

Peru 2004

by Taco Van Ieperen
Ian McKenzie
Henry Bruns



Ian McKenzie at the entrance of Tragadero Puyo photo by Henry Bruns

This was the final of three expeditions into this area. The 2004 expedition hoped to deepen Sima Pumacocha which, at -638m, was already the deepest in South America, but also had the secondary objectives of exploring the very high Qaqa Mach'ay, various caves within the Puyo valley, and improving the stock of in-cave photographs. Seven cavers from Britain, four from Canada (Henry Bruns, Mark Hassell, Ian McKenzie and Taco van Ieperen) and three from Peru met in Lima on September 5 and stayed in the field for two to three weeks.

Sima Pumacocha

Taco Van Ieperen

Sima Pumacocha lies in a small gully right at the limestone contact. There are 3 entrances. The first one had been too wet in previous years, and the third one was a blind shaft. The second one, imaginatively called SP2, was our objective.

Slightly uphill from the caves is a small lake. In the past the stream that came from this lake had drained directly into SP1. This year the local shepherds had repaired an aqueduct to keep some of the water on the surface, which led to SP1 being much drier than

in the past. Unfortunately, it also led to SP2 being much wetter as the aqueduct leaked badly and water poured from it into a variety of small holes that soon connected to the main cave.

Since we had ten people to rig one cave, the team split into two and rigged the newly dry (and unexplored) SP1 entrance as well as the SP2 entrance. I had run into serious problems with the altitude on my first day so I took it easy on my first trip into the cave. Getting altitude problems in a cave is pretty much a worst-case scenario. The only cure for altitude sickness is to go to a lower elevation as quickly as possible. In a cave, the only way out is by climbing up to a higher elevation first. It was a dangerous game and one I wanted to be careful with.

The cave was spacious but not very pleasant. It was little more than one extended pitch. Horizontal sections were few and far between. The pitches were extremely wet and my suit was soon soaked. The mist and dark limestone sucked up my light, so even though the passage was very big there wasn't much to see in the gloom. Since there were five people on this rigging trip, I simply dropped off my

SIMA PUMACOCHA

Laraos, Yauyos District, Peru

Entrance Locations

SP1

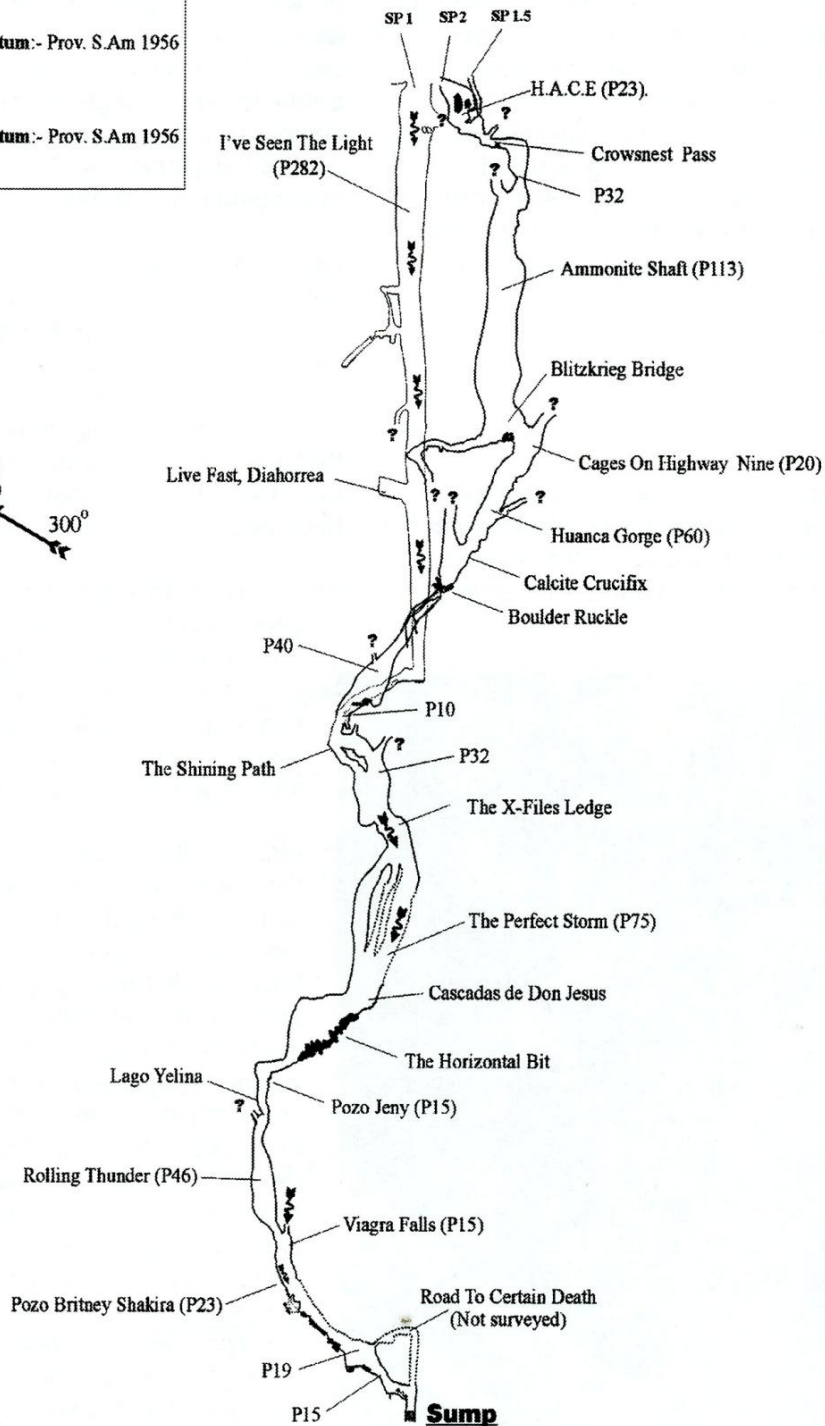
E 424265, N 8630547. Datum:- Prov. S.Am 1956
Altitude: 4378m

