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* Tasmanian Caverneering Club *
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* 1988/89 PRECIPITOUS BLUFF EXPEDITION - Special Spiel Issue *
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Introduction to Part #1

The annual TCC exodus to Precipitous Bluff occurred over the Christmas/ New Year period - December 17th (1988) to January 6th (1989). The trip was immemnsely successful due to the participation of keen peoples from a number of clubs, other than our own. Previous TCC trips to the PB area in 1986 and 1987/88 suffered from a dearth of personnel, restricting the amount that could be done. This 1988/89 expedition was swelled by members of the Victorian Speleological Association and the Southern Caving Society and thus we were able to cover a great deal more ground: exploring, surveying, cave numbering, diving sumps and tracing water flow as well as conducting extensive faunal surveys in the caves.

The following narrative is one instalment of a two part series of the expedition, covering the discoveries and happenings occurring during the first half of the trip. Participating expeditioners during this first period were: Arthur Clarke, Stefan Eberhard, Stephen Bunton, Nick Hume, James Davis, Paul Baustead and Matt Johnson (all members of the Tasmanan Caverneering Club) plus Jeff Butt and Greg Jordan (from Southern Caving Society). Most of this first group left on or about December 27th, to be replaced by a second group of expeditioners including members of V.S.A.; the second group being the subject of the next instalment in the series.

This text has been culled from trip reports written on site in log-book form; these entries being heavily edited to make sense of what was essentially written from an insiders point of view. I'm still not sure that this has been achieved, even though draft copies were supplied to relevant participants for re-editing! Reference to the source of log-book reports is made throughout this epistle. I have added various karst interpretations to these, at the risk of being accused of "putting words into other peoples' mouths." It seemed the simpler thing to do! Claimable also, is the fact that I have "hogged the limelight" with much of the detail given. Naturally, as editor I can remember much more of the "goings-on" that I was personally involved with than those of others. This is not intended to denigrate any one person or group. Without equality of participation, the expedition would not have been as productive or enjoyable as it turned out to be.

Compiled and edited by Nick Hume [Typset and fauna additions by Arthur Clarke]

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Saturday - 17th December: **...like coming home.**

Cars were left at the Ida Bay Quarry, near Lune River, for the anticipated walk out some weeks hence. Arthur, Stef, Steve, Jim and Nick then travelled down to Cockle Creek to await the arrival of the Wilderness Air seaplane from its base at Port Arthur. Three cars were left "hidden" near shacks at Cockle Creek. Arrival of the seaplane was not immediate due to drizzle and a low cloud ceiling. By early afternoon things had lifted sufficiently for the plane to get in, pulling up on the main beach at Cockle, south of the boat ramp. The pilot (Graham Bird) and Edwin Clarke, Arthur's brother, collected Stef and a small load of gear, making the first of four "ferry" flights from Cockle Creek to *New River Lagoon*.

The seaplane returned within the hour, taking Arthur along with caving packs this time. A third ferry with just gear, followed. Finally the patient Steve, Jim and Nick were allowed their turn; arriving in the stirringly familiar landscape of *Precipitous Bluff*. Following "monetary transactions" in knee deep water, the departing pilot and Edwin were farewelled and culture-shock rapidly set in. Setting up camp and preparation of caving gear were haltingly begun.

Sunday - 18th December*: ...diving in *Cueva Blanca

Everyone helped carry diving gear up to *Cueva Blanca*. Arthur set about number tagging the cave [**PB-4**] using a cordless percussion drill, and moved cautiously through the entrance series on a fauna collecting exercise. The rest of us went on ahead, carefully circuiting decoration, to the site of the first pitch. Steve rigged this 25 metre drop, taking us down to the streamway and lake series in *Inundation*. A handline, beside the *Black Curtains* waterfall, helped us gain the upper level passage suspected of carrying the waters from *Bauhaus*. This is a very attractive piece of cave; deep swirlpools formed in a series of steps, with ever present speleothems impinging from above. Wet suits are a necessity here, and some few hundred metres of partial to full immersion were negotiated to the site of the sump.

Surface connected surveys have revealed the upstream sump in *Cueva Blanca*, to be separated from the downstream sump in *Bauhaus* by only some forty metres. The similar alignment of passages at both points, together with a bit of wishful thinking, led to the general belief that the surveys were in error and that the caves would prove to be much closer together. Thus it was anticipated that our dive would be a straightforward duck into *Bauhaus*.

Nick geared up with a fifteen and a thirty cubic foot air supply was assisted in the constricted space by Steve. The linereel was tied off to a wall and fed out in the descending passage below the sump headwall. An initial downward slope led the diver through a white colloid layer, to a sudden encounter with a mud bank. This was followed upward to clearer water and within sight of a flat-silver roof; disappointing in that it only heralded a shallow air pocket. Continuing further, the rift narrowed somewhat before coming back up to an even shallower airspace. Below this, the passage dropped away intriguingly on a more rightward bearing than before.

Unfortunately, this narrowed drammatically to a small tube; daunting to enter without suitable tie-offs. No opportunities for such were presented along the rotten rock of the walls, but a short foray was attempted. Wedged within this constriction, the diver soon lost all visibility in the chronic siltation. Added to that, slackened line formed a loop around the axle of the open linereel and it promptly jammed. A retreat was made to clearer waters to sort out the problem and the dive was aborted. Not using a closed linereel and failing to carry tie-off weights/ bags, underlined our lack of preparedness for the most serious penetration diving encountered. Total distance covered under-water was perhaps only 15 metres, in the narrow technical rift; the furthest point reached being about 7 metres deep. **(Source - Nick Hume).**

Meantime, Stefan had been busy capturing amphipods and the like, with drift-nets strung out along the *Black Curtains* streamway. Now it was his turn to have a dive; this time in the downstream lake series of *Inundation*, where the group re-assembled. The possibility here being a connection to *Damper Cave*; known from survey extrapolations to be within forty metres of this point.

