them!! Then we heard water running. Didn't Dan say that you can hear the Airo water running at night? It turned out to be a stream, but on the way to it we found a nice little cave which had been built up by shepherds (presumably for sheep!). Ideal for bivvying inside. We got the carbides going & settled down on the nice rocky floor. Neil & I shared the bivvy bag, while J.C. settled into his rucksack. I had stones in my back, my legs & my antles. My feet were wet to sleep (as did Neil's) & we were all freezing!

However, it was a really good night's ⁶³ sleep & I think everyone should try it!!! (bit of exaggeration!!)

Fortunately, when we woke up, the mist had cleared & it was sunny. Racing up to the top of the cliff we'd climbed down the previous night, we could see the Central Massif & work out where Aro was. Unfortunately, it clagged in again almost immediately & we eventually found ourselves at the bottom of SOD 4 - retired! It only took 12 hrs to get from 1/4 to camp.

Recipe of the Week - Miss M's Bootsocks.

How to turn a pair of ^{soft woolly} socks into a handy pair of walking boots in 3 easy stages:-

- ① Spill half a can of bootsock over the socks.
- ② Ensure they are soaking wet and go carrying in 1/4 in them for 12 hours or so. Do not let them dry out at any stage.

- ③ Bake in direct sunlight for 2 days.

Your soft woolly socks will now be a solid and quite suitable for ~~mountain~~ walking over all terrain. They will, of course, not fit the original owner.

Dan. (who has tried & tested this recipe.)

64 Book of Jidda. Chapter 9.

The two lonely figures stood in the desolate white wasteland. All around the huge snow peaks of the Piccosian Alps soared up into the misty sky. These two men had embarked on the most dangerous task imaginable, they were to ascend the highest and so far unconquered of the range Ben McJullayan, in search of the greatest wizard on the planet Cliveon Westclarked. They purposed to ask him many questions concerning many of life's mysteries, in particular the nature of the vast abyss of McGill Crapper far away in the lowlands. Every night the vast hordes of the North Pentub emerged ^{from the hole} to ravage the surrounding countryside. Thousands of lowlanders had died or been captured and there was a real ~~for~~ fear that the lowlanders would be wiped in a few short months.

The two men plodded slowly up the glacier towards the towering bulk of Ben McJullayan. In the lead ~~of~~ was the charismatic Sahib Hicks. His chiselled features stood out in this bleak landscape. The bastard son of the Noble Lord Roterbon Evest he had a lot to prove and this was the surest way of lifting this great blight on his life and prospects. Toiling slowly behind was the ^{most famous} ~~greatest~~ guide in the Piccosian Alps. Sherpa Tenzing Norgay Brennar. This old man of the Alps was a sprightly

forty years old but he still managed to keep up with the much younger Sahib. The well known guide commanded the highest prices known in the Alps. A bowl of rice a day and a furry jacket of Uttamtion design on completion of the quest. Sahib Hicks could afford the bowls of rice but the jacket was way above the poor young man's means. He would hope to acquire one quickly when the Noble Lord rewarded him for removing the menace of the North Pole Cub from the lowlands. If the reward ^{was} slow in coming then he would be summoned before the Sherpa's Guild and then executed for non-payment of a Guild member's wages. It was a dangerous gamble that the young Sahib was taking but it was one he was prepared to take for the possible rewards were enormous ^{wherever} ~~best~~ failure would bring only a miserable death.

The Sahib's mind was on fire, the cold bitter winds tore through the many layers of clothing and chilled the consciousness of his sharp mind. It was the twelfth day of the trek. More than half their rations had gone but there was no point in turning back. They made camp on the lowest slopes of Ben MaTultau. It was the forbidden mountain. Access to the mountain is denied in one of the ancient laws of ^{the} ~~the~~ ^{kingdom.} ~~the~~, otherwise known as the laws of physics. These great laws were made by the first

66 sherpa prophet Scotty McScrotum who utter the immortal words "Ye canna change the laws of physics, boys" at the first meeting of the sherpa council, three hundred years ~~ago~~ ago. Sherpa Tenzing had lapsed from the faith many years previously as the missionaries did not readily ascend into the highlands, and so the trek up the mountains held no special terrors for him.

The following morning dawned crisp clear and cold. Their target was the gaping mouth of the huge cave of Uxed-pest in which the great wizard lived. For six hours they crawled up the terrifyingly steep snow slopes liable to avalanche at the slightest provocation, till they stood in awe at the entrance to the large cave. Their sweat crackled and fell to the floor, frozen in a split second. A cool wind beckoned ^{them} on into the mountain and into the realm of Cliveon Westlarkud. The brightly lit halls were a scene of devastation. Fittings torn from the walls and burnt out areas greeted the eye as they traversed from room to room. After 20 or so rooms they finally entered the largest chamber so far. It was eerily silent. Behind a desk in one corner a man appeared to be sleeping slumped forward onto the desk. Sahib Hicks motioned the sherpa to stay at the entrance to the chamber. The Sahib moved slowly towards the sleeping figure. As he approached

he became aware of a cruel smell in the air. It was the stench of decomposition and he knew the wizard was dead. He lifted the head of the ~~dead~~ mage to see the face of a tortured man. Across the forehead was branded "C.O. WOZ" 'ERE".

Oh damn said the sahib. The sherpa rushed forward to aid his master but all he could do was to stare at the mutilated face of Cliveon. "That bastard Kis Daniwicz beat me to it" ~~Lowson~~ cried Sahib Hicks. The leader of the North Pen cub had beaten him to the only possible salvation for the lowlanders. "Oh shit oh shit, oh shit, oh shit" A mad rage affected the sahib's mind, life was not worth living anymore, he could not pay the sherpa and death would result if he returned to the highlands. He dashed through the chambers and ~~threw~~ threw himself from the cave to his death. The sherpa walked slowly back to the cave entrance and there he saw the bloodied body of sahib Hicks ^{505 below}. His mind was filled with many ~~thoughts~~ ^{images} but the overwhelming thought was "what a stupid prat".

Tuesday 21st July.

Martin M, Martin L, Mel R.

This was the trip to end all the exaggeration of pitch lengths down 1/4. A team (the above) of some officials set out to survey the cave to the ^{nth} decimal place.

Okay let's get to the point, MEL DROPPED THE TAPE DOWN THE RIFT !! but we got it back. Let me state in my defence that it was attached to me. This was actually a very fortunate incident since we discovered that you can quite easily crawl between along the bottom of the first rift. Probably much easier than thumping through the rift & then going down the pitch. You can also discover a number of other hazardous routes through the rift at the same time whilst Mel is shouting encouragement like "I can't help you because my bum is too big to fit through that squeeze etc etc. Meanwhile in a comfortable spot somewhere in the middle of the rift there were not many notes taken, so the veracity of the above must be judged in the light of the characters of the aforesaid characters.

Some time later.... Martin beat me to the top of one of the pitches & I started pushing before he ever appeared!!! Very unspooking.

21st July

Camp Grounds, clearing up & washing up by Dave & I washing by Dave & I & Steve as always & one, need lots of baskets and tinned in the sun yes

the sun

Not (the) sun. Oh No! We will fry.

Wednesday 22nd July

Out of 2/7 to find 1/4 bottled & about to be deneged. Oh dear - I am sorry, well fairly sorry.

never so sorry here again.

Finished off a rubber tree, much to my surprise & then discover that the "mushrooms" are simply burnt pepper.

Tuesday 21st July. 2/7 Pushing Trip. Lynn, Jonathan, Dan.

After a slightly later than expected start (11:30pm) we zoomed down to the hammer with only a slight pause while Jonathan rigged for ~~some~~ suicide rigged rack 3m below the top of the pitchhead.

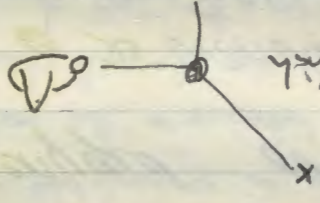
Dashed about a bit at the eye-hole and then I (Dan) tried to get thro' & became psychologically fat halfway thro'. Jonathan was feeling thinner & squeezed thro' with no problems.

We rigged a 50m pitch off a lump of rock & then I rigged altho' probably off equally unstable rgs.

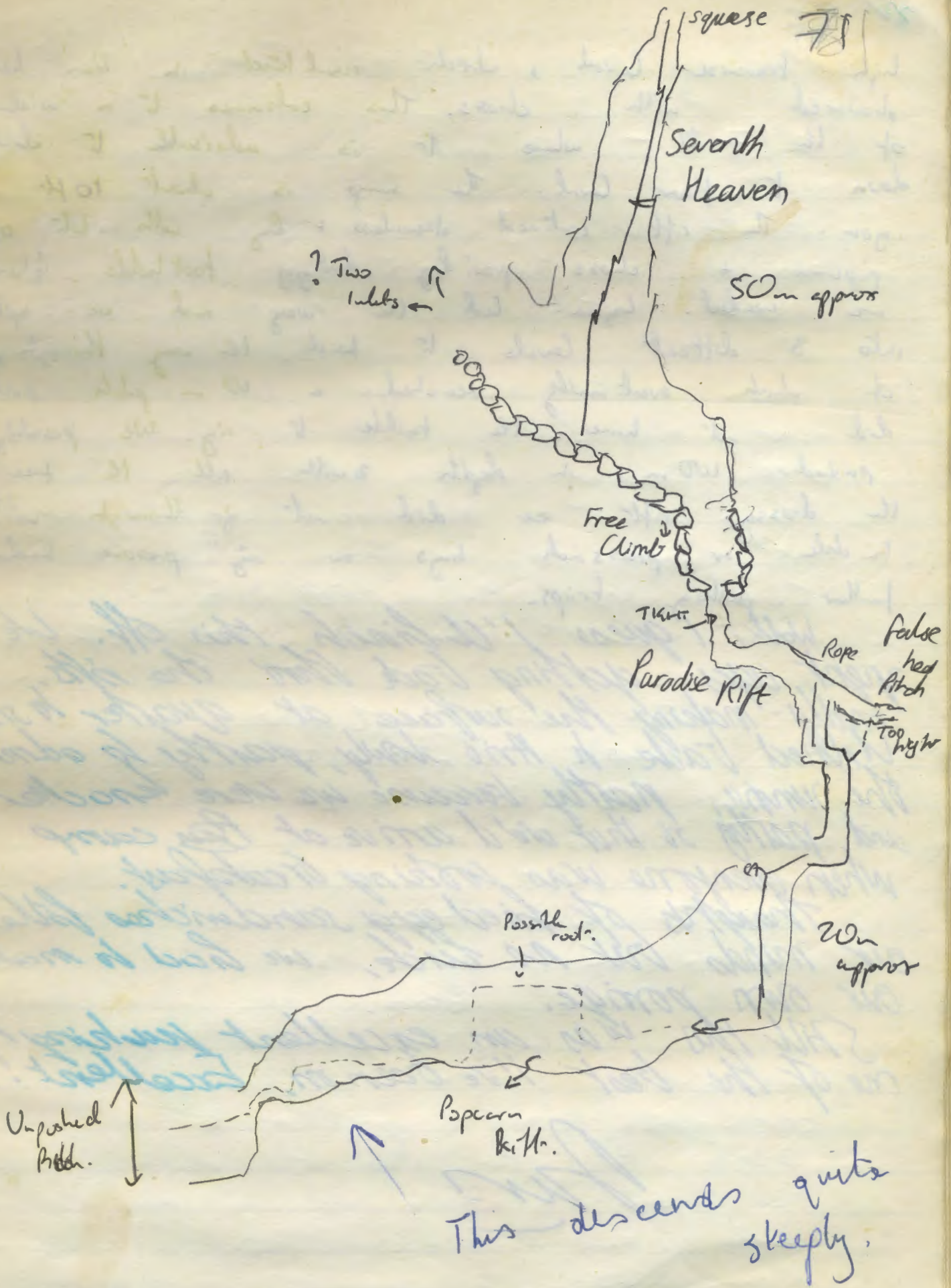
This pitch is so wonderful we called it "Seventh Heaven." At the bottom is a chamber with a boulder stream sloping floor. A further down is an almost unnoticeable squeeze to a rift: "Paradise Rift." The best way thro' this (Jonathan will almost certainly disagree with me) is to lead up to the ceiling & then descend vertically about a metre from a fixed rope. Unfortunately we didn't notice this way down at first and I spent ages rattling in one of those

Outward folks. I am myself in the pit, pushing a foot above my head with 3 inches facing space between the extreme. What a more tedious to having regard the path, but on narrow etc in the light of finding that you can't actually get down the path, ~~discovered~~ in a separate fashion, eventually ~~discovered~~ from freedom. The way on had been rediscovered.

