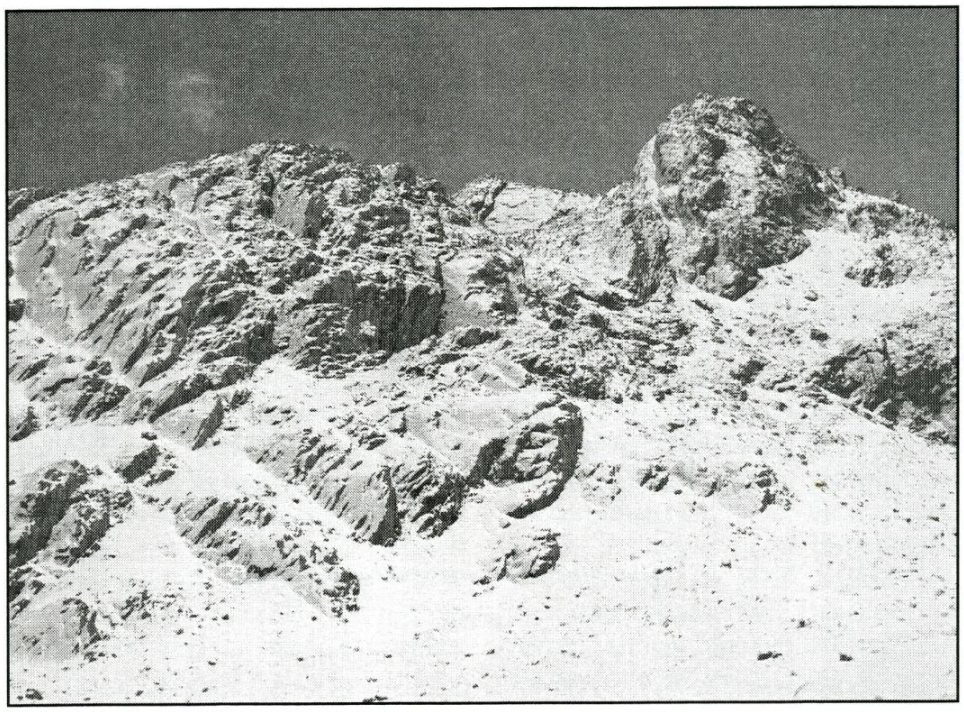
A HOLE IN THE SKY

by Ian McKenzie

Even after two completely successful expeditions in 2001 and 2002, there were still reasons to go back to central Peru. The main one was an unchecked lead near the sump in Sima Pumacocha, already the deepest cave in South America. But there were other tantalizing prospects – including Qaqa Mach'ay. From the moment I saw Qaqa Mach'ay I knew I wanted to come back to her.

Here's the thing: at 4,930 m above sealevel, the entrance to Qaqa Mach'ay is over 500 m above Sima Pumacocha. A higher entrance would explain Pumacocha's exhaling draught, and would make the system at least 1,200 m deep. To hope for a connection to Sima Pumacocha might be wishful thinking, but Qaqa Mach'ay was also interesting in its own right; if there were any passages at all beyond its huge entrance, it would become the highest surveyed cave in the world. This thought gnawed at me through two caveless Canadian winters until the final expedition was ready to go.