Stef geared up and swam 10 metres along the final sump passage; tying off on the wall before making a descent. Below the waterline, the sump area enlarged to an exit possibility off to the right hand side. The diver went to 6 metres depth without touching bottom. Siltation from the walls made

orientation and further exploration impossible, (a bouyancy compensator would have been useful too), and again the dive was aborted. Checking the far end of the lake series revealed no underwater continuation there. Thus, waters apparently leave via a headwall, suggestive of south-easterly flow leading away from the shortest hypothetical route to *Damper*. **(Source - Stefan Eberhard)**

While explorations were carried out in the *Black Curtains* streamway, Arthur found some white troglomorphic symphylans and millipedes on the wet walls of the *Inundation* passage, downstream from the handline climb. Further downstream near the first lake, fragments of cave beetles and shells of hydrobiids (aquatic molluscs) were found amongst stream gravels. In the drier upper entrance series of decorated passage more invertebrate fauna were found: troglomorphic species including two different coloured **Zolinae** carabid beetles, millipedes, many symphylans, isopods, spiders, two different harvestmen and near the entrance some epigean (surface) isopods and terrestrial molluscs (land snails). [One of the harvestmen species is a **blind *Lomanella***, the second blind Triaenonychid harvestmen found in Tasmania (and Australia), one of only three blind species in the world. **(pers. comm. G. Hunt)**]. En route to base camp a permanent number tag was fixed over the painted "PB-1" inside the entrance of *Damper Cave*; used as reference for a later re-survey. **(Source - Arthur Clarke)**

***Monday - 19th December*: *Quetzacoatl Conduit*: the longest roof sniff in Australia!**

Following the previous day's lack of success, something more promising was decided upon for our next venture: *Quetzacoatl Conduit*. Several hundred metres of new passage was found here in 1986 (Speleo Spiel *237), with a major lead still continuing, and it would all require surveying. Paul Baustead and Matt Johnson had joined up with us the night before (having walked in from Melaleuca Inlet, near Port Davey) and Paul was still sufficiently energetic to go caving on the day.

We picked up the yellow/ blue-taped track, some 50 metres before the entrance to *Damper* (this isn't visible from the main overland track); this led to the blocked outflow cave: PB-2. Blue tapes beyond this, follow over a ridge to the correlate swallet on the other side. This was number tagged as PB-10; (formerly referred to as "PB-2a"). Immediately upstream from here is the major entrance (PB-3) of *Quetzal*; past which Arthur flagged a route with red tapes to connect surface breaks that give access to the same system; numbering: PB-11 (a series of multiple entrances at stream level) and PB-12 (a collapse entrance); some 200, and 250 metres further south of the PB-3 resurgence. Our preferred entry point was PB-11, *Divers Entrance*, requiring less immersion time in the streamway than doing the whole cave from PB-3. Lacking a wet suit, Arthur was limited to collecting fauna in the dry reaches of *Pendulum Palace*, accessing via the PB-12 walk-in entrance from the forest glade. Stef, Steve, Jim, Paul and Nick gladly donned wet suits to escape the mosquitoes and waded into the canal.

We traversed the short section of caved surveyed to CRG 5 by the 1973 party, bypassing the roof collapse via a swim on the left hand side of the passage. A short crawl through a low tube in blocks is still necessary. Tapes, immediately on the other side of this, marked the beginning of our own survey inward. Somme 100 metres from this point, the roof lowers to 10 centimetres above water (there is an absolutely howling draught); requiring resourcefulness to read survey instruments, and is the site pushed by Stef and Nick into major continuations on the 1986 trip. An all-out swim followed; dog paddling being the recommended method of propulsion. 400 metres of survey, in (7m wide by 1-2m high) swimming to wading type of passage, brought us to Stef's *Last Gasp Aven*. Beyond this, the canal became sustained very low-roof stuff; challenging, given our necessarily slow rate of progress. This continued for 200 metres before a respite in a roomy side-passage; the terminus of 1986 explorations. A return to the canal and yet more floundering, took us into virgin cave.

Shortly afterward, it became apparent that the canal was altering in character; stepped rock dams, feeder inlets and side chambers attested to the beginnings of a slope in the stream-passage. Eventually we got out of the water altogether in a respectable-sized breakdown room. At the end of this, the waters sumped. This was bypassed on the left via an ascending lead; bearing evidence of snail shells below an included aven. Turning rightward, the stream was regained on the immediate other side of the previously mentioned sump, through a further bypass, down a greasy rock slab, being necessary to regain the major continuation.

The cave now devolved to narrower and shallower passage as a number of unenterable feeders were passed. A terminus was reached after crawling into unstable rock fill within a rift. A draught was still present, but a risky dig would be required to extend further. Here, the inward survey was terminated. Steve pushed a side passage (50 or so metres before the end, on the left hand side) for 40 metres, attempting another bypass; This died in a mud/ gravel blockage, with a small stream emerging from under a wall (pers. comm. Steve Bunton).