Having done every thing consuming thing including ceiling & uncutting a rope, finding a perfect sized rope for a secondary through the pit hole and moving a slotted full track being through the pit at various levels, I was a wire passed off when the pit kind out to be in light. The was nothing for it but to square straight down the pit until I was sitting on a dipping ledge with a 15-20 m path below. This was I thought a perfect place for a hang off a large natural end an easily put in ball, however it's angle between them forward out to be about 180° rather than less than 90° so had to be redone as two figures in sun which of eighth with the path dropped to a sun which of chamber with



As I wanted to know the distance between the chamber and the pit, I went to the top of the chamber and measured the distance. The distance was 15-20 m. This was I thought a perfect place for a hang off a large natural end an easily put in ball, however it's angle between them forward out to be about 180° rather than less than 90° so had to be redone as two figures in sun which of eighth with the path dropped to a sun which of chamber with



high traverse level, which resulted in Dan being showered with choss. This continues to a widening of the rift where it is advisable to climb down to floor level. The sump is about 10 ft behind you. The rift continued strenuous & long with lots of popcorn & choss providing dodgy footholds. Goggles were needed. Lynn led the way and we split into 3 different levels to find the way through, all of which eventually reached a 10 m pit which we did not have the tackle to rig. We possibly pushed 100 m in depth & with all the free dunks, the crossing after we did not go through with the hole or pressure bags so my pressure had to be further pushing trips.

Well, I guess I'll finish this off. We spent ages getting back thro' the rift, finally making the surface at quarter to six. Walked back to Ario slowly, partly to admire the sunrise, partly because we were knocked and, partly so that we'd arrive at ~~the~~ camp when everyone was cooking breakfast.

Thoughts of fried egg sandwiches filled our minds but no luck, we had to make our own porridge.

Still this was an excellent pushing trip, one of the best I've been on. Excellent!!

Dan

Pushing trip 22/7/87 Graham & Paul.

2/7 - 12 hours

Armed with 3 tackle bags we descended slowly to the previous team's limit. The pitch was rigged by sliding at 45° for $\sim 3m$ and then swinging down onto the rope which is belayed over a small protrusion. This pitch is free hanging and $\sim 8m$ long. This lands in a large chamber with a small pool for washing, getting etc.

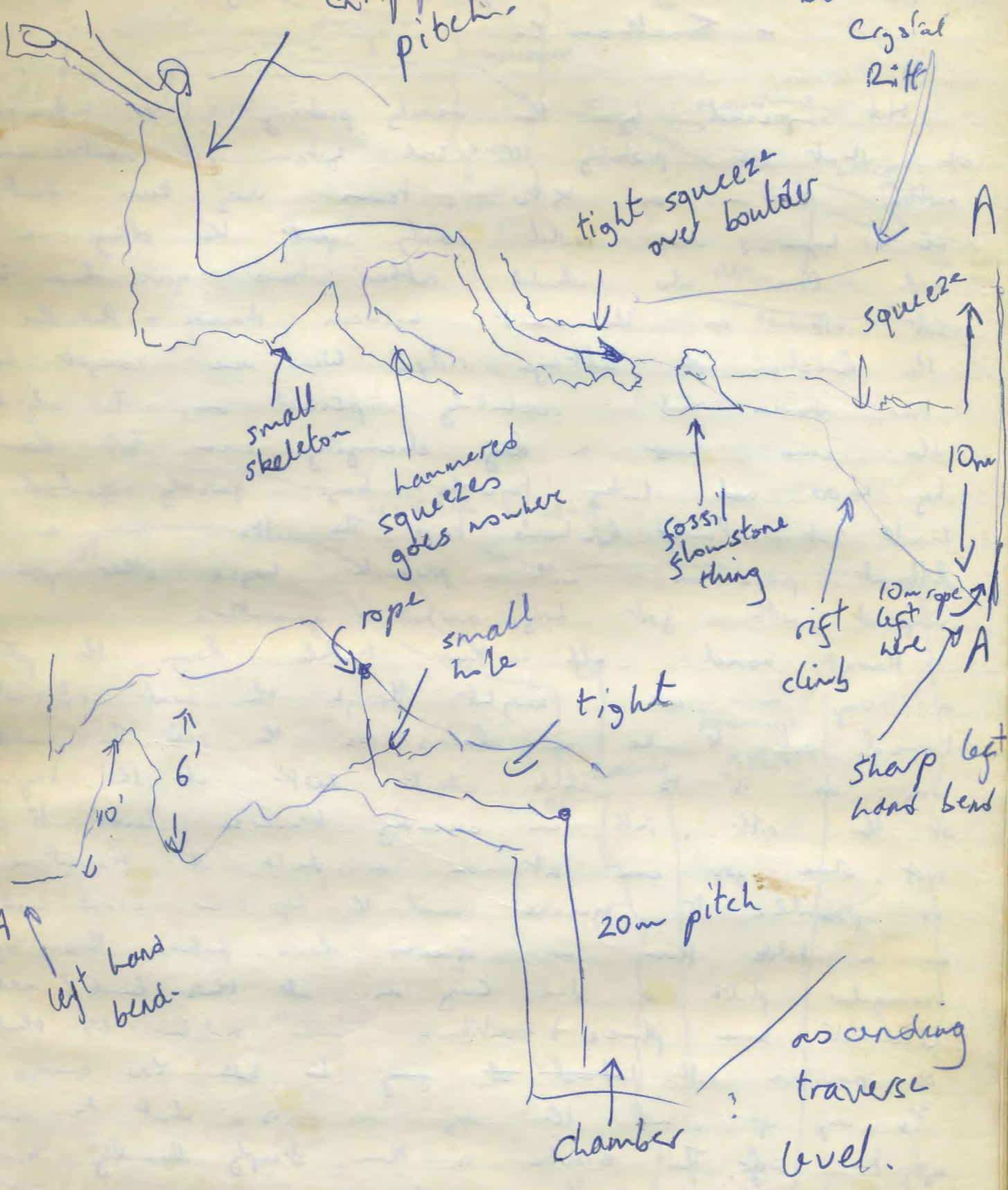
Climb up the slope to the highest point where the rift leads off. The end of the rope is stuffed in at the start of the crawl. A couple of ^{hammered} squeezers lead to a piece of fossil flowstone? which one chubs over or around. One then climbs down through a squeeze and down the rift to emerge in an aven at a sharp left hand bend. The continuing rift is climbed up for 10', and then immediately after down 6'. Traversing forwards and upward to a comfortable level. At the top of which is the pitch rigged through a small hole and crawl. This is about 20m and leads to a largish chamber and continuing narrow rift.

Out at 11:30 after some trouble with squeezers. Back at camp at 1:30 after a trip into the Tou de la Cistra.

Elevation

Gripper pitches

Black Crystal Rift



tight squeeze over boulder

small skeleton

hammered squeezes gets nowhere

fossil slowstone thing

right climb

sharp left hand bend

tight

20m pitch

chamber

ascending traverse level.