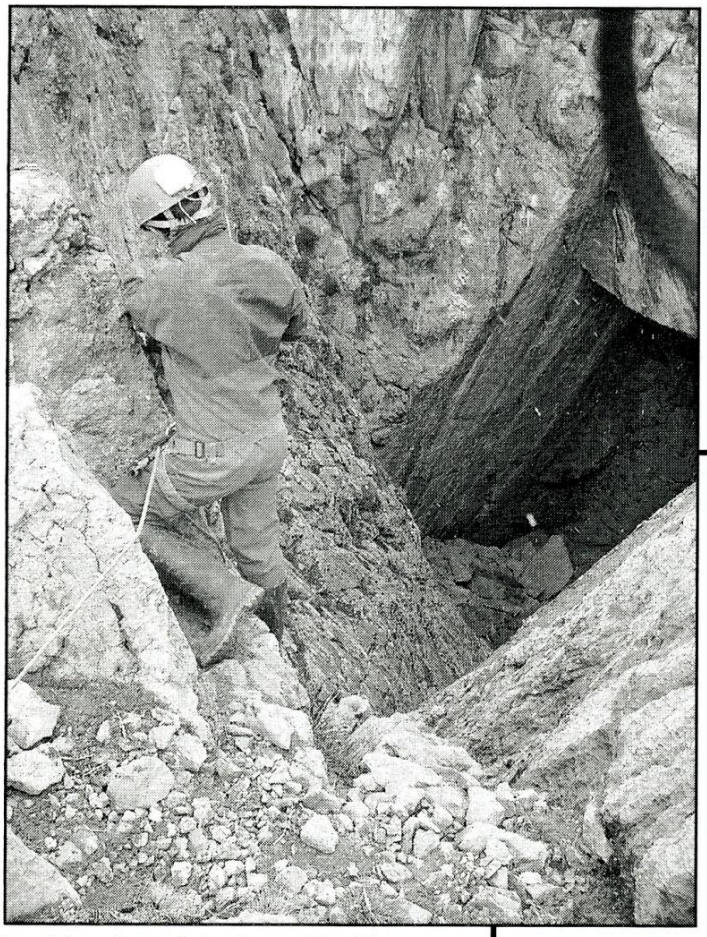
Our team of British, Canadian, and Peruvian cavers assembled in Lima on September 5, 2004, where we loaded the trucks for the long drive into the high Andes. The next day, five of us left base camp to drive up towards Cerro Huampuna, the southernmost limestone peak in our project area. Taco Van Ieperen and Henry Bruns walked around the cirque, marveling that not a bit of the extensive glaciers shown on thirty-year-old topo sheets remained. Nick Hawkes, Martin Holroyd, and I headed directly up towards the unusual cliff ('qaqa' in the Quechua language) in Huampuna's west peak, at the base of which was suddenly revealed the gaping void of Qaqa Mach'ay, 50x30 m wide and 50 m deep. We already knew that the 20x20 m, square-shaped passage visible at the bottom ended in boulders and rubble, still in daylight, but there were gaps at the left wall and at the back that were wide open and dropping away. We dumped our kit, caught our breath, and changed into our caving gear.



Cerro Huampuna, Qaqa Mach'ay entrance in center of photo. Photo by Henry Bruns.

Nick tied off to a pillar and set a bolt, then Martin descended the steep corner, rebelaying off bolts and chocks down to the bottom of the big entrance sink. While Nick looked at the back lead, Martin and I clambered over boulders towards the left wall. C'mon, baby! It looked to be about 20 m down a jammed mess of stacked boulders, with only the far wall being bedrock. We rigged off chocks wedged into a convenient crack, and rebelayed twice off Snargs hammered into banded ice masses. The whole thing looked as though it might shut down, but a few meters further on we encountered another pitch at the limit of daylight. We tied off a boulder, deflected off an ice-screw, and dropped 10 m into a small, cold, ice-floored chamber. The passage had been getting smaller and colder the further we went with still no appreciable draught. Martin was clearly feeling the effects of both the cold and the thin air, and he joked in his Yorkshire accent about his lips turning blue. While we were rigging a small icy hole in the floor, Nick appeared with news that the surface team was struggling with the altitude and wanted to get off the mountain, and that it had begun to snow.

We returned to find that the huge entrance sink had been transformed into a wintry scene. As if the thin air was not enough, snow had frozen onto the warm rope and denied purchase to our ascenders, and we emerged breathless back onto the surface. We hurried down to the truck where the others were waiting. As we