The return swim to the entrance, unencumbered by tape and instruments, was an expedition highlight. Stef re-collecting various "bug" capture nets en-route. Some of us exited via the PB-11 (*Divers Entrance*) hole, keen to divest chafing wet suits. Others were keener and swam on through to the main (PB-3) resurgence. Time underground was about seven hours. In all, a traverse line of 1066 metres of new cave was put to book on this particular trip. Generally, it followed an easterly trend in water-filled, flat-roofed canal following the bedding plane. Survey extrapolations since, have placed the furthest point gained in *Quetzal*, as virtually right underneath the northward of two major surface depressions in the gully to the east of Elusive Bluff. (These features are indicated at 678/847 on the 1:25,000 Precipitous sheet.) Thus a surface connection is distinctly possible. Since access to the surface features is problematic, thanks to vile scrub at the perimeter of the bluff, prospects for realising a through-trip may be better from inside the major cave. **(Source - Nick Hume)**

In *Pendulum Palace*, the dry breakdown chamber in *Quetzacoatl Conduit*, Arthur collected more fauna. Four species of terrestrial molluscs included sub-adult and adults of *Stenacapha hamiltoni*, *Tasmaphena sinclairi*, a new variety of minute *Roblinella sp.* and a sizeable shell of *Caryodes dufresnii* - the largish land snail commonly found in many southern Tasmanian caves. Several other surface (litter) species were found nearer the entrance: amphipods, millipedes, 3cm long large brown isopods, pale-coloured worms, carabid beetles, numerous spiders and a peripatus with small hooked antennae. Amongst true cavernicoles found well into *Pendulum Palace* (in the dark zone) were millipedes, symphylans, isopods, springtails, harvestmen, mites, spiders including *Hickmania troglodytes* and a **blind pseudoscorpion** [possibly **a new genus?** - pers. comm. M. Harvey]. Also found amongst collapse debris in the dark zone were the mandibles (jawbones) and skull of a Potoroo, probably *Potorous tridactylus*.

The red-taped route from PB-12 (*Pendulum Palace*) to PB-3 (*Quetzacoatl Conduit*) roughly follows the plain/ slope juncture. Flagging tapes were placed on a log over two adjacent 3m drops, above mudbanks, suspected to be entrances into *Wombat Wallow*, another entry point to *Quetzal* system. [Later confirmed and surveyed by Jeff Butt and Greg Jordan, with regret - the mud was deep!]

Some fauna was seen amongst talus blocks near the entrance to PB-2, the outflow cave (approx. 80m. horizontal from PB-10 inflow) in ridge north of the PB-3 system, revealing a few beetles, spiders and isopods in the detritus. Entry into the cave is blocked by the talus and not surprisingly all of the invertebrates found were epigean (surface) species. **(Source - Arthur Clarke)**

Tuesday - 20th December*: surface exploration south of *Quetzacoatl Conduit

The intention this day was to do some dispersed surface exploration south, and uphill from the *Quetzacoatl Conduit* area. Hopefully to crest the major ridge leading down from the summit of *Precipitous Bluff* and end up on the eastern flanks of the lesser *Elusive Bluff*. Depression features to the east of *EB*, marked on the new 1:25,000 Lands Department map sheet, offered prospects for entering *Quetzal* at its upstream extremity. Some intuitive speculation suggested that finding entrances to parallel drainage systems was also a possibility. Everyone went along for the ride, including "cave-wary" Matt.

Red-taping was continued from PB-11 (branching off from the previous day's trackmarking). Some 70m along the route, Nick chanced upon a major entrance in an embayment leftward of the glade proper. This dropped into a large breakdown chamber, containing a small stream that led off in-slope. No flints or wall ochre-staining were present despite a meticulous search; the site being fairly ideal otherwise for past occupation. Stefan and Jim followed the stream passage for a short distance, reporting a continuing crawl that held something of a draught. Arthur found some cave "bugs": a ginger-yellow coloured carabid beetle and several symphylans. The cave waters obviously enter *Quetzal's* main streamway, not very far away. The cave was tagged PB-13 by our "numbers-man", Arthur; there being no indication of previous discovery.

Following a bearing towards a mapped sinkhole feature to the south-east of here, we moved diagonally upslope into a veritable field of dolines. Steve, Arthur and Stef all came across shafts and downclimbs, none of which did a great deal. Continuing on the same bearing, we left promising ground and ascended into a tea-tree/ bauera/ cutting-grass mix that effectively halted further uphill progress. The top of the ridge was perhaps only a hundred metres away. Downhill was easier territory, and here Nick found a large 25m plus shaft at one end of an open rift/ glade structure; (approx. location 671/848 on the 1:25,000 sheet). The site was numbered PB-14; the tag fixed to a 60cm wide belay log perched over the drop along with three fluoro-pink tapes. It was not explored.

The team had a "parting of the ways", with Jim and Stef deciding to begin their own thrash; contouring at the 100m level, northward and back towards the *Bauhaus* area. Lots of blocked dolines were passed and they eventually descended the gully below *Bauhaus*, bringing them back to the *Quetzal*. track. In the gully base some 50m before the track, a small (1m by 50cm) intermittent resurgence entrance was found but not explored. (Stefan Eberhard, pers. comm.)

Meantime, Nick bashed directly downslope from PB-14, towing Matt, Paul, Steve and Arthur who conjointly red-taped the way. They found the "sinkholes" marked on the map (location 670/845); a complex nest of blocked dolines and outcrops, with not a skerrick of going cave. A big doline/ gully, the major karst feature in the area, terminates with a gravel infill soak below a headwall. The tag "PB-15" was fixed on a solution etched wall at the lower end. A huge log bridge straddling several metres above the feature was also taped. Further downslope, a gully was encountered and followed toward another mapped sinkhole feature that corresponds roughly to the area of the known cave PB-207 (*Reece Cave*). On the way, a ferrous stained stream was noticed rising in several places out of a "soft" swampy ooze in a hollow. This smelly feature is probably the result of an iron-bacterial infusion. In attempting to beat a route (!) grid south towards *Elusive Bluff*, they were "pushed" westwards onto the plain by very dense tea-tree and bauera. Heading back north in defeat, PB-207 was encountered almost immediately (approx. location 667/844); an ideal shelter cave site were it not for its dank aspect.