left hand bend

A

A

A

A

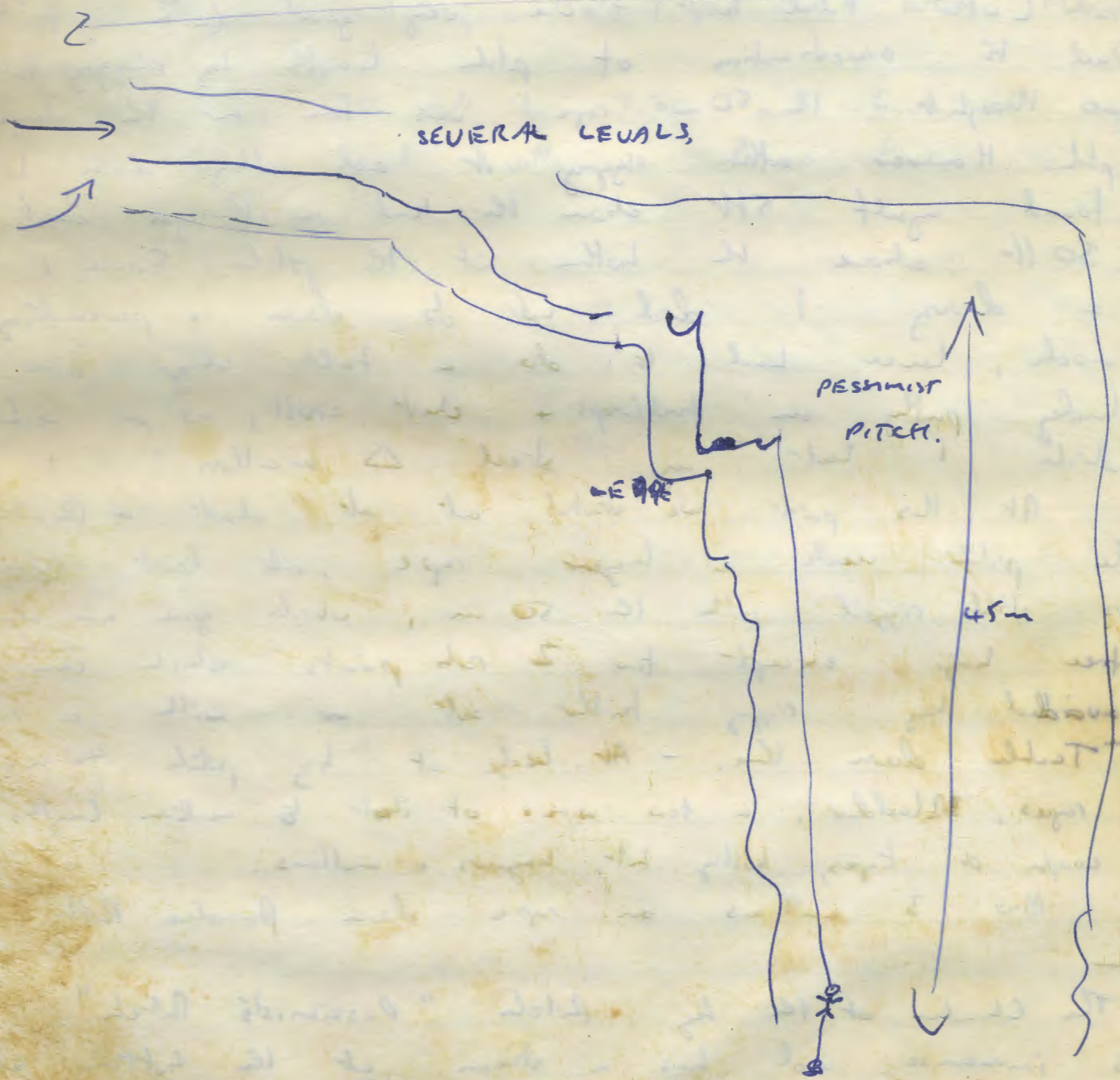
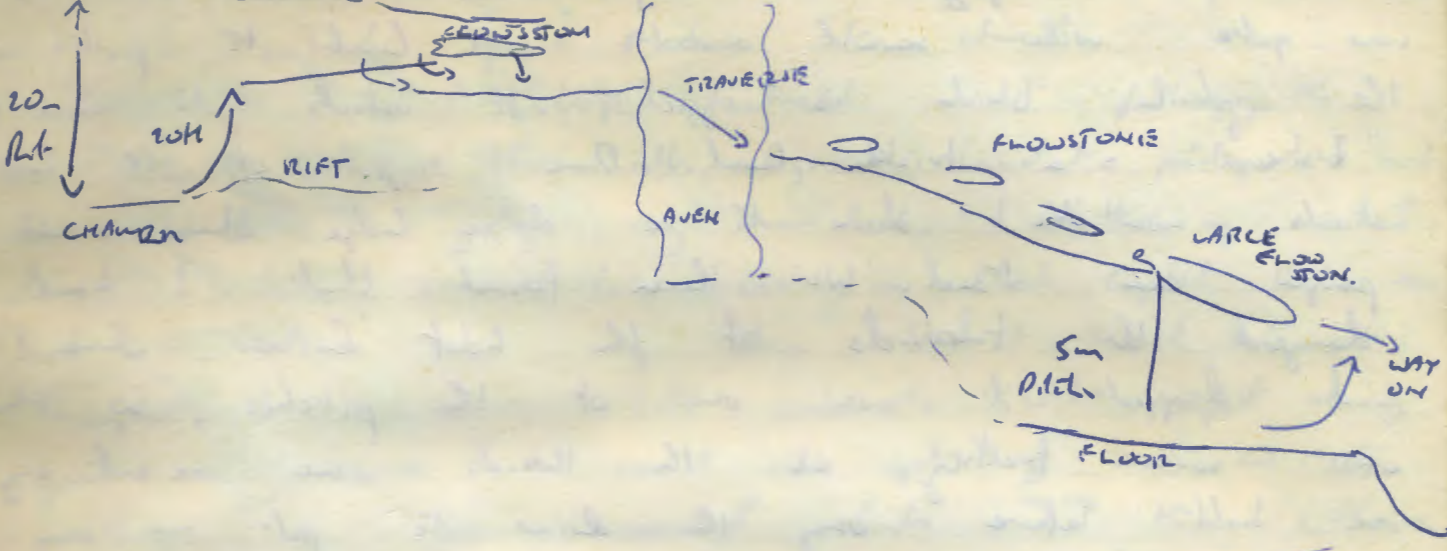
A

Yet Another 2/7 Pushing Trip. - Lynn, Dave H
+ Sarahann C.

Not impressed by the nearly pushing trips before hand of what is probably the 3rd system, it was an extra 250 m on X.10, team very keen featuring me + Lynn who could easily spend the day in bed and Dave who would rather have gone down 2/7, set off in the mist between showers + thunder in the direction of Sultanga ridge. We were caught by two showers but resolutely pressed on, it only became the case here a dry changing area. Got down by 4.00 and lucky truckle bags quickly ended the limits of Paul + Graham's trip. The riffs are a different proportion with prosack bags + other paraphernalia compared with just bag, oversuit + generator.

Heavy snow all their truckle down the pitch a way on was sought through the next riffs which turned out to be a obvious as the next. The easiest way on is to climb about 20ft at the beginning of the riff, into an ascending traverse level to the root, where you can sit on a shelf of flowstone. It is possible to squeeze round the lip, or crawl underneath on a false flow or squeeze down before this by a triangular plate of stone. Carry on at this level (alt 3 lead to same place) until a "aren" similar to that of previous riffs. Instead of going to bottom you emerge about $\frac{2}{3}$ way up, and the way on is that to way up the side. The cirque is then steeply descending beneath change of fossil flowstone before emerging on a rope ridge to drop to the bottom of the riff over a large flowstone. Either ab down the rope the ascend to roughly the same height or slide down the flowstone for a not very dodgy traverse. The route now

FLOW LAST
TRIP.



BOTTOM AREA
30ft
down

descends quite steeply to the plateau. As the other is now quite wide several roots with level to paths over the plateau which is rigged off into quite near the "stream" - a trickle level. Dave rigged off the best natural available down to a dripping ledge where several people can stand. We then found that I had damaged the brackets of the bolt driver when I had dropped it over one of the pitches, so there was some trouble as the threads were re-cut very one bolt before using the driver to put on very hard (with steel bolt) + one very good (with ring) bolts. Due to overestimation of pitch length by dropping rocks we thought - the 50m rope was fine for the longest pitch. However after rigging it and abby down I found myself 5ft above the knot in the rope and 30ft above the bottom of the pitch. Since I am a diver I don't see to down in passing mode, hence had to do a full change over in cloudy path in perhaps + chest coil, as a result of which I lost my steel Δ motion.

At this point we started at about 12.30.

The pitch needs a longer rope, at least 70m. It is still rigged with the 50m, which gives an almost free hang except for 2 rock points which could be avoided by rigging further out or with a abby.

Tackle down this - At ledge of big pitch 40m + 50m ropes, bladder, a few wires of chest to medium lengths, couple of eyes, hollow lat, hangers + mullans.
 Mo 3 mullans on rope down Pinnacle Rocks

The character of the big pitch "Pessimist's Pitch".

is immense and has a stream at the bottom, below which I would expect the rope to be cut. The origin of the water is not from the other side

have pushed so far but I could not see
out the actual place where it checked.

The out wind trip featured, not following the
best ways through the cleft, by now's headlight party in and
all 3 of us getting very knocked. I lost my contact
down a hole near the square in Black Crystal Rth, so
had to hit my way down to it, had to get
through the numerous lake sponges with most of my
gear on since I could not get my light out of it,
& dropping a spare searched down 7th Avenue (Please
return). Might have gone down another way. Mead
Surveying.

We were all out by 7.30 and back at camp
by 9, to be met with a lantern stew.
Sawyer.

Thursday 23rd July 1/4 Surveying & Detaching Trip
 J.T., Martin M, Dan.

After several of other survey trips had struggled thro' "Oh No Not Again", we were now in with a chance of getting to the bottom of the cave. The survey went pretty well, apart from almost losing the survey notes down a pit. Tony valiantly recovered them after I'd foolishly forgotten that they weren't actually clipped to the captain's log.

Passed the burglar alarm without breaking it and then began the detach. Again we were pretty efficient. "Oh No Not Again" proved easier than expected and ~~apart~~ only ~~from~~ required 5 trips thro' it. (It would have been 4 if I hadn't forgotten the used carbide container).

Hauled bags up pitches, ended up with six bags & a couple of ropes. Arrived at top at 3am (13:30 start) & carried half the tackle bags back to camp. ~~Started~~ We've left the cave rigged to large pitch for dye detecting.

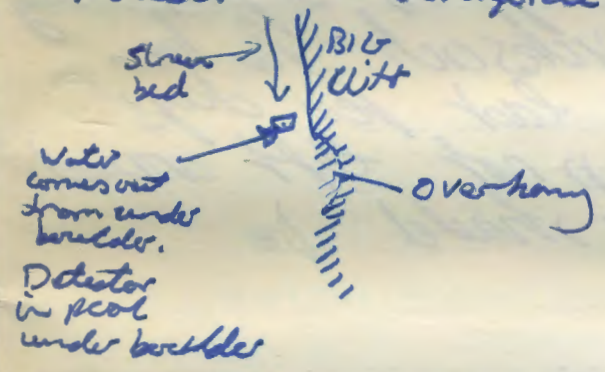
EXPEDITION RAFFLE (DRAWN 14:50 FRI 24 JULY 1987)

- 1ST PRIZE, GUARD ARIO SAT 25 JULY: DAN M.
- 2ND PRIZE GUARD ARIO SUN 26 JULY: MARTIN M
- 3RD PRIZE GUARD BASE SUN 28 JULY: MIKE BL.

Placing Dye Detectors Mike BL 21.7

1st attempt at the Trea resurgence. Looked up completely and ended up in the Val Extremos. I put in 3 detectors

- ① 1st resurgence. Water comes out from under boulder. Detector in small pool under rock.
- ② Stream disappears and reappears several times. Detector in resurgence just before overhang



- ③ ~~Stream~~ ~~from~~ ~~bridge~~ ~~on~~ ~~lain~~ ~~path~~ ~~into~~ ~~pool~~ ~~below~~ obvious waterfall. Detector attracted to a rock. Landed it to left of ^{falling} this water. I was very surprised and dead chucked to bump into the lain path.

2nd Attempt. 24.7

Found the Canal de Trea. Much better!
 Detector in ^{left} pool under BIG boulder at resurgence.

82
25 July 1987.

Sat in the tent guarding camp when Blas appeared & started to talk about gas drinks that had been nicked from the Refugio.

Went up there with Martin Lavey & found that £150 of drink had gone. He requested some Spanish covers that were here this morning, altho' I think it may have been some long haired youths I met ~~at~~ at bottom of "Sect 3" at 10pm last night. Am going to walk down with Blas tomorrow for an identity parade.

The moral of this story is that things can be nicked from here. Blas says it's a particularly bad year. ~~Several~~ a rucksack has been nicked from the Refugio in the last few days so it is vital that gear is not left around. Also, whoever is guarding camp should be particularly diligent.

Surveying 2/7 Entrance William Tom 25 July

Decided, and as we were that we wanted to go early. Tom had just walked us from Los Lagos & we set off in the mist up Jaltayan. Tom had never been up there before or there saw precisely Zilch from the top. (The mist almost cleared). Just as well we couldn't see the drop as we walked along the ridge & located POZU del 30m below Eyehole with not much difficulty. Started surveying at 3:30pm: The Entrance is so large that it was a good hour before we needed our lights. Surveyed down to the squeeze in the stations
NB. Station 1 at top end of doline.

Station 2 on strategically placed rock at bottom end of doline

Station 4 in centre of ⊗ mark

Station 11 (last) at top of squeeze.

Decided to jark at 6:30pm before squeeze as we wanted to get back while it

was still light. Came down gingerly in yet thicker mist & reached camp without getting lost (!) at 9 pm. Not much of a trip, but it's a start.

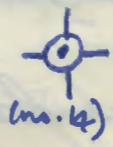
P.S. The Buttrick position on the map is inaccurate + must be refixed on a good fine day.

William

Dr. Tom "That'll be ten guineas" Houghton (who thought he'd come to Spain to take a break from medicine)

N.B. Remittance station is marked (no. 13)

Last station is marked



• mark the station in each case.



26/7/87 Harry & Martin L.