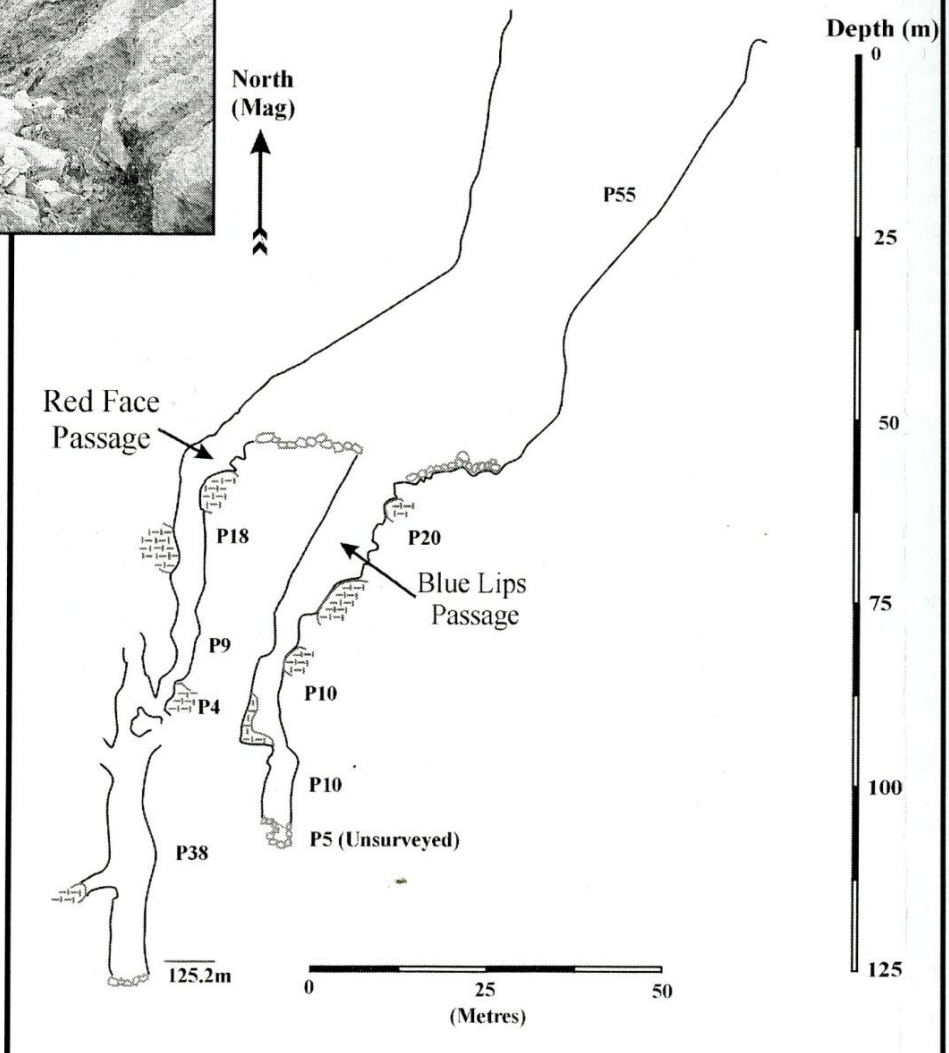
Looking down into Qaqa Mach'ay entrance. Photo by Ian McKenzie.

Qaqa Mach'ay

Yauyos District, Peru

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

Altitude: 4930m



Drawn By: Ian McKenzie (ASS)

Surveyed By:

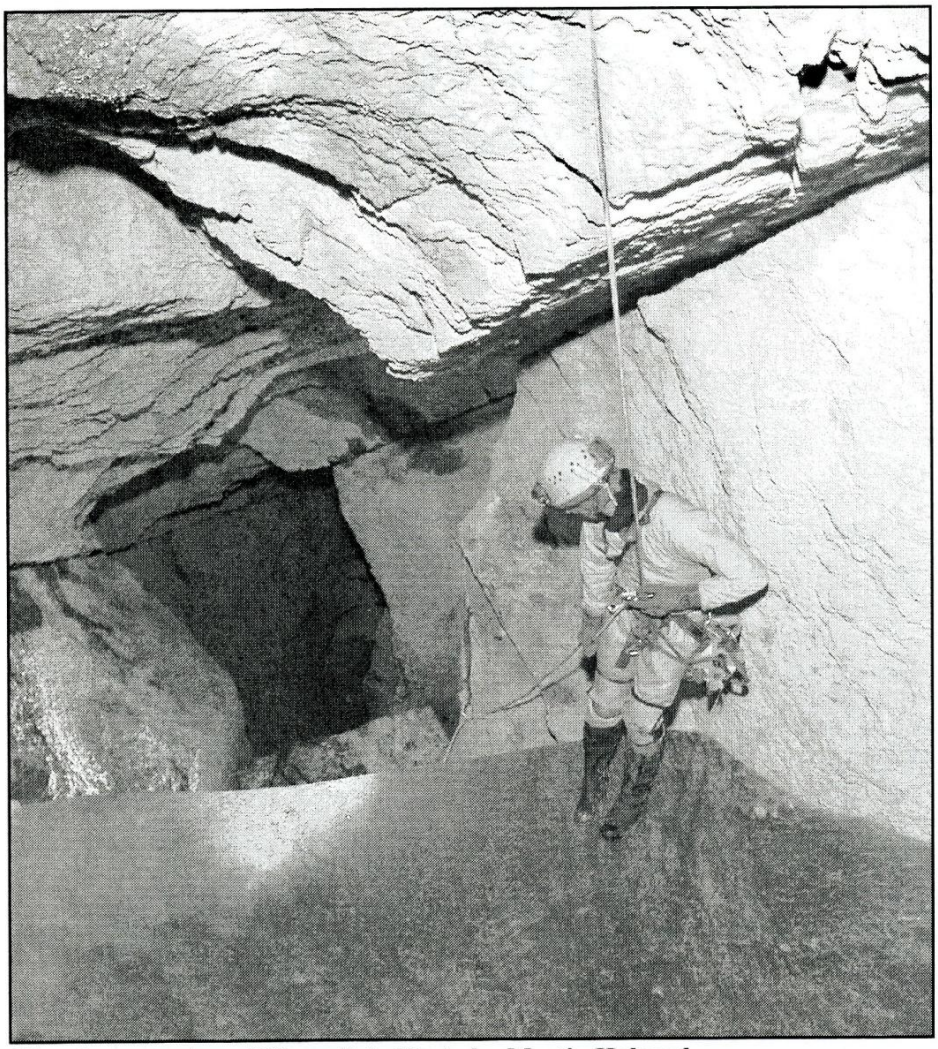
Henry Bruns (ASS), Chris Densham (OUCC), Martin Holroyd (NCC), Nick Hawkes (BEC), Ian McKenzie (ASS) (Sept 2004)