Reece Cave consists of a large entrance at the plain/ slope juncture, taking a small stream draining from the swampy ooze adjacent to the glade.

In fact, Steve had to confirm that *Reece Cave* was indeed an inflow cave; the water direction flow was almost imperceptable across the gravels of the wide flat floored entrance. Beyond the entrance chamber, a short crawl leads to a wide, breakdown-floored passage, narrowing after several metres to a slimy tube lined with black mud. Nick pushed this to where it became too tight to go further, without extensive glutinous digging; though a goodly draught heralded probable drainage into the *Quetzecoatl Conduit* system. Cave length only 50-80m.

Arthur re-tagged the cave with a stouter number plate bearing the same "PB-207" number replacing the flimsy barely legible pre-existing tag. Some cave crickets, setose (hairy) spiders and harvestmen were collected from the walls along with stream water containing pebbles with aquatic insect larvae attached. The team then headed back along the glade taping towards the vicinity of PB-11. Not far beyond *Reece Cave*, "newish" footprints were found leading down into a small untagged entrance, to a short-lived chamber. Lots of similar holes were noticed in only 200m or so back to PB-11; then home. **(Source - Stephen Bunton)**

***Wednesday - 21st December*: *Damper Cave* and surface survey to New River Lagoon**

Mostly a flex day! However, Jim, Bunty and Stef did manage to surface survey from the PB-1 tag in *Damper Cave* entrance, back to the prominent myrtle tree at the campsite (a station tag "reference point" is concealed inside-top of the first fork up). Extra "legs" were taken to the isthmus of the marsupial lawn, at the debouche of Damper Creek into New River Lagoon. This surveyed length of 750m, joins the master survey of the areas' known caves to a geographically precise reference point. Thus the position of cave entrances and underlying systems can now be determined accurately with respect to topography. **(Source - Stefan Eberhard).**

Arthur did a brief foray into *Damper Cave*, wading into the stream to set and bait some traps for aquatic fauna, also collecting some spiders and carabid beetles from dry walls above stream level. He emerged to the sound of voices: Jeff Butt and Greg Jordan arriving at cave entrance after having walked in from Moonlight Flats over the previous few days. No flex days for them! While on the summit of Mt. Wylly, they did espy a string of large dolines located along Urquhart Creek, which is south of and parallel to Limestone Creek; the latter running past Elusive Bluff. Getting to them would be an interesting exercise in itself! (Greg Jordan, pers. comm.). The day was finished in making something of a splash; (Who was that "geyser" anyway?). During the night our campsite was invaded by several brush-tailed possums (*Trichosurus vulpecula*) and Tasmanian Devils (*Sarcophilus harrisii*), keen to ventilate our rubbish container. Several campsite articles were dispersed to various distances, while we were attempting to sleep! Most of our billy scourers were never seen again!

Thursday - 22nd December*: ...exploration and re-survey of *Damper Cave

Damper Cave was first described by Albert Goede, on a trip to the area way back in 1960. Four hundred metres of large streamway leads to "wet-suit country"; a short but very damp section of canal, pushed through to an additional several hundred metres of cave by the 1973 party. The cave follows a generally true north-easterly trend; one of two prominent fault-development alignments for the area. No real exploration of the cave was attempted during the recent past couple of T.C.C. expeditions.

Two assault teams were drafted for the necessary, but onerous task of re-surveying a traverse line through *Damper Cave.* This being essential for a computer generated overview of the area, and despite a great deal of enquiry by Stef and Arthur, the original data from the 1973 trips appears to have been lost. Stefan, Steve, and Paul went firstly through to the main (northern) sump, doing a bit of exploring before beginning to survey their way back out.

Ten metres back from the sump headwall, on the true right hand side, they followed a short, greasy climb leading to an impassable squeeze. This was heading back over the sump obstruction, and a strong draught hinted at major continuations on the other side. More open passage was visible beyond the squeeze but its awkward nature precluded the chance of enlarging it sufficiently to get through. Survey stations were taped below here, and at other bifurications to allow tie-ons of later discoveries.

Meantime the second assault team of Greg, Jeff, Jim and Nick were surveying in from the entrance tag. They took a few radian legs up the northern bearing passage, leading off from the main streamway at a point roughly 70 metres in; (Station *2 is the cairn at the passage junction). The junction here lies roughly under the entrance series of *Cueva Blanca*, hence a proper survey is valuable to understand the relationship between the two caves. Indeed, *Cueva* runs right over the top of the main streamway, paralleling same for a short distance, before barrelling off at right angles to it, toward a connection with downstream *Bauhaus*. Within this area of *Damper*, there appears to be only a couple of upward connective possibilities to the cave above. One is a mud climb into a tube lacking any draught, at the back of the mudslopes just prior to the junction. The other is an unscalable aven above a side chamber, on the immediate left hand side at the junction's corner. **(Source - Stephen Bunton).**