94
E/S. 230° from sea point. No snow. north another look.

SEE ○ To left of path of top camp just below P. Gustafson. Arched entrance, 2 shafts, separated by rock bridges + arched 'walk in' entrance. Snow visible

1 m wide 3 m long shaft. 5 second bounce 11' 11"
75° to P. Gustafson, to left route to top camp above grassy depression. 315° to La Rasa. 235° to Blanca col. (Juan Gonzalez). In 'Los Cartiles' area. Marked as 12/8 in red.

Clutch of POLIFENO shafts. To left of path to top camp in fluted limestone adjacent to grass. 190° to La Rasa. All dated 17.8.82. Lots of other small shafts, wide cracks & some fine looking but totally choked entrances.

27/7/87 Mike B-L & Martin L.

To S (left going from area 9 to E) of path shaft named POLIFENO 16.8.82 SIMA ESTRECHA

3m deep; 2m lag rift entered via 1m dia entrance: climb down to boulder chock with slight draught under phreatic roof. Marked ES. 136° to El Regallon, 260 to Cabeza del Burro (?)

E6 10m drop down rift pointing to La Verdellangua enters chamber (3m dia) with 2 ascending arcs. Clambering down leads to climb into vadose rift choked with earth & small stones. 350° to La Rasa 195° to La Verdellangua 110° to El Regallon.

E7 Body size entrance in dolomite/grassy area with old light blue paint markings which may well have said X & SCROT HOLE. Descends two body lengths & closes. 90° to El Regallon 180 to La Verdellangua.

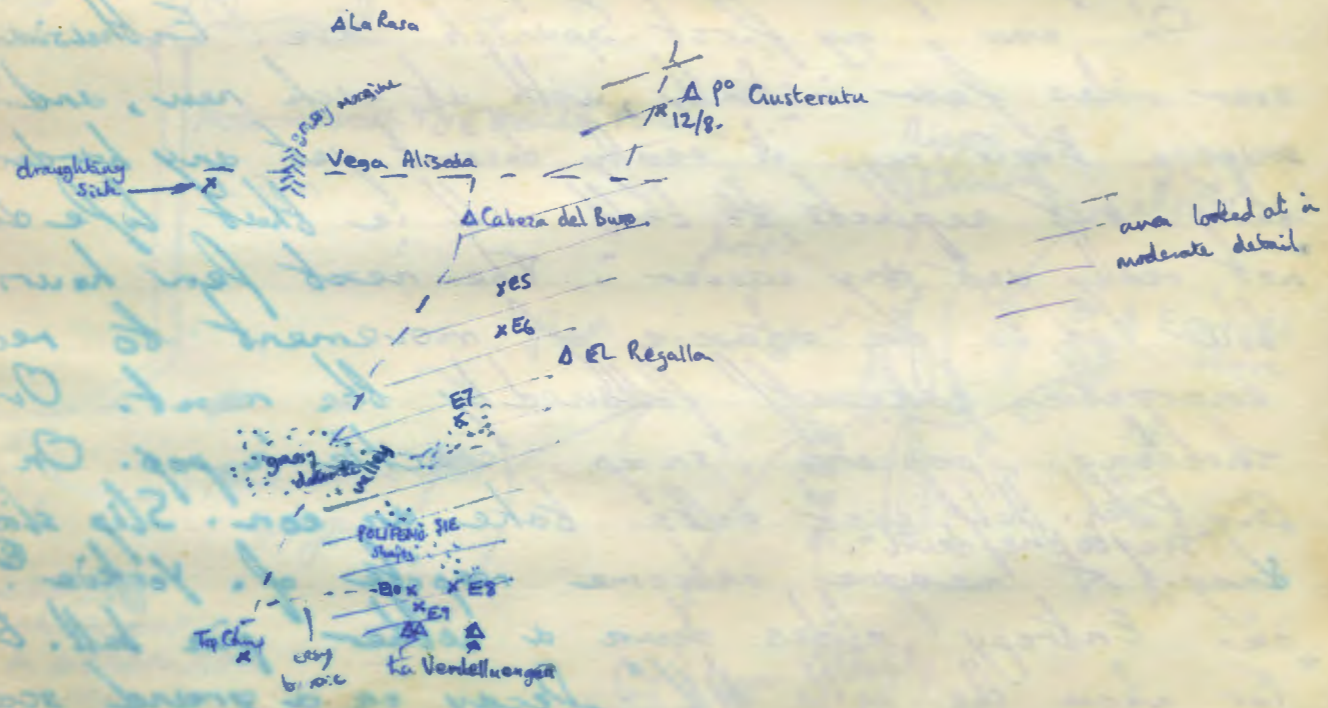
Most promising area is up S edge of grass/dolomite band ascending towards La Verdelluengua past the POLIFENO 17.8.92 holes on right & SIE O opposite (3 m climb down into descending rift for ~12m to pair of large old animal horns & faintly draughting body size crawl with soil floor & odd rocks - ? dig), towards a yellowish nodule.

Just before the nodule & to right is E8, a 9m long, 3m wide rocky floored phreatic tube remnant from 1/3 (at entrance) to 1m high. No prospects, but a superb view. 297° to P° Conjurtao, 165° to La Verdelluengua.

Traversing to right & ascending slightly for ~50(?)m leads via a long narrow rift with snow ~20m down to two imposing entrances below subsidiary summit to W of La Verdelluengua. 1st is a shaft (10-15 into snow with possible way on at back & probable connection to next entrance, marked E9. This has a ~10m drop to snow from base of boulder slope into a steeply descending snow slope down another imposing 3m wide 10m high passage.

E10 is another entrance shaft to snow (~15m). Located ~30m below E9.

Anyone who believes in draughts & is prepared to dig at some boulders with crowbar & hammer should go to the sink hole at the W end of the Vega Alizada (currently marked by a dead sheep). This emits a substantial, very cold draught from a diggable boulder choke. Entrance is a ~4m climb (ladder helps at bottom)



Unless more fresh veg. is stashed somewhere other than the fridge we need more potatoes, tomatoes, peppers, onions.

Dave H. 28/7/87

P.S. we also need more gas for the ovens and 2 star petrol as soon as possible.

28/7 4:30 pm. JT + Paul leave to join Martin at La Jayada. We are bivvying somewhere around Top Camp expect us back tomorrow evening or the following day.
P.S. I have borrowed DH's stuff sack

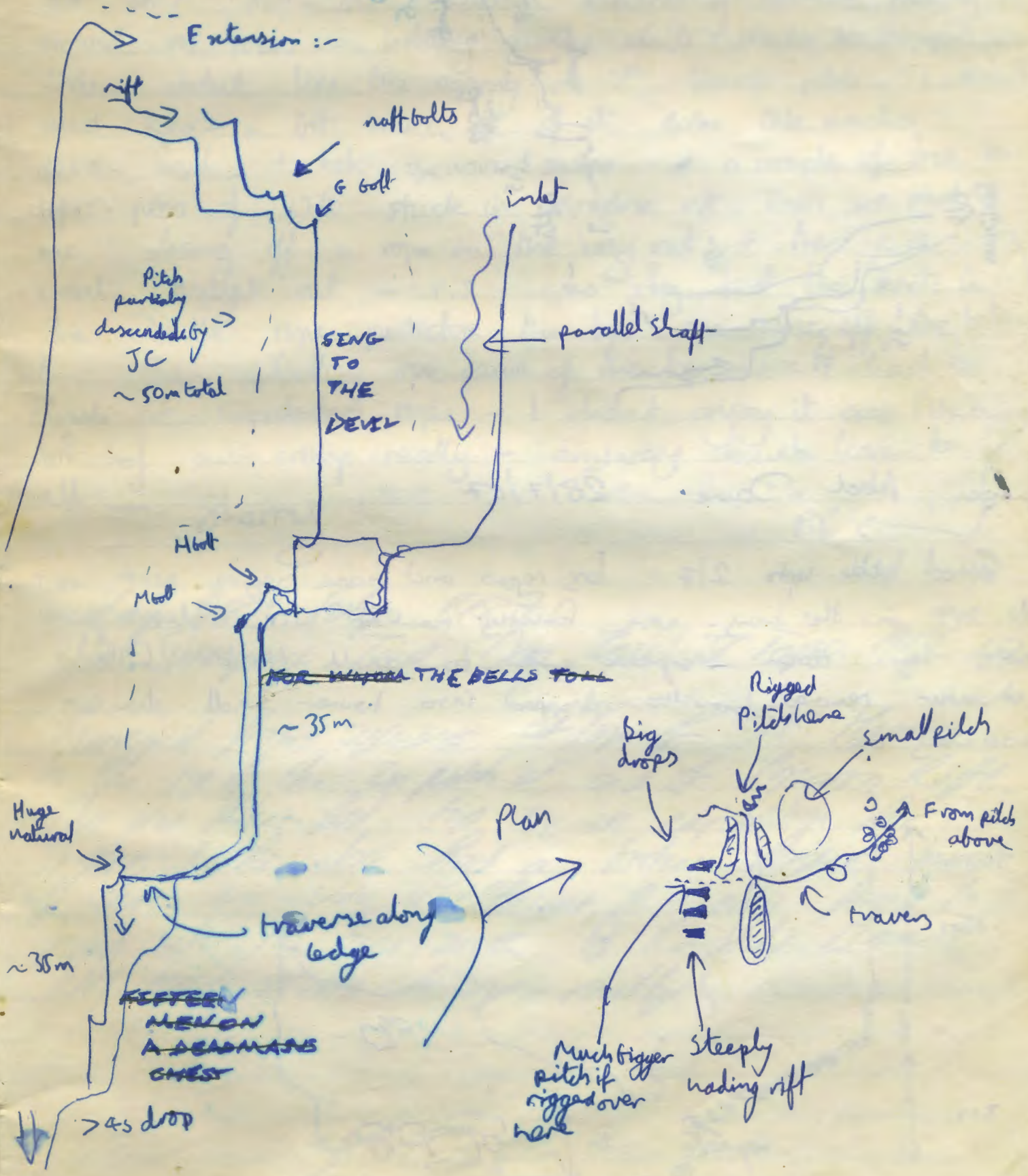
28/7/87

Hello from S.H.R.!

27-28/7/87

A long trip 16 hrs. 2/7 is going!! Mike M, Graham N, Harry M.
Oh wow, my first Spanish cave. Enthusiasm over rides fear initially, with at each new, and brighter squeeze. Big G says "it really doesn't get any harder than this" but neglects to tell all is that life does "not really get any easier". The next few hours blur into an abaxia of movement to reach one energetic take off followed by the next. Oversuit shredding popcorn, snap, crackle n pop. On to the Big Pitch. Half cast bolts take are con. Slip sliding "sing to the devil". Snay-f. A meagre welcome respite of Yorkie and on. Entropy slides down a rather pine ball. Boom. "For whom the bells toll". Decay on a grand scale. Another spider and were all out. Quzab! A sombre place this "fifteen men on a dead mans chest".