Depth: 125.2 m

Length: 300.1 m

BCRA Grade: 5c

Symbols: U.I.S. 1999



Clear ice mass, top of 18 m pitch. Photo by Martin Holroyd.

stripped off our harnesses and oversuits, Taco periodically turned to vomit onto the pristine snow; the Technicolor Yawn. We cautiously drove down the narrow, slippery track to snowline, then bumped our way back to base camp.

The next day, a slightly smaller team drove back up through a transformed landscape, where all the duns and greys had turned to white. The truck got stuck near the pass, and we shoveled snow aside so the tires could grip the muddy track. What happened to the dry season?

We soon were back where we had left off. Henry and I surveyed while Martin and Nick finished rigging the icy hole. A 10 m drop was followed by a 5 m handlined climbdown among jammed boulders to a disappointing but not unexpected end at just over -100 m depth but only 25 m from daylight. Henry and I finished the survey, then derigged while Martin and Nick headed back to the entrance chamber to rig the other route. They had lined over clear ice masses and bolted partway down a deep bedrock shaft, when reports of resumed snowfall cut short the exploration and we beat another hasty retreat down the mountain.

After a good meal and a pleasant night in base camp, we were keen to head up again—the Pumacocha guys were still rerigging old ground, but we were into new stuff. The sun beaming through the thin air and reflecting off the fresh snow burned our faces bright-red, something we did not notice until we felt them glowing fiercely in the cool of the underground. This time Henry and I took the lead while Nick, Martin, and Chris Densham surveyed. Ahh now, this felt like real cave. We passed a frozen-in-place block the size of a minivan that split the pitch into 18 m and 9 m segments, then followed a few meters of canyon to an ice floor and a constriction. Using a boulder and an ice-screw, we lined through the low spot, around a corner and down a 4 m ice slide. Then a short stoop brought us to a balcony overlooking a spacious pitch. We tied to a natural anchor and placed a rope-pad on an edge (much tut-tutting from the Brits, who later placed a bolt here). This impressive 38 m pitch started out fine, but near the bottom rebelaying was frustrated by a veneer of ice over a coating of cold mud. After rerigging a slightly different hang, Chris and Martin were the first to the bottom. The floor was choked with rubble and ice at -125 m, but there was one lead high off the floor that might be swung into but not today. We retreated to yet more fresh snow.

A mysterious stomach ailment, possibly from bad water or undercooked food, thinned out the available expedition personnel, so it was 3 days before a team returned to Qaqa Mach'ay. By then it had finally stopped snowing up high. Nick, Martin, and Snablet (Peter MacNab) were joined by our Peru contingent of Jhon Canchanya and Edwars Tara, while I depleted the expedition toilet paper supply behind the truck. Snablet began to feel nauseous again partway into the cave, but persevered. While on a dubious belay Martin traversed nervously on ice and nubbins and placed a bolt while held by only a skyhook, then traversed again to a spike, placed another bolt and reached the side-lead. It quickly ended after one short survey station, at which point Martin began retching and retreated with sphincter tightly clenched. The others finished the survey before derigging, and Qaqa Mach'ay was not visited again.

The chokes in Qaqa Mach'ay were disappointingly convincing; if there is a master cave below, we will never see it through her. Some of us headed off to other prospects, while the rest rejoined the Pumacocha team. Nevertheless we did retreat with a map of Qaqa Mach'ay, the highest cave survey in the world. There is only one known cave that is higher, on a peak near Nanga Parbat in Pakistan, but it has never been visited by cavers and remains unnamed and unsurveyed.

Details of all cave explorations are presented on the expedition website at http://members.shaw.ca/pumacocha