Interrupted by bouts of photography, the second group eventually tied their inward survey with the outward one of the first group. The meeting taking place at the huge stalactite - a *Begum* look-alike, (inward station *18), before the large breakdown chamber. Jeff and Greg then retreated back twenty metres or so, to check a side passage noticed earlier, on the right hand side, facing in. They surveyed as they went, finding 100m of rising and frequently bifuricating passage (*Honey and Cream*), to a draughting lead. Potential for this piece of cave is good, as it meanders within tantalising proximity to the downstream sump (*Inundation*) in *Cueva Blanca*. This is known from surface survey extrapolation, and thus holds a possible key to the interconnection of a sizeable system; (i.e., *Damper/ Cueva Blanca/ Bauhaus*). **(Source - Jeff Butt).**

While Arthur was checking his bait traps, examining stranded, putrid and queer "eel-like" fish then looking at fauna in the outer northern passage (near station *2), the rest of the collected hordes went deeper into the cave in search of lead possibilities of their own. (Stef was capturing "bug" specimens en route.) Some interestingly deep canal brought them to *The Keg*; a complex of chambers paralleling the course of the present streamway. At the former's north-eastern end, Stef pushed a 50m rockfall extension through a small decorated chamber and into a roof-sniff type crawl. At its terminus, a draught was issuing from rockfall in a section of collapsed stream passage, but prospects for a continuance were not promising. **(Source - Stefan Eberhard).**

At the major passage junction, some 60m back from the main sump, the right hand inlet passage was followed first easterly, then northerly. Initially quite big, upstream it became shallower and shallower, devolving to a tiresome crawl for about 250m. To the right of the end point of the 1973 explorations, Steve found a constricted mud and cobble-floored tube taking a strong draught; *Cane Toad Abuse*, a site with digging potential and worth a return trip with trowel. A climbing lead was also noticed in the same area. **(Source - Stephen Bunton).**

Friday - 23rd December*: another dive in *Cueva Blanca*, a surface bash, more in re-surveying in *Quetzacoatl Conduit* and a major side passage in *Damper Cave

Stef, Jim and Nick returned to *Cueva Blanca* for another diving attempt in the upstream sump of *Black Curtains*. Gear hauling with just three people was laborious, particularly with inevitable "bug" collecting and photographic stops,

Stef used the 50 and 15 cubic foot air tanks with side mounts. Returning to the constriction at the previous limit of explorations, he managed to work his way through this to a water depth of nine metres. Beyond, the passage was still narrow and heading in a southerly direction. Precisely the right bearing to link with the *Floating Anxiety* sump in downstream *Bauhaus*, and estimated to be probably only 20 metres away from where Stef was at that point. Siltation was extreme around the opening leading back through the constriction. Venturing further would have been risky without a suitable tie-off/ weight to prevent the guideline from drifting into the narrow rift above its entry point. As neither was available to the diver, caution wisely won out. Total distance covered was 25 metres; halfway approximately to a connection of the two major caves. Next expedition will hopefully bring success here. **(Source - Stefan Eberhard).**

Greg, Jeff, Arthur and Matt were also in *CB* at the time; proving to a non-speleo Matt that caves can include more than just rivers, gravel and mud! They variously got into photographing the entrance series "pretties" and doing some lead checking. The floor holes immediately inside the cave were looked at and could go with a bit of enlargement. The broad mudslopes 70m into *Damper Cave* on the left hand side of streamway being intimated to lie directly underneath this point in *Cueva*. A second floor hole with a flowstone base was even less promising, beyond holding a surprise skeleton of a wombat, *Vombatus ursinus*. Jeff recorded several air temperature readings at different sites in the cave: upper level *Cueva* - 10.8 degrees Centigrade and in the lower *White Room*: 10.4°C. The water temperature in *Inundation* was 9.2°C. Arthur collected a harvestmen, alive, and pickled cave isopods, beetles and more land snails including a minute species of *Roblinella* and a tiny *Prolesophanta dyeri*. **(Source - Jeff Butt and Arthur Clarke.)**

After leaving PB-4 (*Cueva Blanca*), Arthur conducted a surface bash with Matt initially in tow. Moving south of PB-4, roughly contouring the hill toward *Damper*, a small entrance was found. Though draughting it became impenetrable after only a few metres; it was inhabited by very "flighty" exceptionally long-legged, hairy, tan coloured Tasmanian Cave Spiders (*Hickmania troglodytes*). They then went north of *Cueva*, passing another small vertical entrance to PB-4, and uphill over abrasive *karren* outcrop then downhill to a flat floored ferny valley. After passing numerous dry gullies and small blocked dolines a massive tree fall area was reached where the ground rose steeply at a right angle intersection of the northerly and westerly trending limestone slopes. In this area, a large (8m deep and 4m wide) solution trough contained a small cave at its eastern end with *moonmilche* and other decoration; (approx. location 664/858, 0.5km north-east of *Cueva*) **(Source - Arthur Clarke.).**

Steve and Paul made a return trip to *Quetzacoatl Conduit*, moving through to the survey station beyond the roof collapse, that marked the beginning of Monday's effort into the *Lowlife* extension. Here they started surveying back to the PB-3 tag, tying in with PB-11 (*Divers Entrance*) and thus filling in another gap in our master survey of the area. This confirms the value of having a number of small teams capable of operating independently during such an expedition. Much more ground was covered by way of exploration/ detail gathering, than on our prior trips. **(Source - Stephen Bunton.).**

Early that evening, Jeff, Greg and Arthur ventured into *Damper Cave* to continue the recce of their *Honey and Cream* lead from the previous sojourn. This side passage leads into a confusing maze of inter-connecting phreatic/ canyon development with myriad small streams, some active and others "abandoned". One canyon ends with a 25m climb up fallen razor sharp slabs of limestone into a maze of small passages with crystalline white flowstone and numerous large snail shells. Following the draught in the "main" passage, brought them to a large, high chamber, beyond which it seemed more dispersed within a tall (15m+) canyon.