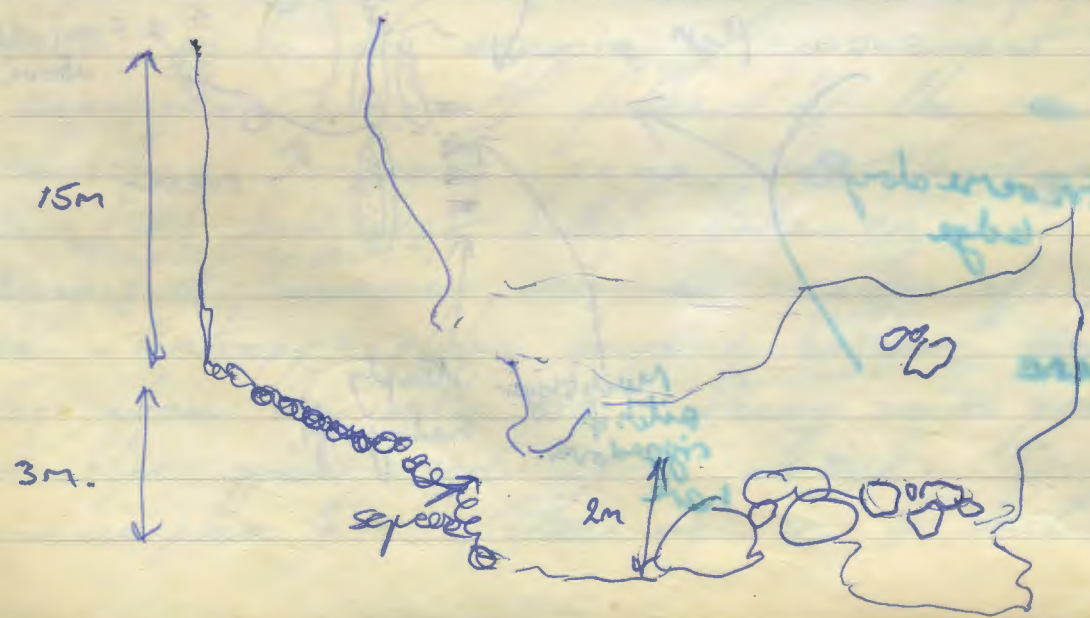
Dave; Quote :- "I can't do it in the dark...."
followed by :- "its not fair, everyone takes advantage of me when im asleep."





Lynn, Ned & Dave 28/7/87

Arrived tackle upto 217 long ropes and some rigging gear, went to 211/7 on the way - very faintly marked with blue paint. Set lya down & squeeze goes to small ladder filled chamber removed ladders dropped into lower small chamber - no way on.



2/7 Photo Trip Sherry Martin H. & William.

After a slow start (Martin H's generator didn't work + tourist trip up ridge) got down cave - only 50 snaps to take cos not enough film. Me + William alternating between posing around on ropes + holding flashes while Martin H. snapped away. William didn't like the rigging on 7th Heaven pitch - I wasn't mad keen - a bit much of it even. Ate mucho cave food + took sponsor snaps + a couple of true to life pics of Will stuck in paradise rift. Then we photo'd are hang off a rope on the way out + then just went straight out - P.S. who ~~had~~ tied the knots in the double rope protector the top one came off the belay & the bottom one came of the top one - I had to climb + unprotected rope - I didn't enjoy it cos I'm a bit of a wimp really - anyway much love to all - Sherry

P.S. ←

Tuesday 28th July 1987.

2/7 Surveying Trip. Dan East. JC Tape. MSC Book.

Surveyed from squares at Top of 7th Heaven to the top of the 8m pitch at end of 'Popcorn Rift'. This was Mike's first trip on an expedition for 3 years & he also had a broken finger. In spite of this we were v efficient & only forgot to hang onto the tape once. B. Roughly 3 hours. Not much more to say really.

Wednesday 29th July.

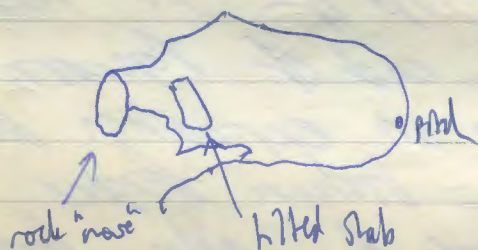
6:30 pm. Sitting Alone guarding Aris Camp. Better cook a meal for all those hungry caves look in the fridge. No potatoes. No tomatoes. Just pounds and pounds of carrots. Carrot stew? Hmm. Hope somebody brings some veg up with them. Oh well, I'll just have to use my imagination. Carrots.....

Sherry "we english have to keep it up"
Mayo.

29/7/87.

Pushing down 2/7 - Steve Roberts, Neil McHugh, Tom Houghton

Down to the limit of exploration carrying some rigging gear and a short and long rope, passing only to start at the survey party about the belays. At the ledge at the limit SGR put in a bolt which the rest of us were then forced to admire for a few minutes. Short pitch down to a ledge, belayed off a dubious-looking thread with a rebelay half-way down. The ledge is large, with a buttress out over the main shaft etc. -

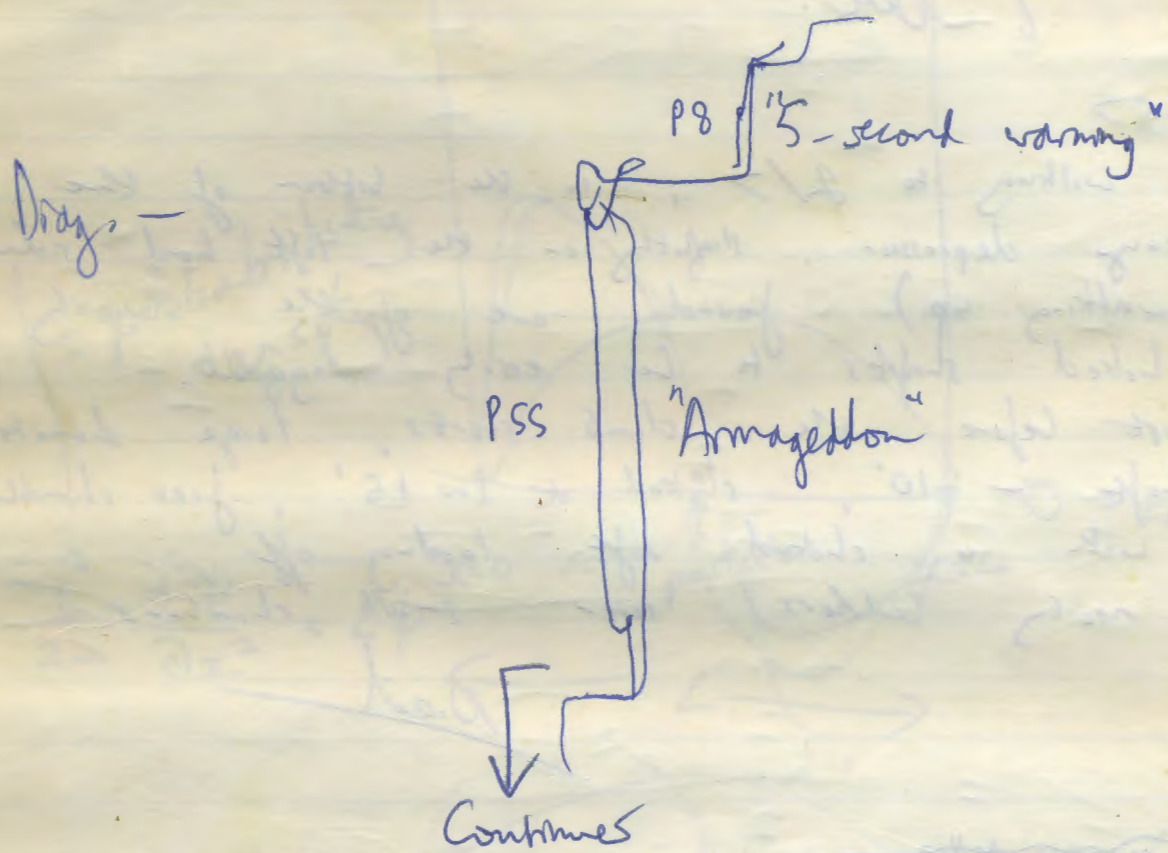


Relay for the next pitch was off the rock 'nose' by a wire - a flying rebelay hooked up from the tilted slab.

Clear hang but for a rebelay and rope-protection near the ledge. The (70m) rope ran out at the ledge... The rebelay is a pony little

number, looking like a car's head sticking out of the wall - could do with ~~some~~ replacement. Only the last 8-10 m. of the pit needs ~~the~~ ~~protection~~ anyway.

Lands on small ledge (parking space for 2 cars). Off the ledge - a 4-second stonefall.



29/7/87

Surveying down 2/7 William, Dave, Lynn

A short surveying trip down 2/7. Set off at about 12-30 to begin the survey at the top of the pitch into a small chamber at the end of popcorn rift. Surveyed down this day's Gichens rift and down the pitch to leading to the bot rift. At this point we were being pussed off (me & Lynn) and William was feeling ill so we came out slowly. Started at 11-30 arrived back at camp at 12-45

Arrived back to an empty camp which was then invaded by a group of pissed English (Welsh) spears. After they ate the stew leaving (so we thought) enough ~~stuff~~ for the pushing party.

The last survey station is at the bottom of the pitch marked with a circled dot & S, the tape is nearby.

Dave.

29-7-87

While walking to 2/7, in the bottom of the gullage depression, slightly on the left hand side (walking up) found one of the obviously chocked shafts to be easily diggable. Just before the climb starts, large diameter shaft - 10', chocked at ~ 15', free climb with a chocked rift leading off, nearby boulders cover small chambers.

Need

~~Dave "I'm not telling you"~~

Dave "I aren't telling you ordering you to make porridge, I'm ordering you not to make f+king porridge"

Did you know Dave has lots of photos of B Lyman doing all sorts of things."

