

# SPELEO SPIEL

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\* Tasmanian Caverneering Club \*  
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\* 1989/90 Precipitous Bluff Expedition - Special Spiel Issue \*  
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### Introduction to Part #1

The following narrative documents the Tasmanian Caverneering Club expedition to the Precipitous Bluff karst area, held over 27th of December 1989 to 9th of January 1990. Included is a summary of all caves discovered by the club, as well as cave surveys of some of the more major finds.

This expedition concentrated on exploring a complex network of phreatic-based, fossil-cavern development associated with what is known as the Bauhaus System. Several entrances were found to this, giving access to three and a half kilometres of surveyed extent. Diving attempts were made in neighbouring Damper Cave and Cueva Blanca, revealing a surveyed total of two kilometres of cave hydrologically related (and in addition) to the Bauhaus System. As well, surface exploration revealed more of the overall extent of karst features in the Precipitous Bluff area, and turned up several previously unknown caves.

Major scientific results ensuing from the expedition were:

- creation of a database currently inter-relating a total of 7.6 kilometres of surveyed cave passage (as well as overland data connecting cave entrances), which is accessible in both plan and variable profile aspects. Such computer treatment is indispensable for speleological investigations, and is highly suited to such requirements as cartography, and studies of karst hydrology and surface morphology, etc. It provides a permanent record of the Precipitous Bluff karst, and can be easily updated to include subsequent finds.

- carrying out of the most intensive faunal investigations of any karst area in Tasmania, revealing the highest known diversity of troglobite species anywhere in temperate Australia (Eberhard, 1990).

- discovery of fossil cave development (located between 50-70 metres ASL) mimicking likely marine-influenced active cave levels of lower altitude (A. Goede pers. comm.). Implications for studies of eustatic sea level change with respect to Tasmania's south coast are highly unique, and further investigations are planned.

- discovery of two previously unknown cave sites warranting archaeological investigation.

The narrative has been apportioned over two regular issues of the Speleo Spiel newsletter (numbers 258 and 259). Acknowledgements, references, and cave summary, appear in the second instalment.

Editor - Nick Hume

**Wednesday, 27th of December: Arrival at Precipitous Bluff.**

By mid afternoon, the stormy weather subsided sufficiently for us to fly in to the Precipitous Bluff camp site. Present over the first week of the expedition were: Gavan Duffy (Victorian Speleological Association), Dean Morgan, Stefan Eberhard, Lew Mitchelmore and Nick Hume (all Tasmanian Caverneering Club).

**Thursday, the 28th: Weeno (PB 23) connected through to Bauhaus. Diving Damper Cave (PB1) sump into Stygologia.**

Gavan, Lew and Dean followed the Precipitous Bluff Summit Track, (uphill from the entrance of Damper Cave), to a point marked with a pink/yellow/pink tape. Some 15 minutes south of here, down a dry gully, they reached the top of a cliff directly above the easternmost of two huge "eyesockets". Weeno entrance drops into an impressive chamber from the right hand side of this first large overhang, and was originally found by Lew pursuing a source of cold air drainage (noticed while wandering the open forest). They placed the number tag, PB 23, on a block overlooking the entrance shaft. Pitches of 8 metres and 6 metres led to a floor, where, some 10 metres away, a deep section of vadose canyon dropped away to an audibly active streamway. This was at first rigged with 30 metres of rope, but was later found to be free-climbable with care, connecting down to Bauhaus streamway (PB 6).

Bauhaus was followed for only some 100 metres before arrival at the downstream terminus, Floating Anxiety Sump, of that cave. A numbered station was found from the earlier Bauhaus datum, and a survey/return out to the entrance of Weeno was begun. At the top of the 30 metre canyon, another pitch was noticed, but left undescended until a later trip. Total depth from entrance to the streamway was 50 metres. (Source - Lew Mitchelmore).

Nick and Stef carried lightweight diving gear through Damper Cave to the far upstream sump. Stefan had dived this 28 metre siphon into some open and continuing stream passage (Stygologia) on the previous expedition, and had only partially explored (and pace-and-compass surveyed) its extent.

The sump waters were flowing strongly and were murky due to rain storm events associated with the spate of bad weather. The dive eventually led upward to a froth covered air surface on the other side. A small waterfall fed the far-sump pool, marking the continuation of upstream passage. Photography gear and clino/compass were brought out, and a survey undertaken of side passages encountered to the left of the main route. A fossil (perhaps overflow at times) route bypassed the streamway where it became too shallow to follow comfortably.