Dolerite boulders were plentiful in the chamber, blocking some canyon sections. Unfortunately, survey gear refused to function properly, though it was estimated that there is some 200 - 300 metres of passage within the *Honey and Cream* lead. **(Source - Jeff Butt and Greg Jordon)**

The entry passage of *Honey and Cream* includes a crawlway along an old silted up watercourse. Embedded in the dried sandy silt were thousands of tiny (1-2mm) mollusc shells, some believed to be aquatic Hydrobiidae, others being terrestrial: Charopidae and Punctidae. This passage became *Hydrobiid Highway.* On wet walls and floor of an adjoining stream passage alive and dead specimens of a Punctid: cf. *Miselaoma parvissima* were collected; (pers. comm. W. Ponder). Found in the same area were troglomorphic symphylans, millipedes, carabid larva, **Trechinae** carabid beetle, tiny blind spiders (Pholcidae) and a blind harvestmen, another female *Lomanella*; (like seen in PB-4 above?). **(Source - Arthur Clarke)**

To clear up a little mystery, the putrid eels (?) or "wallaby tails" seen beached in *Damper's* streamway, (they looked more like one of Trev's kippers to me - **Ed.**), were in fact some type of fish. Too decomposed to allow better identification, they appeared something akin to an eel or ling. They have a flattened snout with wide pectoral/ lateral flaps and thin boney dorsal fins. Their eyes are tiny, their underside white with black colouration on top; they can scarsely be called cave adapted. Stef opined that they were lampreys; eels which are common in the lagoon. Why they were found dead, stranded high and dry in the cave or on stream splashed rocks, is still an issue.

***Saturday - 24th December*: *Bauhaus, Xymox* and the finding of PB-16**

Most of the team gathered for a walk up to *Bauhaus.* From the massive entrance chamber we wandered through the obscured, but easier route, into *Xymox.* At the latter's north west end was the unfinished lead in *Bela Legosi* passage. This was pushed through a canyon climb down to *circa* 60m of more large borehole. Here, after a tricky climb, it is definitely dead, though several floor holes into a narrow lower level rift offer some hope of a bypass or a downclimb to the major streamway. The initial draught in the main passage probably flows in via ceiling inlets. **(Source - Stefan Eberhard).**

From here Paul, Jim, and Nick did the short survey back to the second last (certain) survey station of the 87/ 88 explorations. Back at *Ormi's Aven*, Steve rigged the undescended *Trubbles Pitch* from the north-western side. He descended 15m, after placing a re-belay, to arrive at a blocky floor. The next 15-20m pitch below this was bypassed by downclimbing boulders in a rift. The southern wall of the aven leads to a fossil stream-meander canyon, featuring huge *moonmilche* coated breakdown. Leaning against these blocks were the contrasting black remnants of abrasive debris, fallen from the walls of *Trubbles Pitch.* The final (deepest point) of the lead was a choked alcove, with plenty of stals, "stags" and *moonmilche.* **(Source - Stephen Bunton).**

At the south eastern extremity of *Xymox*, there was a lead in *Velvet Underground.* Formerly thought to be halted by a 10m pitch, the continuation could in fact be downclimbed on the LHS of the drop. The downclimb led directly to a bone/ shell filled passage. Large terrestrial snail shells, both conical and flat-whorled varieties, littered the place in great profusion. Steve saw three different species of gastropod shell; (pers. comm. Steve Bunton). Probably arriving there via inlets offset from the nearby (PB-7) entrance of *Xymox.* The lead died soon after, unfortunately, choking off after narrowing down to a laceratingly fluted rift. Waters appear to sink in gravel sites along the wall.

Photographing our way back to the entrance chamber of *Bauhaus*, we moved on down to the main streamway and towards the *Floating Anxiety* sump, largely for a bit of a tourist jaunt. Extensive upper level fossil-stream canyon was gained

at several points along the present active one. An enlarged level meanders back and forth over, and several metres above, the existing waters. Trev. and Chris' footprints (from the 87/88 trip) were sighted along one section, but the canyon is more extensive than first thought and may traverse the entire streamway to a possible bypass of the sump into *Cueva Blanca*. Suffused in very thick moonmilk, the canyon passed a number of avens, blackened with introduced carbon material. A draught was also present on occasions, explaining the gradual loss of it from the passage below. Along with bone choked inlets, this hinted at other major surface entrances to the system still to be found. **(Source - Nick Hume).**

Air temperature measurements within *Bauhaus* proved to be almost tropical. 8.5 degrees Centigrade was registered at base of the *New Order* shaft, while in *Bela Legosi* it was a balmy 10.2°C. By comparison, a measurement of 12 degrees was made outside, at the bottom of the massive *Bauhaus* collapsed doline/ depression, at time of entry around 11am. **(Source - Jeff Butt).**

Greg had spent much of the day doing a series of botanical transects on western slopes of Precipitous Bluff, eventually reaching the false summit gully. En route up the summit track he ventured off into a steep sided blind valley, immediately north of the track, some 50m uphill from the *Log-doline* turn-off. In the base of the headwall at the lower (Lagoon) end of the blind valley, he found a small draughting horizontal entrance. While returning down the summit track he met Arthur doing a surface bash, looking for the *Log-doline* turn-off to *Bauhaus*. Together, they inspected the blind valley cave site: a narrow rift with decoration leading to an estimated 30-40m pitch. The cave was tagged PB-16 (and still remains undescended). In late afternoon, the pair eventually found *Bauhaus*; Greg attached a number tag (PB-6) near entrance. **(Source - Greg Jordan)**