SP2

E 424208, N 8630500. Datum:- Prov. S.Am 1956
Altitude: 4375m

North
(Mag)
300°

Entrances



SP 2 to Sump

BCRA Grade: Grade 4 (Entrance to base of Ammonite Shaft)
Grade 5c (Base of Ammonite Shaft to Sump)

Date: June 2001 & September 2002

Drawn By: Rob Harper (2002) Updated: Madphil Rowsell (2004)

Surveyed By: Rob Harper (BEC), Mark Hassell (ASS),
Nick Hawkes (BEC), Tony Jarrait (BEC), Peter MacNab (BEC),
Ian McKenzie (ASS), Matt Tuck (BEC)

Depth: 638m

Length: 1427m

SP 1 to Shining Path

BCRA Grade: 5c

Date: September 2004

Drawn By: Madphil Rowsell (2004)

Surveyed By: Tom Chapman (BEC), Martin Holroyd (NCC)
Madphil Rowsell (BEC)

load of ropes at -300m and headed back to the surface, carefully scanning for any sign of a headache.

After a week of rigging trips the bottom of the cave was reached. The bottom section of the cave was extremely exciting river cave and much more entertaining than the top bit. Unfortunately, the huge side lead that sucked all the air turned out to be a horrible muddy oxbow which popped immediately back into the sump, which was now drained but completely gravelled in. The cave was finished. All was not in vain though, as the SP1 group had explored a very impressive (and wet) 282m pitch which connected near the X-Files ledge in the main cave. This is now the deepest single drop in the Andes.

Qaqa Mach'ay

Ian McKenzie

Thirty-year-old topo sheets show the horseshoe-shaped Cerro Huampuna mantled by glaciers, but not a bit of them remains. An unusual cliff below the west peak had been spotted in 2002 while driving



Qaqa Mach'ay entrance photo by Ian McKenzie

over a high pass during a recce trip, and the last few steps of a twenty-minute walk up suddenly revealed a gaping hole fifty by thirty metres wide and fifty metres deep with a 20m by 20m square passage visible at the bottom. Nick, Snablet and Juan had returned a few days later and rigged the entrance. The so-called passage was immediately choked by a heap of boulders and rubble, but the left wall was wide open and dropped away, as did a modest passage at the back of the main passage/room. Both required rope before leaving daylight, and both routes were complicated by masses of ice, so that was the end of the 2002 explorations. The name Cliff Cave sounds much better in Quechua.

Qaqa Mach'ay and the Alis Springs resurgence are 1600 vertical metres apart and at opposite ends of a 20km long band of limestone, with Sima Pumacocha inbetween. Qaqa Mach'ay is 550 metres higher than Sima Pumacocha, which might neatly explain Pumacocha's exhaling draught. But even without all that, Qaqa Mach'ay was certainly interesting in its own right; at 4930m above sealevel it could well become the highest surveyed cave in the world.

All these thoughts gnawed at me thru the intervening years until I signed onto the 2004 expedition. Sima Pumacocha might have been the primary objective, but the big draw for me was Qaqa Mach'ay. I brought a selection of ice-screws and snargs - if anyone knew how to deal with high-altitude ice caves, it was the Canadians.

Monday, September 6 2004 – our first full day in the Andes, and off we go to visit Qaqa Mach'ay. To hell with altitude acclimatization. Taco and Henry recce round the Huampuna cirque while Nick, Martin and I rig the big entrance. Nick looks at the back lead while Martin and I have a poke at the left lead, rigging the first 20m pitch off chocks wedged into a convenient crack and rebelaying twice off ice screws. A few metres further we encounter a second, 10m pitch at the limit of daylight, and rig off a boulder with an ice-screw deflection into a small ice-floored chamber. The passage is getting smaller, and colder as we go... with still no appreciable draught. Martin mumbles complaints about both the cold and the altitude... *"me lips 'ave turned blue!"* ...and while we're rigging a small icy hole in the floor, Nick appears with news that the surface team is not faring well, and that it has begun to snow.