The dry way was well decorated with helictites and gypsum formations, giving occasional brief glimpses of the constricted active route beyond its right hand wall. A good draught was present at such points, but artificial enlargement would have to resorted to in forcing a way through, and thus it was left. A tributary stream led into a large area of rockfall, but no further way on could be found from there. Despite the points known vicinity below a feature marked as a "sinkhole" (750 metres



to the north west of Damper Cave entrance) on the Precipitous 1:25000 map, a lack of vegetal detritus or animal bones (or avens for that matter) offered little hope for simple surface entry to this far rockfall chamber. Surveying was begun along the return route, connecting in with the side-passage radians taken earlier in the day. Total surveyed extent was 500 metres, gathered during seven and a half hours underground. (Source - Stefan Eberhard).

The mystery of the source of major waters feeding the stream in Stygologia remains. It must gradually intersect drainage along its route under and perpendicular to the gully and ridge lines descending from the PB summit. Mimicking the parallel course of Persephone (PB 17) streamway, which is only some 150-200 metres further into the slope, and at a higher level (see hydrological relationship in Speleo Spiel #252). (Source - Nick Hume).

*Friday, the 29th: Aikea (PB21) connected through to Bauhaus. A further lead in Weena (PB23). Deep Purple (PB 25) connected through to Weena, and discovery of Mezzanine (PB26).*

Stef and Nick went up the Summit Track to Log Doline (150 metres ASL), and then down the southerly bearing ridge-track to the top of New Order shaft (PB5). From the triple-blue-tape entrance station of PB5, they surveyed overland to Aikea (PB21), placing a number tag (within a gulch overlooking the drop) on the uphill side of the shaft. The 32 metre pitch was rigged with the aid of a long trace (over a sharp ledge) near the top. A redirection was also required some 10 metres from the bottom.

The pair descended to a flat-floored vegetated chamber. Fossil phreatic borehole passage was found to exit the base of the shaft on both the north west and south east sides. Wandering into the former, the wide borehole led fairly immediately to a climb down into some huge chambers suffused with moonmilche and black (organic) streaking. Wear marks were noticed, and it turned out to be Kokoku, the very old uppermost-level chamber series of Bauhaus. Nick and Lew had unknowingly passed within 30 metres of daylight here. on the previous expedition!

Heading south easterly, and down slope, Nick and Stef descended an 8 metre handline to a lower level. A right hand lead finished at a steeply sloping drop-away, there being absolutely nothing sufficiently solid to rig from. Surveying/faunal sampling/photography began from this point, on a more or less return route. At the opposite end of the lower level, a 15 metre pitch was rigged down to a chamber, the north west end of which intersected some very deep and old vadose canyon. Fifteen metres of this was downclimbed to a delicate position some 10 metres off a dry floor, before retreating. A radian was surveyed back to the top of the pitch, and they continued through Kokoku, down a series of muddy climbs and into Bauhaus proper (tying in with Bauhaus datum #58 above Slime Climb).

A survey loop was then completed on their return back up the climbs to the base of the Aikea shaft, and out to the entrance tag. Prior to prussiking out, a foray was made into the borehole on the south east side of the day-lit floor. Wide and low initially, this opened up dramatically over a huge moonmilche-

plastered chamber. A floor collapse was negotiated to a continuation of the borehole on the other side, halted before very long at a 10 metre drop leading into a fantastic sight. A straight "railway tunnel" of several metre wide and ten metre high dimensions, "barreled-off" out of sight (Psychomachia). Left on this occasion, it looked definitely worth a return visit. A radian survey leg was taken from the top of the 10 metre pitch back to the base of Aikea shaft. (Source - Nick Hume).

Gavan, Lew and Dean went back to Weeno to explore the undescended pitch left over from the previous day (at the base of the major entrance pitch). Dean abseiled two 12 metre sections into a chamber with a hole in the floor, from which clearly emanated the sound of the Bauhaus streamway. The descent of this further pitch wasn't bothered with, and a completion of the prior days surveying was undertaken back to the (PB23) entrance tag. An overland survey was then carried out to the entrance of nearby, new-found, Deep Purple (PB25), and over to the pink/yellow/pink tape at the Summit Track. (Source - Dean Morgan).