Arthur collected some live "Monoxyomma" type harvestmen on a moonmilk slope; a new species, different to the ones in *Damper* and *Cueva*; (pers. comm. G. Hunt). Some of the moonmilk contained a mauve coloured streak through it. Four mammals were identified from skeletal remains: Bennetts Wallaby, Broad-toothed Rat, New Holland Mouse, Dusky Antechinus and on a moonmilk bank beside the streamway, some 40m downstream, the remains of a Honeyeater (bird). Apart from land snails there were glowworms, millipedes, symphylans, ginger-yellow carabids and numerous species of spiders on the streamside banks. Some of the spiders are probably troglobitic species. [Subsequent examination shows that some possess modified limbs: slender legs, pedipalps and chelicerae often with long spines; some are very setose (hairy) and have reduced vision (less pairs of eyes or only pigment spots in place of lenses).] **(Source - Arthur Clarke).**

Sunday - 25th December*: ...the finding of *Persephone* and *Christmas Cavern

Christmas Day, but we weren't turkey enough to sloth about in camp! Instead, Steve, Arthur and Nick went back up the summit track, with only light caving gear. Obstensibly to peer at Greg's find (PB-16), but in reality to check along the contact north of this cave to search for feeder-caves to the *Damper* system. Fluoro-pink tapes on the summit track mark the area where our obscured route took off. Steve settled into the task of pink-flagging trees on the way, with Arthur "tagging" along with drill and Nick on general thrash.

Past the PB-16 gully, a ridge-line was crossed to another large doline, in the next parallel gully northward. On the south-eastern wall of this was a rift entrance, (*Persephone*) against a limestone wall, dropping immediately into a massive great shaft, estimated at the time to be 40m+. A number tag (PB-17) was put on the RHS wall. The rift/ shaft entrance was 2m wide and appeared to "bell-out" drammatically further down. It was possible to look 20m along the thing in a southerly direction. However, no base of the pitch could be seen. Rising out of the depths was a veil of mist riding on a powerful draught. "Soundings" with rock seemed to indicate a slope/ continuation somewhere below.

To the left of this entrance, there was a narrow phreatic tube (body-sized) leading to the head of the same pitch. A brief sojourn down the gully yielded further karst features: small shafts, collapses and some sharply fluted *karren*, but no going cave; (pers. comm. A. Clarke). PB-17 (*Persephone*) is in a gullied doline uphill from the taped track. A tree on the downhill side of this feature (past which the track runs) was triple-taped for future reference. Keen to discover more, we raced across the next ridgeline, leaving Arthur muttering over the number-tags. The next gully also harboured a line of dolines. Some 60m uphill, Nick found a huge entrance, *Christmas Cavern*, (PB-18) nested on the southern wall of the valley. A side track was taped to this and a man-fern was extra taped to mark the find.

The "PB-18" number tag was duly fastened on the RHS wall near the lip of the extremely steep slope, above the massive rifted shaft. Found at the base of this wall was an extremely large (20mm+) specimen of a carnivorous land snail: *Tasmaphena sinclairi*; (pers. comm. K. Bonham). The entrance shaft to *Christmas Cavern* was several metres in diameter at the surface; larger than *Bauhaus* in fact, tapering down a steep, vegetated mud-slope. A clino reading suggested the slope angle to be greater than 60 degrees; (pers comm. A. Clarke). Downclimbing 15m of this, a rubble floored chamber could be seen some 20m below. Beyond was an apparent lead to the end and right of the chamber. Possibly another pitch, but the slimy limestone wall below needed a handline to be able to get into a position to confirm this. No draught was present, which did not auger well for an extensive system, but the large cross- sectional area of the entrance may have obscured any air flow.

A foray further uphill yielded nothing. With a similar result forthcoming below our main track, we pushed on over yet another ridgeline and gully. Plenty of blocked dolines were found uphill, prompting a radical departure to parts much lower down. Nick contoured the base of the previously covered area, arriving at the site of massive treefall within a large mud in-filled depression. Almost certainly the same features seen by Arthur in his wanderings, two days previous. The area is distinctive for extensive outcroppings of *rundkarren*, but apart from minor holes in these, mud seems to have claimed anything better. **(Source - Nick Hume).**

Taping finished on a line directly above where Nick dropped down to the prominent depression. A point, paced as 500m distant from the summit track. Steve continued north-west of here to a vegetation-free watercourse, lined with dolerite cobbles. This corresponds to the gully draining Precipitous Bluff's exit chasm; purportedly in which the 1973 explorers found the draughting shaft: PB-209. He then walked down hill, without finding any sign of the 1973 hole, to an area of large mud-filled depressions; this point estimated to be the sink-hole feature marked at 660/860; looked at on the 1986 trip; (Speleo Spiel: 237). Steve then bashed overland to *Damper Cave*. **(Source - Stephen Bunton).**

Jim and Stefan decided to go bushwalking up to the cosmic heights of PB summit. Nearing as it was, to the end of their stay here. Three and a quarter hours up, and two and a half down. Unfortunately, views from the top were a bit limited, due to a change in weather later that day.