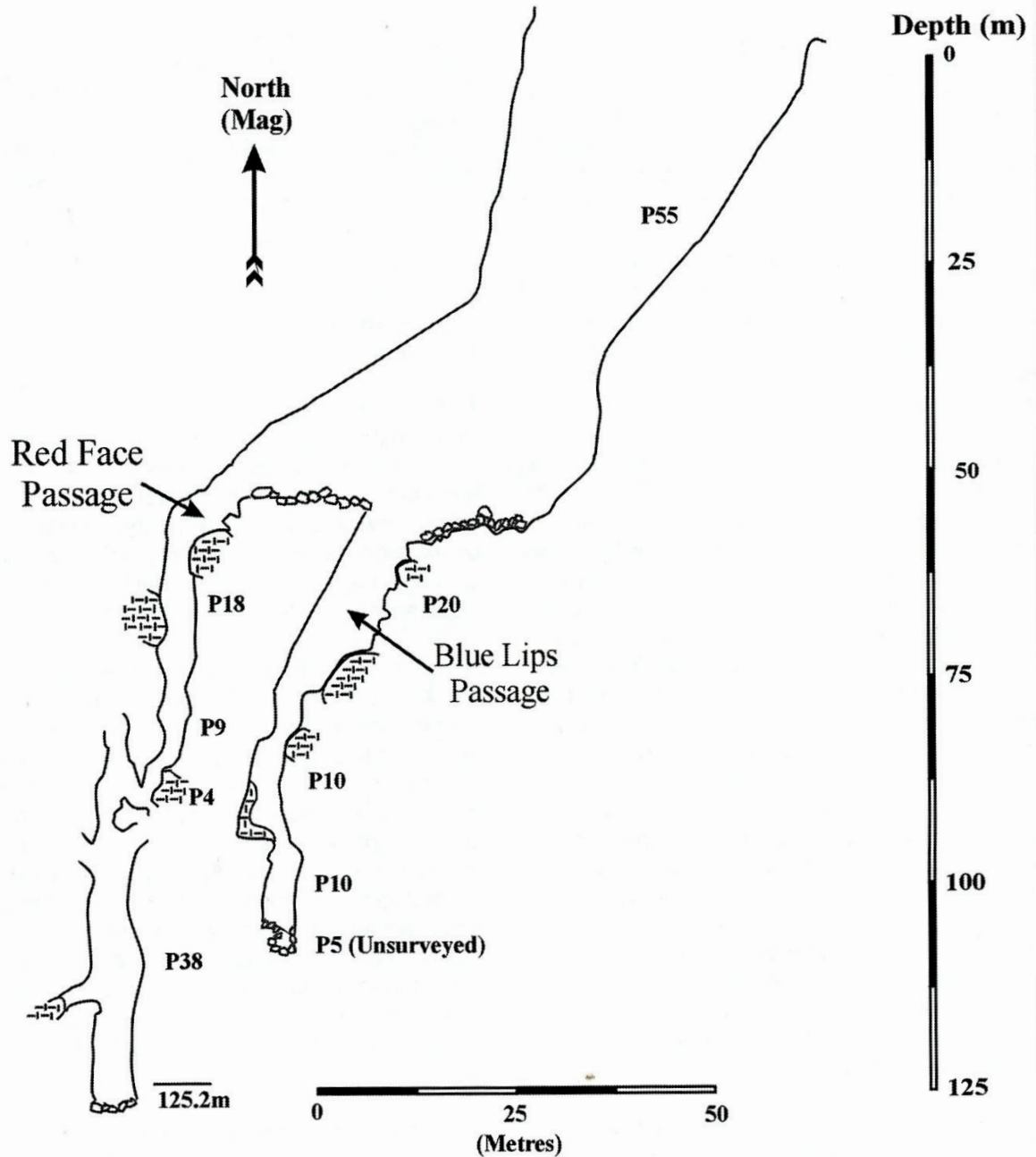
The huge entrance sink has been transformed into a wintry scene, and it's a struggle ascending out. As if the altitude isn't enough, snow gloms onto the warm rope denying purchase to our

Qaqa Mach'ay

Yauyos District, Peru

UTM: E0426903, N8625382. Datum: Prov. S.Am. 1956

Altitude: 4930m



Drawn By: Ian McKenzie (ASS)

Surveyed By:

Henry Bruns (ASS), Chris Densham (OUCC), Martin Holroyd (NCC),

Nick Hawkes (BEC), Ian McKenzie (ASS) (Sept 2004)

Depth: 125.2 m

Length: 300.1 m

BCRA Grade: 5c

Symbols: U.I.S. 1999

ascenders. We hurry back to the truck and, worried that the snow will make the narrow road slippery, select a Canadian to drive. Taco continues offering his breakfast up for group reinspection, so the drive down is doubly cautious.

We try again the next day, driving through a transformed landscape with all the duns and greys turned to white. The Toyota gets stuck near the pass, and we shovel snow aside so the tires can grip the muddy track.

Henry and I survey in while Martin and Nick finish rigging the icy hole. A 10m drop onto a boulder floor is followed by a 5m handlined climbdown amongst boulders, a disappointing but non-unexpected end at just over 100m depth. Henry and I lower the tape down thru the ice hole, then become the detackling team. Martin and Nick begin to rig the other route, lining over clear ice masses and bolting partway down a deep shaft split by a frozen-in-place block the size of a minivan. Reports of resumed snowfall cut short the exploration and we beat another hasty retreat down the mountain. What happened to the dry season?

We are keen to head up again the very next day; the Pumacocha teams are still rerigging old ground, but we're into the new stuff. The sun beaming through the thin air and reflecting off the fresh snow burns our faces bright-red, something we don't notice until we feel them glow in the cool of the underground. This time Henry and I take the lead, rigging off naturals and ice screws while Nick, Chris and Martin survey. We pass the block that splits the pitch into 18m and 9m segments, then follow a tongue of ice thru a low spot round a corner and down a 4m ice slide and past some tight holes to space below... a short stoop brings us to a balcony overlooking a big pitch. We manage a few more natural anchors and place a rope-pad on an edge (much tut-tutting from the Brits, who later place a bolt here). This impressive pitch starts out alright, but towards the bottom much of the rock has a veneer of ice and later a coating of cold mud. Chris and Martin are the first ones down to the bottom, blind at -125m but with one lead high off the floor that might be swung into, some other time. We retreat to yet more fresh snow.