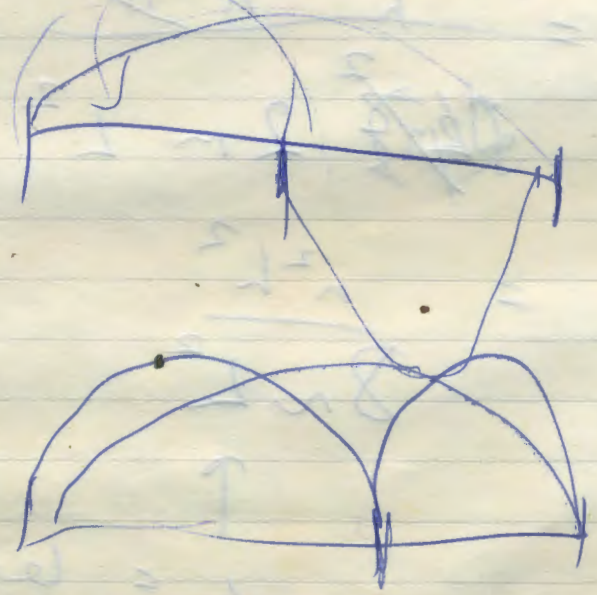
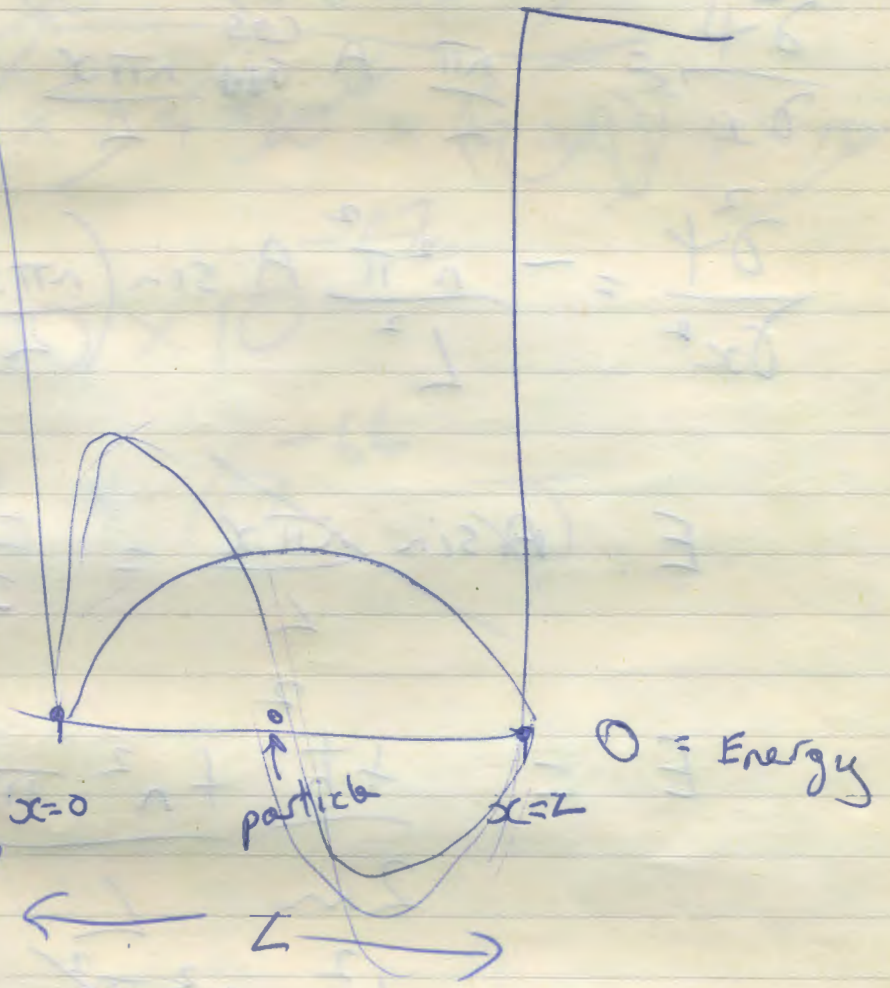
Paul "I just enjoy not going caving" Brennan²

$$E = \frac{m^2 h^2}{8m a^2}$$

Paul "It's just like coming back from a 6 weeks Mendip trip" Brennan.

$|\psi|^2$ = probability density

$$-\frac{\hbar^2}{2m} \frac{\partial^2 \psi}{\partial x^2} = E\psi$$



$$\psi = A \sin \left(\frac{n\pi x}{L} \right)$$

$n = 1, 2$

14

$$E\psi = -\frac{\hbar^2}{2m} \frac{\partial^2 \psi}{\partial x^2}$$

$$\psi = A \sin \frac{n\pi x}{L}$$

$$\frac{\partial \psi}{\partial x} = \frac{n\pi}{L} A \cos \frac{n\pi x}{L}$$

$$\frac{\partial^2 \psi}{\partial x^2} = -\frac{n^2 \pi^2}{L^2} A \sin \left(\frac{n\pi x}{L} \right)$$

$$E \cdot A \sin \frac{n\pi x}{L} = \frac{-\hbar^2}{2m} \frac{n^2 \pi^2}{L^2} A \sin \frac{n\pi x}{L}$$

$$E = \frac{\hbar^2}{2m} + \frac{n^2 \pi^2}{L^2} \quad \frac{h}{2\pi}$$

$$E = \frac{h^2 n^2 \pi^2}{2m L^2}$$

$$E = \frac{n^2 h^2}{8m L^2}$$

↑

L = length of box
 n = whole no. 1, 2, 3,
 h = Planck's constant
 m = mass

$$L = 0.02 \text{ m}$$

$$n = 16$$

$$m = 14,000 \text{ kg}$$

$$E = \frac{20}{80} \times \left(6.6 \times 10^{-34} \right)^2$$

$$\cancel{8} \times \cancel{1.4} \times 10^{\cancel{4}} \times \left(\cancel{2.0} \right)^2 \times \cancel{4} \times 10^{\cancel{-4}}$$

$$800 \times 10$$

$$2 \times 10^{-66}$$

J

$$6.6 \times 10^{-34} \text{ J}$$

$\frac{1}{2}mv^2 = \frac{1}{2}m_0c^2 \left(\frac{v^2}{c^2} \right)$
 $\frac{1}{2}mv^2 = \frac{1}{2}m_0c^2 \left(\frac{v^2}{c^2} \right)$
 $\frac{1}{2}mv^2 = \frac{1}{2}m_0c^2 \left(\frac{v^2}{c^2} \right)$

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 $\frac{1}{2}mv^2 = \frac{1}{2}m_0c^2 \left(\frac{v^2}{c^2} \right)$

$E = \frac{1}{2}mv^2 + m_0c^2$
 $E = \frac{1}{2}mv^2 + m_0c^2$
 $E = \frac{1}{2}mv^2 + m_0c^2$

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 $E = \frac{1}{2}mv^2 + m_0c^2$

mass
 rest mass
 total energy
 kinetic energy

Shaft Bashing - La Mayada (Area 9.)

In a sudden burst of enthusiasm, whilst sitting in Amioras eating cheese and drinking milk, Paul suddenly suggested that a team should head off to Top camp, via La Mayada, to do a little of shaft bashing. Keenness could not be maintained long enough to leave that night so an early start was called for the next day.

Tuesday 28th

The team was Paul, Johnny and me (M. H.). At 6.30 Dave alarm went off so soon Dave, Lynn and I were up and ready to go up to avio. At this stage I noticed that there was something wrong, despite subtle attempts at warning team top camp all that could be attained was a few groans and deeper entrenchment into their pits. Once at avio they would catch me up (or so I thought). I left for La Mayada with no sign of them, they'll catch me up soon. I went down La Mayada, rigged into a new chamber and ran around a bit thinking yeah great they'll catch me up soon. I tagged it round to 2/7 to catch M. Hickey to tell him to photo the chamber before he leaves. His generator was dicky so it was back to La Mayada pick up the generator. By now I was thinking 'where the hell are those lazy buggers?' Back to 2/7 for the ceremonious handing over of the generator but

98 unfortunately couldn't scrounge any food off
them. M. Laverty turned up and enthusiastically
offered to help survey la Hayada with
me. Surveyed the main entrance to
la Hayada and then the most
exciting point of the day, amidst
triumphal cheers and fanfares Paul and
Sonny turned up. How much crawling
gear have you brought I asked, "Oh
a 15m rope, a couple of tapes and a
few rope protectors". On seeing my looks
of disbelief they mentioned the amounts
of food they brought. We may not
be able to get down the caves but we
sure won't starve whilst ~~we~~ we're not
doing it!! After the survey of la Hayada
chamber M. Laverty left and we all went
off to do "the Wigwag one". After
having rigged to the first was plug then
across the top and down the second
one we called it a day. I left Paul
& Sonny lying in their bags munching
their well earned cave food wrappers and
sending their love to the rest of the exp.

Day 2.

I returned with more rope, I wondered why my rucksack was so heavy. Finally sweating & puffing I arrived at La Hayata, Paul & Songy were still eating and lying in their pits. Songy being more observant noticed my 20m rope was really 115, ops I thought. This was a bit of an easier day with a jolly nice photo trip down in La Hayata then after that I went on down "The wiggly one" again. There was a nice ice hole the sound of dropping stones never returned from down this ice hole. I went, yeah great I thought, this is going. It got tighter but still went, I started thinking of the clever ways flowers caught flies, down the tube then stick its got you. Down the tube I went, then stick, I was got squidged down this hole I had to reverse and climb out again. Would I have to melt myself out again. By the time I got out Songy was at the top about to don his gear to come and rescue me. I should have stayed longer, he might have actually had to do something. It was fogging heavily, Paul had abandoned camp and headed for arica but Johnny had found cueva del sheep shit in which we were to spend 13 hours. The entrance was too soft to sleep on, the thought of settling into the shit during the night was a bit off-putting so we climbed the back of the cave into a nice rocky platform.

DAY 3
Next morning after a good sleep we arose
to find or not find my shorts. I redefined
Murphy's law. What can pass through
Johnny's carbide flame will pass through
Johnny's carbide flame. Having roosts
on my bum became prime target speeding
up my exit from the cave. Wandering
around a sheep cave in valleys and
a hat I hoped the Spanish police
didn't turn up, it would take a lot
of explaining. We bumbled off to 3/9, I
had found my shorts but it was still
fogging heavily. Sonny disappeared underground
Paul turned up with more food then
left again. Sonny resurfaced and despite
my fears of never forced me into that
cave 3/9. My carbide wouldn't work
so off I went on electric. It went
down basically. Then it hit snow, then
down again to more snow, across a bit
down again to more snow. It had taken
about 100m of rope. It was finished,
so was my battery, I couldn't see
my feet but I knew they were there.
It was pure detachment in the dark

but I knew I could return to the delights of arvo as soon as I got out. ~~to~~ To finish the fur I carried the US to 247 then back to arvo for a wash & shave. A great three days, shave it wasn't sunny - though!
Martin

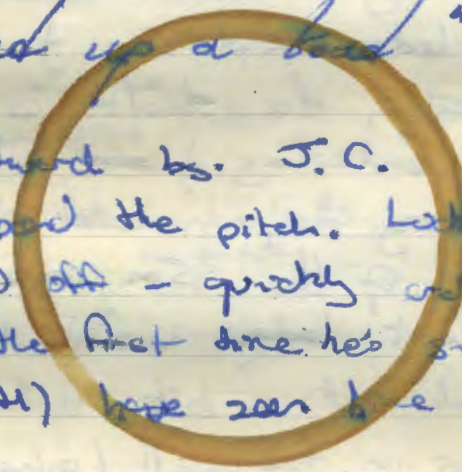
Paul "No way out animal sex for me" Brennan, (? only straight)

Sylvia to Paul - "too one and ^{ill tempered} apprentice/lecherous bastard"

Paul "Yes"

Paul "shave your head up a head" Brennan

A candidate for the Lemming Award by J.C. who suicide missed his neck - proceeded to descend the pitch. Lateral off neck removed 5th bar, 4th bar pinged off - quickly crushed him out in with his cowstails. Not the first time he's ~~suicided~~ rigged his neck as I (Dave H) have seen him do it several times.



Apologies to those I kept awake last night, especially to Sherry who in the next text to me must have been subject to the full rendition with all its subtleties and resonances, (not to mention the harmonics). Now I leave to pebble dash the path down to los Lagos
Martin

P.S. no wine passed my lips last night (in either direction).