Jeff and Greg went off for a look/ photograph in *Quetzacoatl Conduit*. They were conned by Nick into also surveying the *Wombat Wallow* side passage off the main streamway; a piece of cave they later described as a "...delightfully muddy, slippery wallow..." Valuably, they tied in the surface holes at the end of this passage; (the final station being Arthur's taped log over the double entrances). The total transect length was 112 metres. Moving back through the *Quetzal.* streamway to the *Lowlife* extension they savoured a few hundred metres of bliss; splashing about in the canal, before returning to camp for Christmas pudding. **(Source - Greg Jordan)**

Monday - 26th December*: ...booty scooping in *Damper Cave

Matt and Paul said goodbyes, and left to go out over PB and onward to home. Paul's feet weren't in the best of condition following his walk in and subsequent caving. Some rummaging in the comprehensive expedition first aid kit for mole-skins and other goodies, preceded his departure. Arthur went into *Damper Cave* to check his bait traps, followed by Jeff and Greg returning to complete their survey of the *Honey and Cream* extension. Beyond the dolerite filled canyon, they discovered a further large chamber, with some decoration at the far end; Arthur found a cave millipede near here. The sole lead in this area was a 10m climb in the dolerite filled rift, next to the decorated alcove. Although a breeze funnels in, the climb was not attempted. **(Source - Jeff Butt)**

On the way in, wet-suited Greg and Jeff also helped carry diving gear for the "very wet team" - Stef, Bunty, Jim and Nick. God bless the former's hearts! The larger group then continued lugging gear all the way through to the main sump in *Damper* for an exploratory dive. Though given the wide and generally open conditions in the cave, it wasn't a particularly difficult task. Bunty peeled off up the RHS passage at the major junction before the sunmp for a little "cane toad abuse". Or rather he did so for the purposes of a solo dig/ exploration in the tributary passage of the same name.

The remaining team assisted Stef (the only one who could be bothered diving) in getting his SCUBA gear on for the push. Sump conditions were ideal; the headwall area nice and open, and the waters very clear. Interestingly, to the immediate right of the sump was an alcove containing two unenterable fissures, through which a draught issued strongly. A good omen of major passage awaiting on the other side. Stef swam up to the headwall, deliberating for a moment then disappearing into the waters. Jim and Nick waited the lonely vigil.

Stef moved through a wide clear tube, noticing a couple of airbells above, but remaining mid-passage. The deepest point of the sump registered on the guage as 6 metres. Twenty-five metres from the start of the dive, a large silvered area loomed ahead. He surfaced, looking along the major borehole of *Stygologia*. Above the far side of the sump, a roof tube suggested the possibility of a dry-way connection into here, via the impassable-draughting squeeze on the other side (described on the trip of 22nd December). He began a pace and compass survey, trying to both detail and explore massive virgin cave.

After 200 metres, an aven was passed on the RHS. Nearby, the main stream issued from a crawlway; left in favour of easier fossil borehole above. The upper level was well decorated and contained tubes that ran off in all directions. The more major way was adhered to and followed for another 200m. Here, a sizeable passage junction offered four possibilities for good continuations. These were only partially detailed. Although one appears to reconnect with the main streamway through a rocky crawlway squeeze, and was the final point reached. Being mindful of the poor suckers who had been waiting for him two hours on the return side of the sump, Stef didn't bother going any further. In total, 415 metres of new passage was pace-and-compass surveyed, with an estimated direct-line extension, due north, of 250m from the previous limit (sump) in *Damper*.

The three suckers; now including Steve, were about to freeze their carbides off, when shouts and whoopees were heard emanating from the sump pool. Returning hastily from their hovels, they helped Stef out of the water, and collectively began a weighty retreat in the direction of camp, to celebrate the major find. Many thanks to all the sherpas who assisted in the success: Bunty, Jim, Nick, Greg and Jeff. **(Source - Stefan Eberhard).**

[TO BE CONTINUED in next issue of 'Speleo Spiel.....]

Quetzalcoatl Conduit

PB3 Precipitous Bluff

PLAN

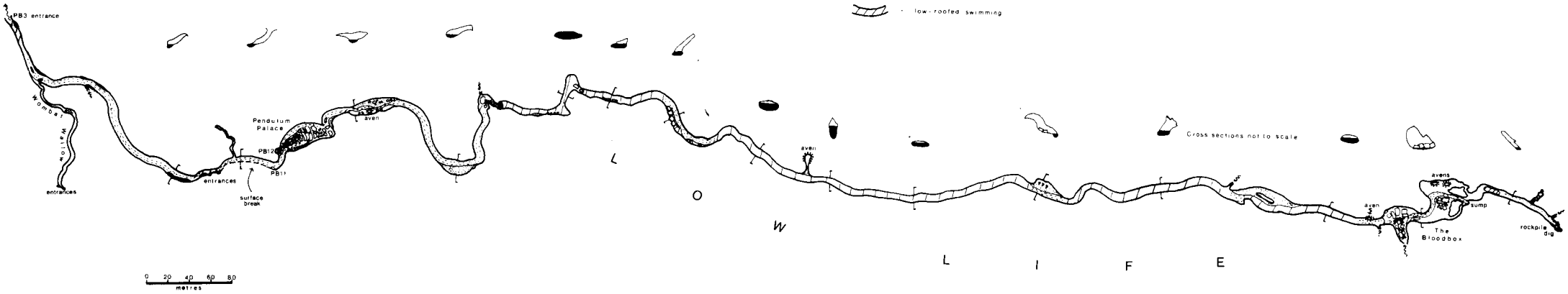
Surveyed DEC 1988

P Boustead
S Bunton
J Butt
J Davis
S Eberhard
N Hume
G Jordan

Drawn JUL 1989

N Hume

TCC



Cave Hydrology of Precipitous Bluff Karst