A mysterious, violent stomach-and-arsehole ailment thins out the available expedition personnel, and it's not until Saturday September 11 that a team returns to Qaqa Mach'ay. By then it has finally stopped snowing up high. Nick, Martin and Snablet are joined by our Peru contingent of Jhon and Edwards, while I deplete the expedition toilet paper supply next to the truck. Snablet begins to feel ill again partway into the

cave, but clenches and perseveres. Martin traverses nervously on ice and nubbins and places a bolt while held by only a skyhook, then traverses again to a spike, places another bolt and achieves the side-lead. It quickly ends after one short survey station, at which point Martin begins the now-familiar process of wrenching and shitting and retreats with sphincter tightly clamped. The others finish the survey before detackling, and Qaqa Mach'ay is not visited again.

Our research through the internet contacting cavers in Pakistan, the Ukraine, Spain, France, Peru, Brazil etc. turns up limited data, and nothing to challenge the contention that Qaqa Mach'ay is the highest surveyed cave in the world. We know of a higher cave reported by climbers on Nanga Parbat in the 1960s, but it has never been visited by cavers. The chokes in Qaqa Mach'ay are disappointing but convincing; if there is a master cave, we'll never see it through her.

Puyo Area Caves

Henry Bruns

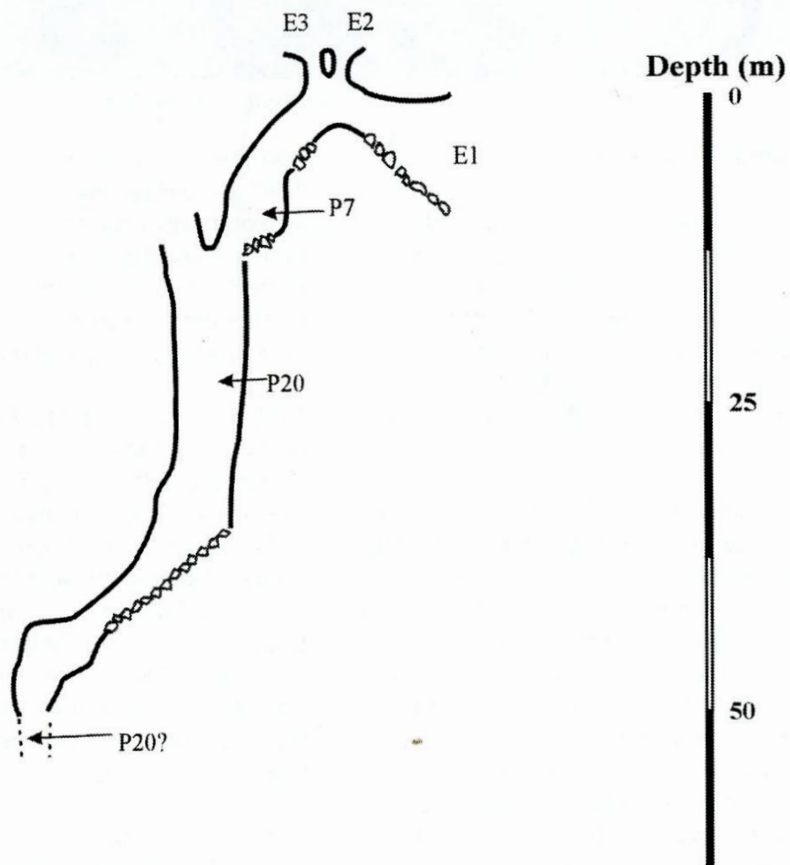
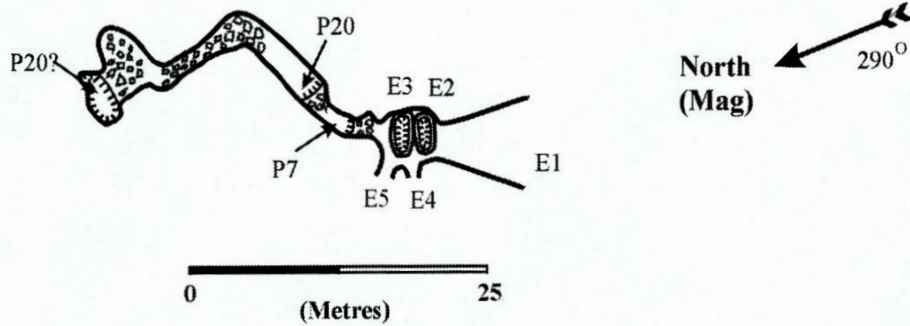
As most other major leads and caves in the Pumacocha area were either now completed or were fully manned, a group of us elected to explore an attractive looking area northeast of there. The topos for the new area showed a number of closed depressions, as well as a "tragadero" (swill-hole). Geology maps in combination with the topos indicated some interesting possibilities.

Nick, Ian, Jhon, Edwards and I loaded up the little Toyota and drove for a few hours to get to the start of the hike, a few metres down the road from a small farm. We arranged to hide our vehicle between two of the farmer's buildings, as theft is an abiding concern in the area. The initial part of the hike was steep but mercifully short, after which we were on mostly flat or gradual terrain. We came close to several llama and alpaca herds, stopping for pics and rests. About half way in, we met a shepherd and his family – he offered to take us to the cave, noting along the way that he will not permit his children to go anywhere near it, but he seemed curious about what we planned to do. It took two hours to hike to the caves.