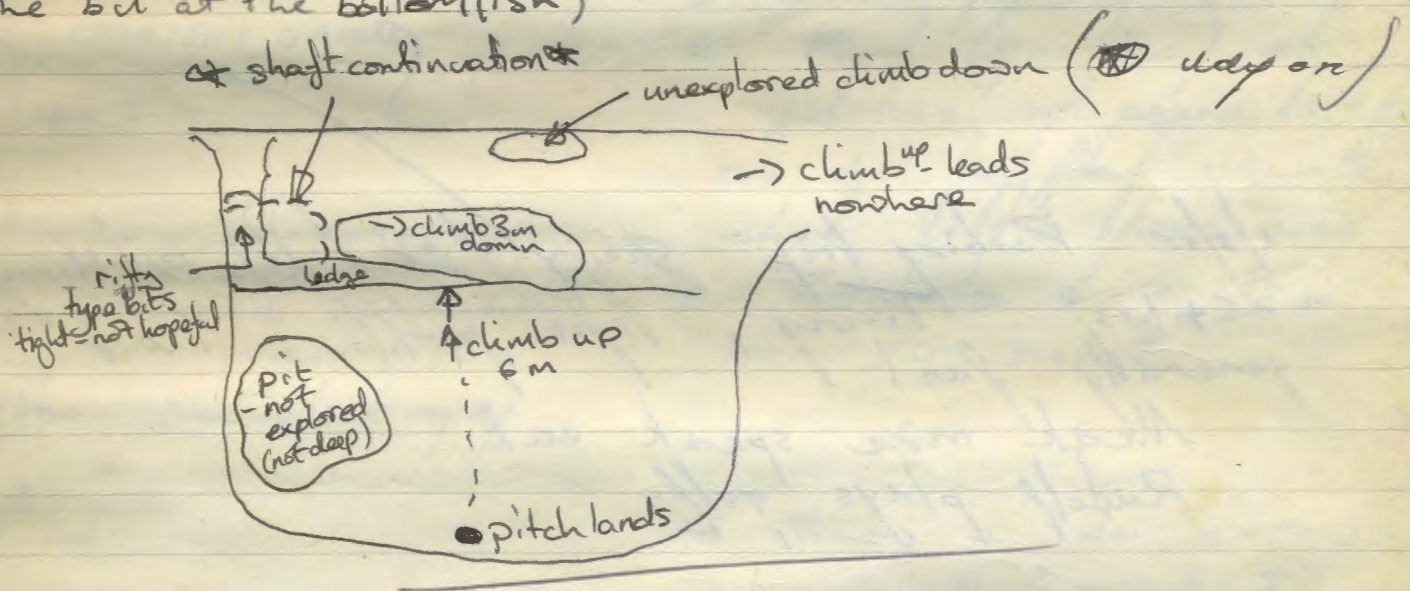
30.31st ~~Pushing~~ Pushing 2/7 - Mike Mead + Dan Mace
(nobody else would come)

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Took a while getting these with 140m rope, but worth the effort, once the shafts were reached. At the previous limit we spent some time throwing rocks over the edge and saying "Oh fuck" to each other. Exciting stuff this - big shafts going down, get the picture? Right. So Dan places a bolt, very well, in a jolly useful place and goes down, pulling the rope after him, for reasons that will be explained later. The pitch is hard to rig in perfect style, as the wall is off-vertical by about 5° , the wrong way. He stops at a ledge due to complaints from above about low body temperatures (mine). So the meeting reconvenes at the ledge and the shaft goes on. Mike descends, putting a tape reelay at this ledge and one further down. We reach another large ledge, the shaft is bigger than ever, and more water is entering from above. (These ledges are by now getting very drippy, cold places to be.) There is some length left of the 95m rope and a good hang available to the next ledge visible below. A traverse across the ledge and out a bit belayed from tapes around projections in the wall (who needs bolts?) gives a drop, away from the wall to - 10m above the ledge. So Mike ascends, Dan (cold by now) descends, ties off the rope to, you guessed it, another tape on a projection, and fixes the 35 (40?, 45?) metre rope to get down. This 'next ledge' in fact turns out to be a fairly convincing floor, with a hole to the left, and a climb in front. We climb up about 6-7m and look over the edge - what should by rights be another huge gaping shaft is a mass of boulders + rocks of all sizes forming what looks like, at first inspection, a terminal choke/floor. (See picture). There is a climb down to the left which leads to tight probably nowhere. To the far right a climb up mud leads to definitely nowhere,

there is a climb (rope) descent near the far wall which was not attempted (no rope) - BUT - the main hole in the floor, best reached by abbing down the other side of the climb up leads to a hole into a continuation of the shaft, a 3 second drop clear, without significant rattles beyond. At this point we had used all our rope, so didn't go on, but another factor is that while dropping stones down this shaft, the roof above your head is the same boulders you were just stomping around on, and the floor you are standing on is, presumably, perched above a 45m drop. TREAD CAREFULLY! A slow + steady exit was made, Mike being knackered. 18 1/2 hrs. It's still going!

The bit at the bottom(ish)



1ST AUGUST 1987

Bright sunny morning, all are festering ab
9am inside hot sleeping bags in hot tents
Eventually we are all forced out by a sheep
attack.

One sheep is now wily enough to
wedge open zips on the food tent.
we surrounded it & kicked shit out of it.

↑
Vicious bastards

10x

rerigging
7th Heaven

Dan is to do some mysterious solo trip

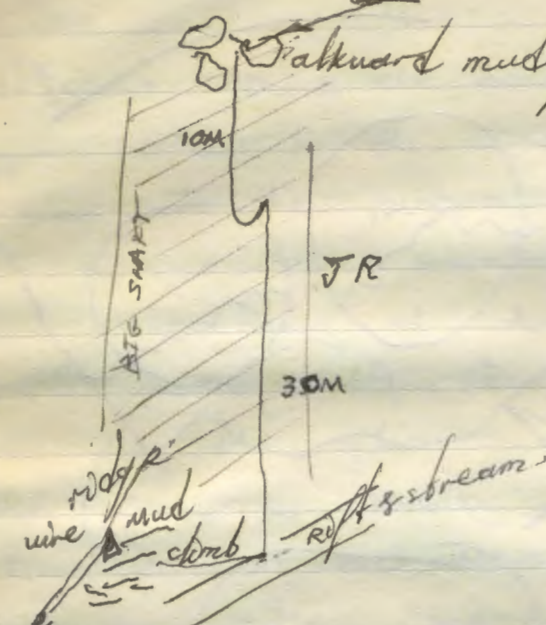
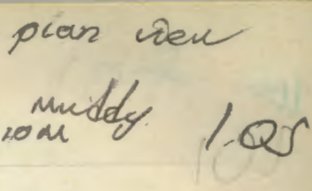
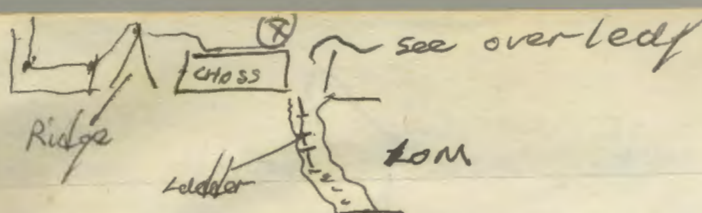
William Dave & Steve to survey, hopefully
to start of the shafts.

Previous pushing team of MBL, J.C., Harry +
Sherry still
not back at 1/4 to 12.

Maybe "Don't look at the cave" fell in
on them. ??

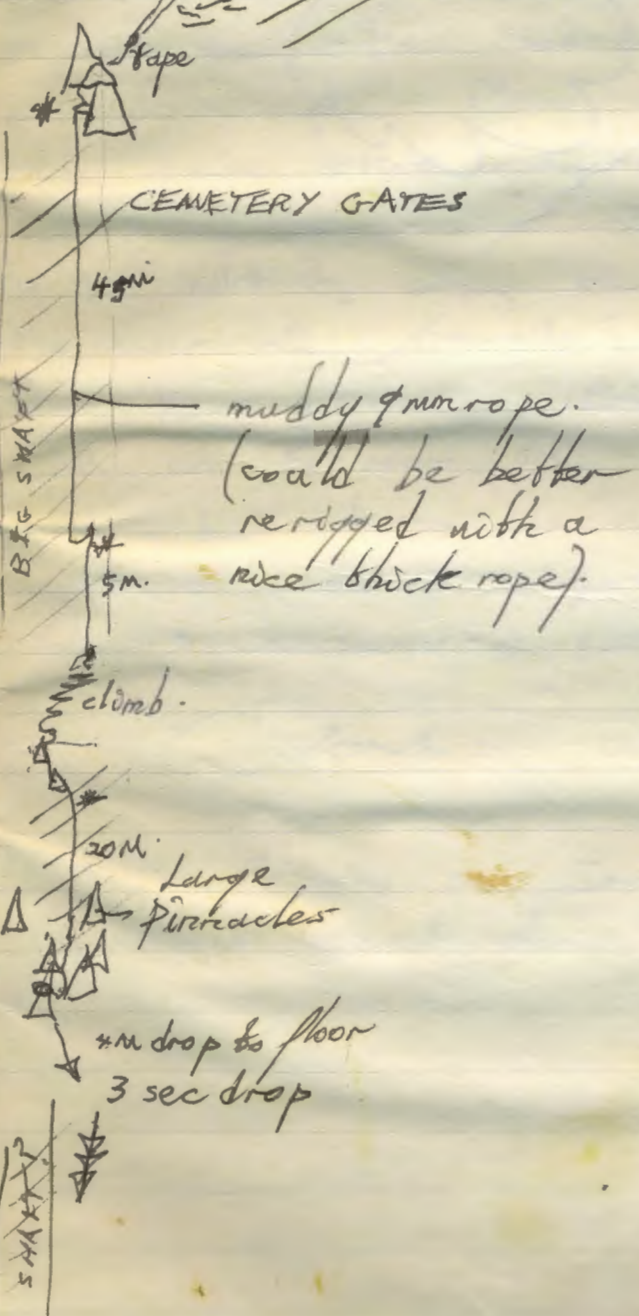
S

1/5/88. Pushing trip Sherry/JC/Mike B/Harry
in 26 hrs. Tiring, light problems. but
generally fun!
Weak Mike speak eat.
Rudolf plays golf.