We set up camp after inspecting the tragadero – it had been seen the previous year, but was taking a lot of water at that time. Now, it appeared to be a pretty modest amount of water trickling into a dramatic fluted pit. We went to work rigging – Nick led the way, with Ian behind, surveying. I joined a little later for surveying while Nick rigged. There was ice and snow in the entrance area, which contrasted very

Cueva Puyo

Yauyos District, Peru



Length: 58.81m

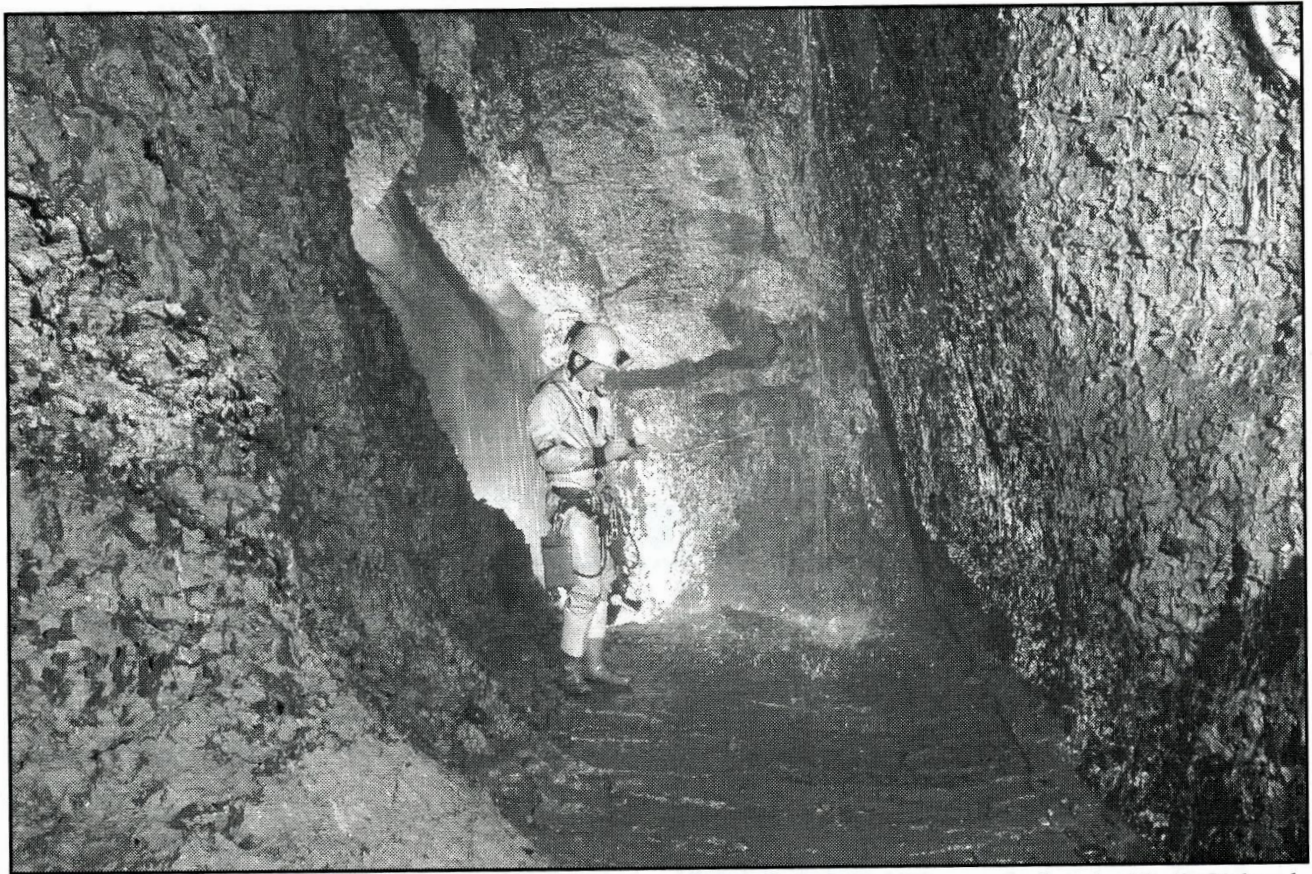
Depth: 48.3m

BCRA Grade: 5c

Symbols: U.I.S. 1999

Drawn By: Ian McKenzie (ASS) & Henry Bruns (ASS)

Surveyed By: Henry Bruns (ASS), Nick Hawkes (BEC);
(Sept 2004)



Bottom of ~~Sima Pumacocha~~
P 282 photo by Martin Holroyd

nicely with the waterfall and green mosses.

After the first couple of pitches, we went ahead through some flat, gravel-floored chambers, which were indicative of occasional pooling of water – this led to a small pitch into a chamber, which had a narrow horizontal fissure leading from it – the way on was feasible, but we were not sure about the return – looked very awkward! We decided to consider it over dinner.

Jhon and Edwards had gone scouting, returning near dark with excited tales of “golondrias” and other large entrances nearby. We went to bed fairly early, but it was very cold, and between that and the altitude, our sleep was pretty sketchy that night. I found it interesting (and a bit disconcerting) that even resting comfortably in a warm sleeping bag, my heart rate never went *below* 85 bpm – normally, my ticker clocks over at about 50-60 at lower altitudes. Another symptom of high altitudes was extreme drying of skin and mucous membranes. Chapstick and hand lotions proved essential to fight this, but in the end, it’s a losing battle.

Back in the cave the next morning, after working with the hammer to allow easier passage in the fissure, we decided it was better to leave this to skinnier/

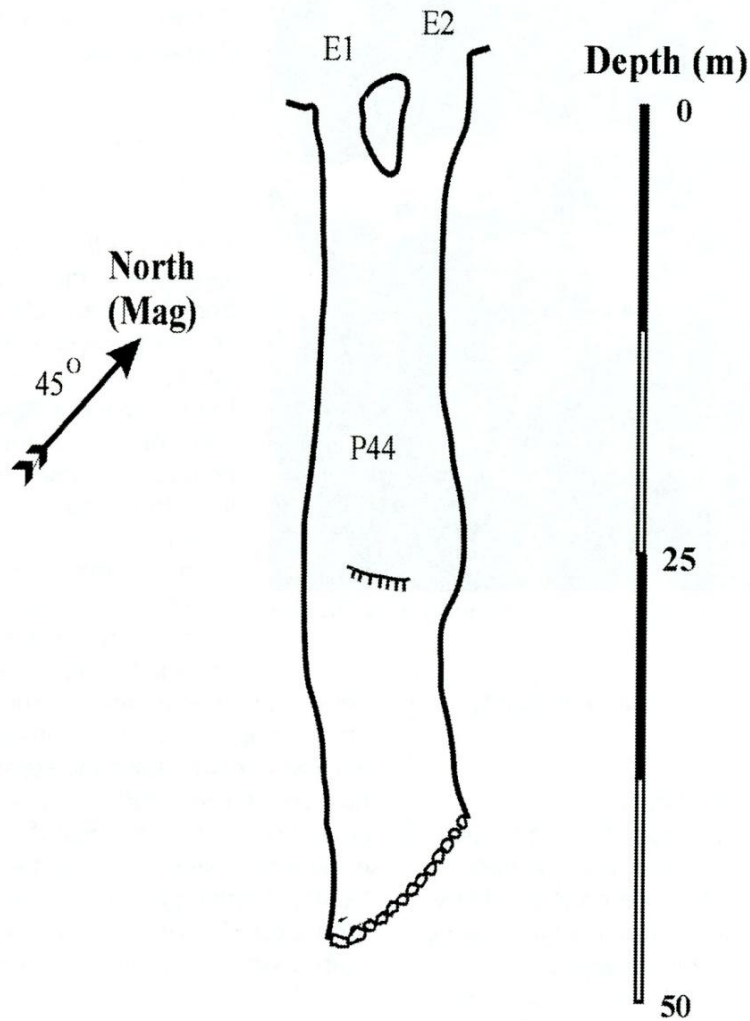
hungrier cavers and bailed. Besides, right next to Tragadero Puyo was a pair of vertical holes that looked pretty promising. The two holes quickly joined into one vertical shaft – Ian and I dropped what turned out to be a blind 45m pitch, no doubt connected to Tragadero, but impassable. It was surveyed, photo’d, and named Pozo Waqtanpi.

Nick, Jhon, Edwards and I then moved on to an unlikely looking entrance no more than 100m from Tragadero, while Ian did some recce both ways along the valley. The unlikely entrance, called Cueva Puyo, about 15 m above the valley floor, turned out to be 5 entrances, all clustered near the main one. Jhon and Edwards rigged in, starting with using a rock bridge between two of the entrances. Nick and I surveyed behind. This cave proved a little different than the others, in that it seemed to cut across the layers of rock, vs. following the (mostly) vertical beds like the other caves.

After a couple of short near-vertical drops, we reached a 25m pitch into a very nice large chamber with a sloped gravel floor. This pinched down to a narrow sloping rift at the bottom, which then dropped into a 6 x 10m room with another pitch at its edge. Rocks took a full two second count before hitting and rolling on for a short bit. Unfortunately, this is where

Pozo Waqtanpi

Yauyos District, Peru



Depth: 45m

BCRA Grade: 5a

Symbols: U.I.S. 1999

Drawn By: Ian McKenzie (ASS)

Surveyed By: Henry Bruns (ASS), Nick Hawkes (BEC), Ian McKenzie (ASS); (Sept 2004)



Tragadero Puyo photo by Nick Hawkes

we ran out of bolting supplies, so we reluctantly bailed.

As we had few further vertical options for exploration in the area, we headed back to Llapay, where we found out that Sima Pumacocha had been bottomed, and the bottom de-rigged. A fairly large team helped de-rig the rest of the cave, using a “paella” technique – basically several people hauling several ropes attached together, piling it up much as you would stuff a rope sack, and then attaching the top of the pile to the next tail of rope on the next pitch, and repeating. This only works in mostly vertical caves. After the de-rig, Ian, Nick and I had to head back to Lima.

A few days later the remaining team members went into the Puyo area, taking a different route in by truck to explore limestones further south-east first. Of four opportunities there, “CS2” was the only one still going, but with no draft. The rest choked out. Some other entrances were also noted with GPS

locations. The next day Chris and Peter entered Tragadero Puyo, getting through the snug/awkward rift after some fussing, and found another few smaller pitches beyond, with some promise of further potential, but not a good return on the effort. By the time they exited the cave, it was dark and there was no time left for continuing Cueva Puyo – had to leave something for another trip! Martin and Chris visited a shaft found by Ian a week earlier, and fully explored and named La Cueva de la Cuerna.

Surface Explorations near Sima

Pumacocha

Taco Van Ieperen

In the course of the 2004 expedition some fairly extensive recce work was done in the limestones near Sima Pumacocha.