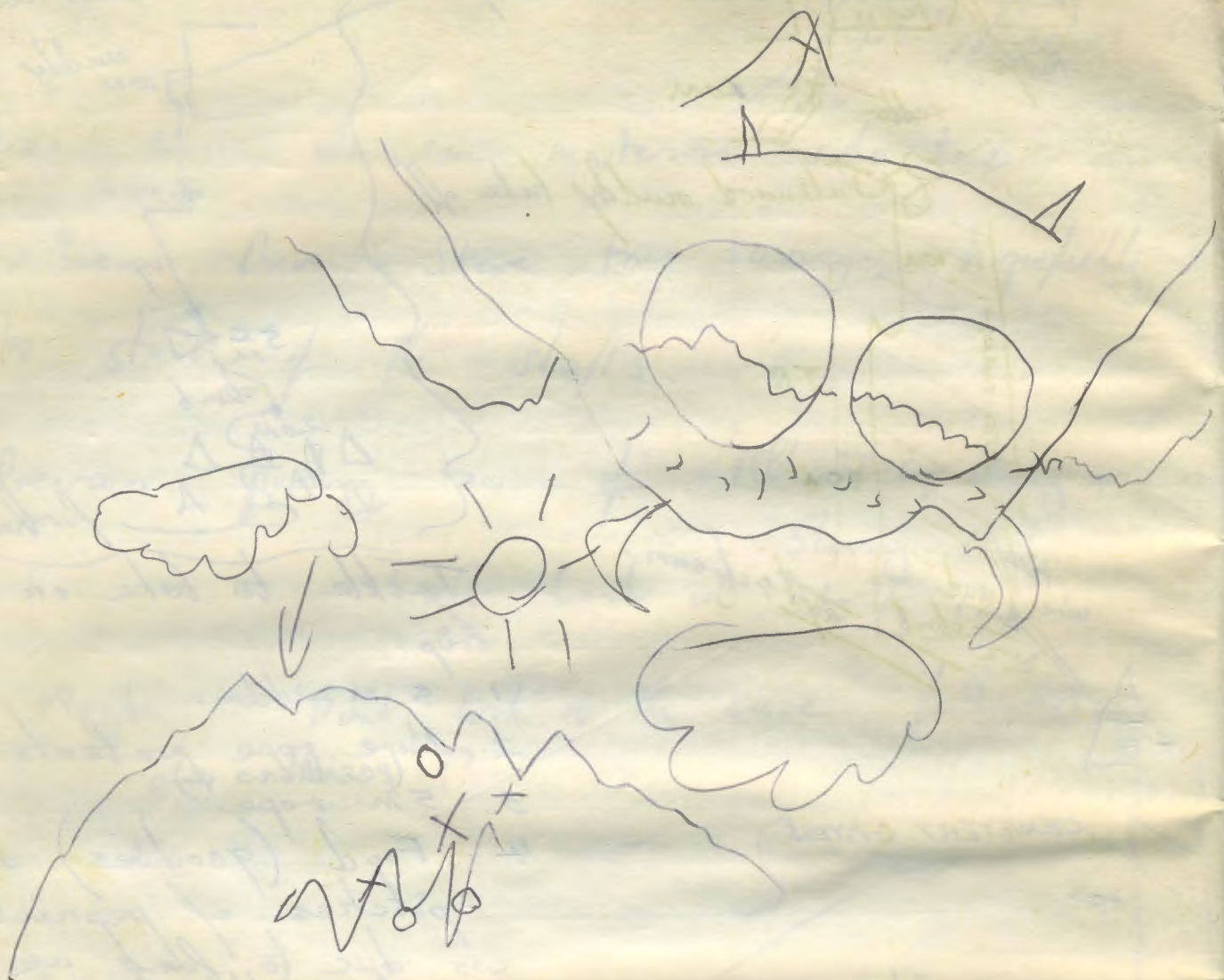
plan view
muddy 10M
40M
up 20M
50M
climb
further drop
Tackle to take on next trip.

1. 5 M ladder.
2. More rope protectors. (positions #)
3. 5 m rope
4. Food (goodies) at patches of peanuts etc. coz due to fact we ate what rattle there was.
5. Carbine down to the far point.



4B. There is also a ball put in at top of JR may well give better hang but not yet attached to rope.

P.S. Can someone pick up my 200m which is at spot marked (X) on top of choss.



Survey Trip 1/8/87 Dave, Steve R. William.

For revision

Left camp at a late hour after waiting for the pushing party. Walked to the cave & changed by 2-30 pm Still no sign of the pushers. Steve was very annoyed because some inconsiderate bastards had nicked his prostrate bag. Met Harry at the opposite end of the pit at the bottom of Seventh Heaven. Proceeded on down to the limit of journey. Note Cochons Ridge pitch is badly rubbed at the top. This was knotted out and attached to the below. Note this is due to the rope protector being mucky & not doing up. Please change this next trip. On the way down Steve was very enthusiastic but soon improved when we started journeying. This proved to be relatively easy and went very quickly. Surveyed the whole of Traveller's scree with the first big pitch. Last survey station is marked with an S near the top at the bottom of the pitch - both tops are near it.

Went out very quickly, the riffs posing no problems. One emerged at 4am to a starlit night - 13½ hrs.

Dave.

PS Riggings on Seventh Heaven is much improved - well done Dave.

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F01

Faint, mostly illegible handwritten text, possibly bleed-through from the reverse side of the page. Some words like "The", "and", "of", and "is" are barely discernible.

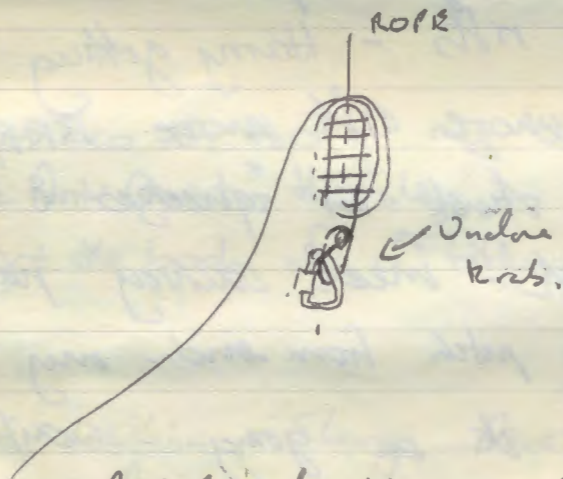
Faint handwritten text at the bottom of the page, possibly a signature or a concluding sentence.

Jonathan goes for climbing award yet again.
This time in my own words.

Standard practise for attaching rack on top of piton / rebelay

- ii) put rope around rack.
- i) Check not suicide rigged
- iii) Check Δ maitlon
- iv) Check knots on rack done up.
- v). Then + only then undo cows tails.

On Arneggedden rebelay where rope is at rope to stand up on the undo cows tails, I am the wrong size to do so. Having done steps i-iv) step v) would not work. So tried another knot in rope + had 2-3 more goes. My 3rd attempt achieved step v) but found during ensuing struggle knots at rack had become undone so found myself looking at this.



Stowed in dish towel, then re-attach to both sides of rebelay with cow struts. Took $\frac{1}{2}$ an hour to sort myself out, during which stage of recovery was slow, then carried on down cave. Could this piton or some other nearby be renamed "Meet My Maker" Is this man safe? Dare you go on his next trip?

WURAWO WURACAO

A trip down 2/7 - a novice-eye-view
 Pushing team: Harry, J.C., M.B.L., Sherry (team camp)
 down to 1st rift - abseil - squeeze - abseil - chamber
 Then the rift - squeeze - ~~get~~ grunt - swear
 oversuit - ~~RRIP!~~ swear some more, then the
 pitches - abseil - abseil rebelay ~~overman~~
 on and on and on and on - ah - the bottom - false
 boulder floor down the side on ladder - squalid
 mud ~~to~~ passage squelch slither squaled pitch
 more mud wearing thru' rack bars down-down
 another pitch - meet others at bottom Harry + J.C.
 went a little further - then the deepest bit.
 Then back out prunck-prunck-prunck on and on
 and on - oh bugger - mike has no light
~~set~~ slow prunck - light up mike slow prunck
 on and on - into rifts - Harry getting cold
 & up pitches slow more rift more ~~RRIPP!~~ of
 oversuits I get stuck in squeezes & stand on
 Mike to get out - meet survey party - very
 slow up 3rd ~~pitch~~ pitch from end - my light goes
 too but I get it ~~on~~ going - wait for ages
 for mike to get past rebelay on 2nd to last
 pitch worry - worry - worry - fret - fret - fret & try
 to light him from above with ever fading
 carbide then out of cave - WHOOPEE sunshine
 story - William's water bottle + digestive biscuits!
 you too can have achung cones - festering hands
 blistered feet & a generally fucked body if you go
 down 2/7 - try it some-time. Much love Sherry

Very boring

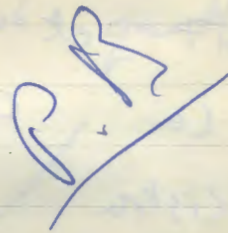
2nd August
~1 1/2 hrs.

1/4

Paul - all on his
lonesome.

Solo derig from Echo pitch - out.
Lobbed ~ 1.2 kg of Flavine FF stuff
(yellow) down Echo pitch as no
water in inlet ~ lower down.

P.S. Complete light failure at top
of the ladder led to a certain amount
of fretting as my electric could not
be made to work and so I had
to ~~pull~~ suck out the water dripper
in the pitch ~~dark~~ black, and be
very careful not to drop the generator
bottom down the derigged pitch below



Jonathan "Lynn was on top of my back" Cooper.

Dave "The Anti Christ" Horsley

Paul "I've got the body of a fifty year old" Brennan

2/8/87

Steve, William, Shery, Dave, T.C. FASTER
at Aris.

Too hot to do anything but
dare pitifully - feel wiped out.

Strange thoughts flit through me mid-

retiring weird. persistent ~~in~~ train
of mind while in the 'Westy' square

112
yesterday - "Una Helador" - someone who
torments + kills bulls by throwing ice
cream at them. "This trivialism could not be
shifted from my consciousness for a 24 hours!"

3rd August

Paul et William de la surface
survey entre 12/5 y 2/7
2/7 et a l'altitude de +286m über
la fístra y est 960m von
Cistra horizontalement.

3rd August

Paul H, Steve R + Martin + his camera
go down 2/7 - a PHOTO TRIP!
We (OH + SKR) didn't want a lay trip
Martin wanted to photo the whole cave
in one mega trip, and took 3 films
to make sure. However we:
(a) Made him take surface shots all
the way up to the eye hole (wow!) (first
time we seen it - Ciin 1000m below!)

JONATHAN - "Newspapers have two functions - one is for sending oversuits and the other is for 113 printing flowers"

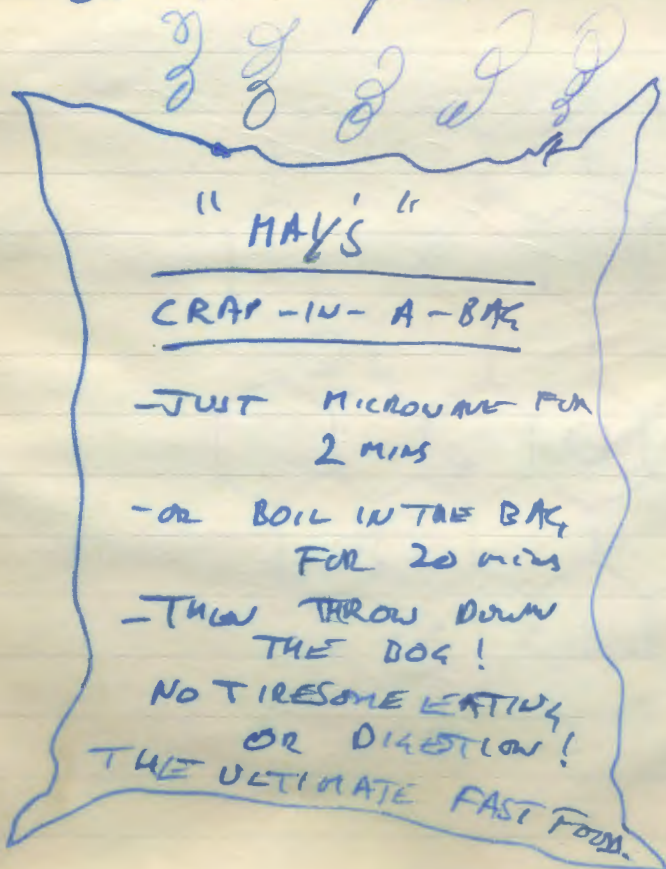
to Sam off the first to film.

(b) Telling him lots of the cave is the pits is really interesting and doing silly poses & nearly falling off

c) Looking on trying funny back - lit pix, etc

By the way @ 3 expens per shot, and with lots of duds (no flash!) (no slave!) we managed to use up 108 expens by 10:00 having gone under at 2. Wonderful pub sunset over the hills (another load of the Rings job quotl Martin)

New instant food -



S
Sun on the horizon,
The cup of tea.
Another day at Arico.

by Paul (aged 2 1/2)

Off to Las Vegas!
L+T for me!!
S&R 8.30 am.