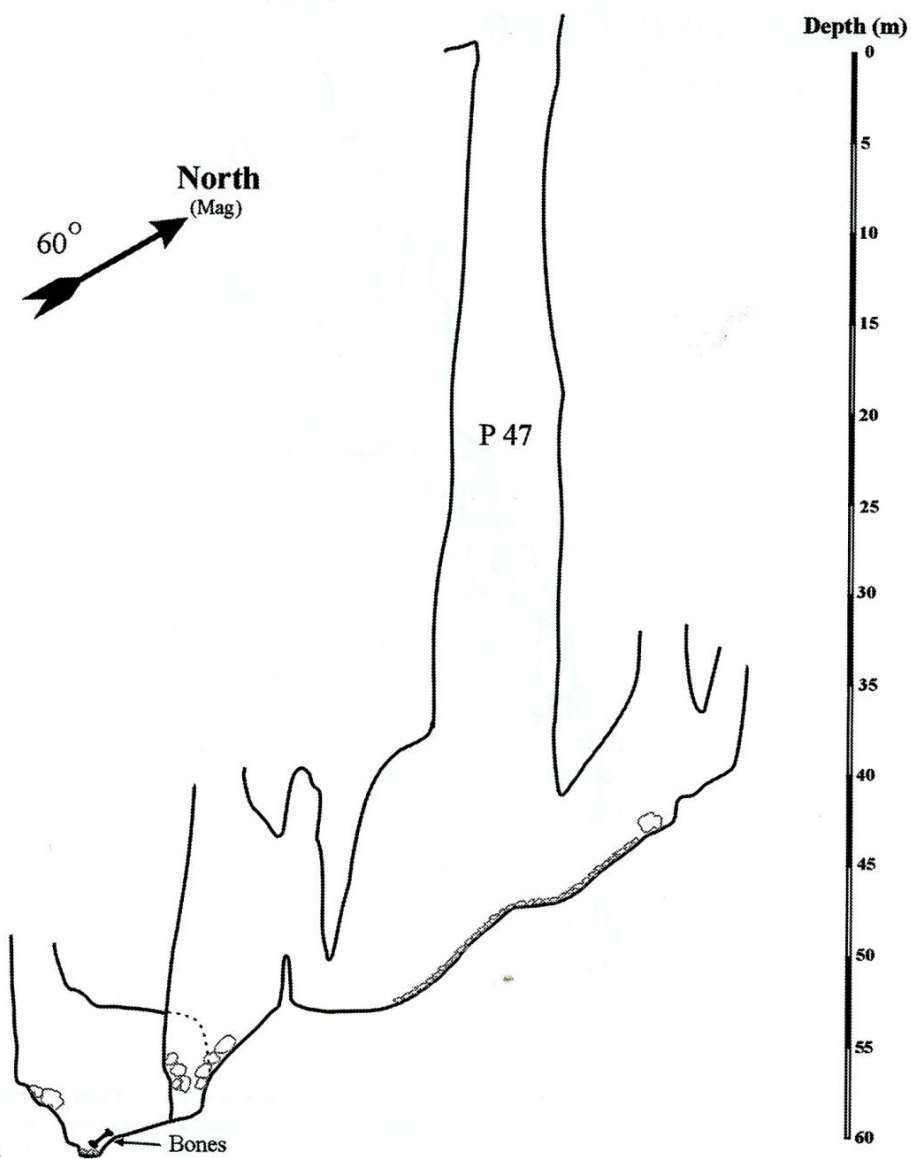
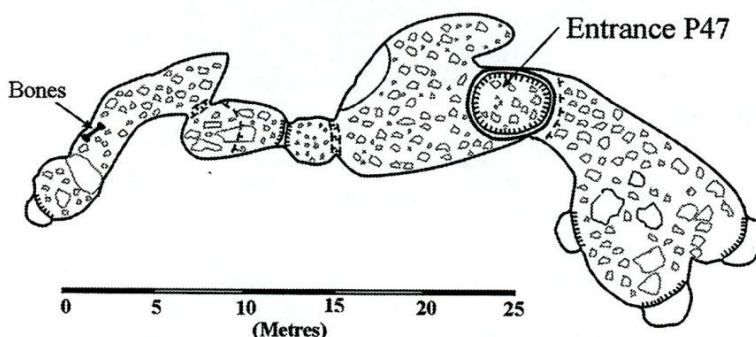
The first of these recces was in a valley just north of the village of Laraos. Locals from the village claimed that there were a couple of caves about two hours walk above town. Taco, Ian, Pete and Chris found a guide who led us up an excellent trail which ran steeply uphill. After about an hour it intersected some vertical limestone beds on the right hand side, too steep to climb from the bottom. A short distance further up the valley we went directly up the right hand side until we intersected the summit ridge of the mountain. From the summit ridge we

descended past an ancient ruined watchtower and onto the upper part of the limestone. We then worked our way down the steep limestone to a number of nice-sized entrances. While there was clearly some cave formation going on, the limestone is extremely steeply bedded and it seems to be lacking anything to concentrate the water enough to form a good cave. Peter dropped a couple of entrances but did not find anything worth returning to.

Henry and Taco spent a day exploring the mountain ridge to the north of Pumacocha. We followed a 4x4 track into a valley, which had a lot of wonderful looking rock that appeared to be limestone from a distance, but was actually granite. The 4x4 track took us almost to the summit of the peak, whereupon we encountered the limestone again. We spent some time hiking the summit ridge and looking at holes but did not find anything worthwhile. Taco returned to the cave entrance by descending from the summit. There were numerous interesting looking holes but all of them turned out to be short shatter

La Cueva de la Cuerna

Yauyos District, Peru



BCRA Grade: 5c

Symbols: U.I.S. 1999

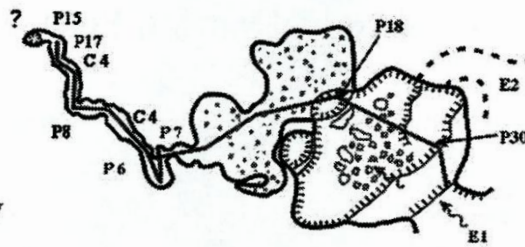
Drawn By: Madphil Rowsell

Surveyed By: Martin Holroyd (NCC), Madphil Rowsell(BEC), 20/09/04

Survey Depth: 57.5 m

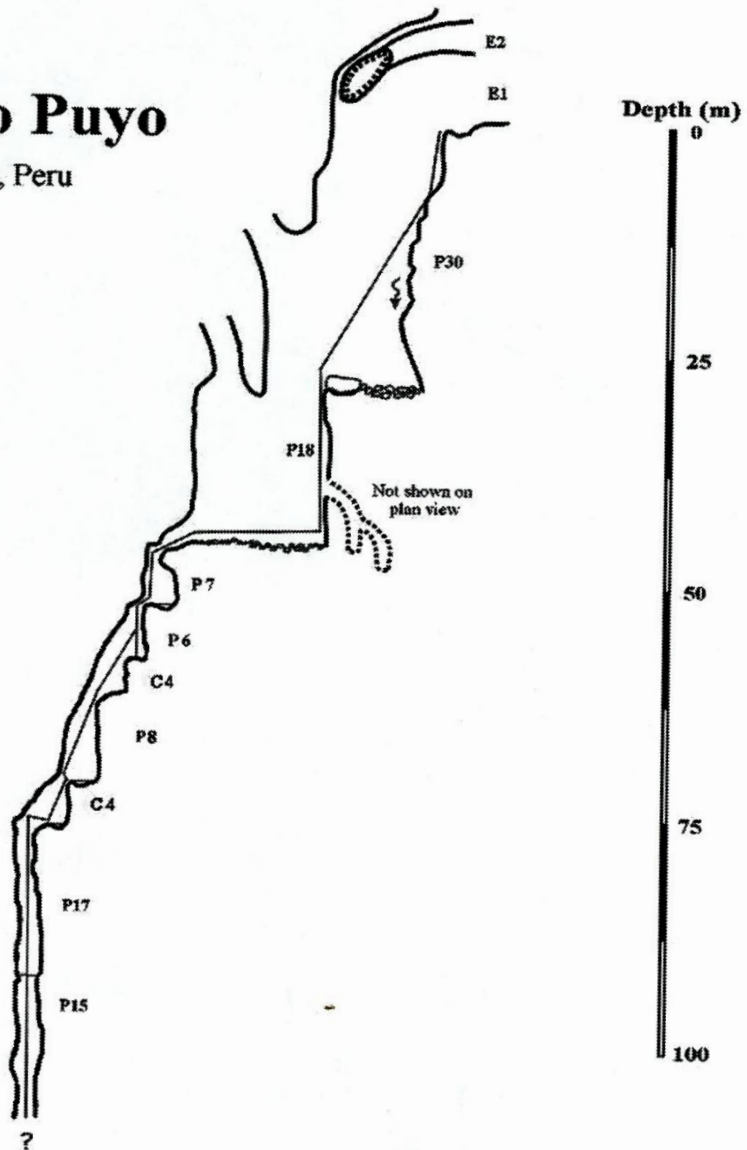
Survey Length: 101.3 m

Plan View



Tragadero Puyo

Yauyos District, Peru



BCRA Grade: 5c

Length: 147.4m

Depth: 107m

Drawn By:- Ian McKenzie (ASS) Chris Densham (OUCC)

Surveyed By:- Ian McKenzie (ASS), Nick Hawkes (BEC).

Chris Densham (OUCC), Pete Whitaker (WRPC)

pockets. There was little sign of any significant cave development on this side of the valley.

Another team drove southeast from Pumacocha to the San Valentin mine, and did a walk of several hours into the mountains, noting some entrances but nothing promising.

Ian checked out a huge pocket visible from the Pumacocha road junction, then followed the contact margin south for 5km to the end of limestone and back. Apart from being bitten by a dog, nothing memorable was reported.

Finally, Taco did a recce trip from Pumacocha back to Laraos along the valley bottom. The valley gets quite narrow in places and has some fine Inca steps. There are few small sections of what appears to be limestone in the cliffs above but there are no caves.

Conclusion
McKenzie

Ian

At first glance one would think that the deep-cave potential of the Andes is enormous, but

discoveries over the past thirty-five years of explorations have been relatively modest. It remains to be seen whether other high-altitude deep caves exist or if Sima Pumacocha is unique.

My fondest memories are of the Puyo valley, a high treeless 'puna' that is beautiful and peaceful if somewhat stark. The night sky was filled with strange constellations, startlingly clear and brilliant through the thin cold air and far from artificial light pollution. As we shivered in our sleeping bags, a pair of Andean Ibises roosting in Tragadero Puyo seemed pleased at how the cave amplified their chimpanzee-like hoots down through the valley.

Further information on the Pumacocha project may be found on the expedition website:
<http://members.shaw.ca/pumacocha> .

Video footage shot by an expedition member is being included into a British TV program which may appear on cable nature or adventure channels.

Pumacocha 2004 was:

Greg Brock	Bristol Exploration Club
Henry Bruns	Alberta Speleological Society
Jhon Huaman Canchanya	Centro de Exploraciones Subterranas del Peru
Tom Chapman	Westminster Speleological Group
Chris Densham	Oxford University Caving Club
Mark Hassell	Alberta Speleological Society
Nick Hawkes	Bristol Exploration Club
Martin Holroyd	Northern Caving Club
Taco van Ieperen	Alberta Speleological Society
Peter (Snablet) MacNab	Bristol Exploration Club
Ian McKenzie	Alberta Speleological Society
Mad Phil Rowsell	Bristol Exploration Club
Edwards Humberto Espinoza Tara	Centro de Exploraciones Subterranas del Peru
Peter Whitaker	White Rose Pothole Club

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