Gavan did a quick reconnaissance in Deep Purple while the others were surveying. The easternmost of twin shaft entrances dropped down 21 metres to a boulder choke. This could not be negotiated very far, so an ascent was made to a horizontal lead noticed exiting the shaft some 8 metres from the top. Ten metres along the lead was an intersection with north/south bearing passage, the southern branch eventually breaching the surface at a small opening - Mezzanine (PB 26) within sight of the Weeno overhang (to the east and slightly uphill). Below this opening, a continuation connected through to the chamber at the base of the first shaft in Weeno. The northern passage extended into the 1 metre wide and very deep, decaying, vadose canyon so typical of cave development in this karst area (a vadose section above the level of fossil phreatic borehole represented by Kokoku in Bauhaus - Ed.). (Source - Gavan Duffy).

Parks Ranger, Ted Meade, walked into camp that afternoon from the South Coast Track, on a mission to gauge the wilderness impact of our caving expedition. He seemed suitably impressed with the precautions taken, eg rubbish and toilet containers, etc. He expressed interest in accompanying us on a cave trip the following day, little knowing what was in store for him!

Saturday, the 30th: A swim to the end of Quetzalcoatl Conduit (PB3). Diving in the downstream sump of Bauhaus (PB6).

Gavan and Dean donned wet suits and entered via the Divers Entrance (PB11), for several hundred metres of "Quetzal Crawl" in the deep canal of Lowlife streamway (see Quetzalcoatl Conduit survey in Speleo Spiel #252). They discovered a 30 metre high aven off to the right of the sump in Bloodbox chamber, as well as a sediment-laden inlet passage slightly further on. Returning towards the "roof-sniff" section of Lowlife, a shallow (30 cm high) parallel stream course was found to lead off from the southerly wall. This deteriorated 20-30 metres later, at a point where running water could be heard further on (possibly drainage from Reece Cave - Ed.). (Source - Gavan Duffy).

Stef, Lew, Ted and Nick shared the carrying of diving gear, all the way up the Summit Track to the entrance of Bauhaus. The intention being for a diver to attempt to force a connection through to the sump in Cueva Blanca (PB4) from an adjacent prospect on the Bauhaus side (see hydrological relationship in Speleo Spiel #252). Ted wisely balked at the first deep pool en route to the downstream Floating Anxiety sump, the others going on to assist Nick into diving gear at the waterfall ledge above the terminal pool.

Nick inspected the submerged siphon-tube (bearing slightly leftward of the main passage trend), before commencing the dive. The 1 metre diameter tube headed steeply downward for 10 metres, to where it narrowed suddenly in what appeared to be a vadose-serpentine rift (a now submerged course above a former, buried one). Following a return to the surface to sort out guidereel problems, a second dive was attempted to pass the obstacle, which only resulted in the diver becoming wedged in a tight right hand bend. A section of guideline was tied off to a weight at this furthest point, and left in place in hope that it may be spotted during a later dive attempt from the Cueva Blanca side. Only a very streamlined (i.e. thin as well as courageous) diver would be able to get any further here. (Source - Nick Hume).

While this was going on, Lew entered a high level rift above the waterfall feeding the pool, potentially heading over the top of (bypassing) the Floating Anxiety sump. This was body-sized, very muddy, and became impassable after 8-10 metres. Slightly more open passage appeared to continue on beyond, and some draught was present, hinting at a possible dry connection through to Cueva Blanca. (Source - Lew Mitchelmore).

***Sunday, the 31st: Swine Pot (PB16) explored. The finding of Jigsaw Cave (PB34). The dense scrub of Elusive Bluff.***

Lew and Dean went past Log Doline and down the first (northern) gully paralleling the track ridge, to an entrance (PB16) found by Greg Jordan on the previous TCC expedition. Hopes were high that the cave might be the source of a branch-stream entering Persephone (PB 17) streamway, half way along the latter's course toward Bauhaus. An abrasive 10 metre entrance shaft shredded the pairs caving suits, and did nothing to endear them to the caves original discoverer. Hence the name Swine Pot. Total depth of the cave was 25-30 metres, with some 20 metres of grubby horizontal development concluding explorations at a (vaguely draughting) squeeze. This pothole does not appear to be a "rediscovery" of Severance Cave, described as being near such a location by Middleton and Montgomery (1973). (Source - Lew Mitchelmore).

Stef surface explored between the area of tree fall (right of the early section of the Summit Track, and the area of Weeno. He then wandered 200 metres to the south, crossing the ridge at 850666 on Precipitous 1:25000 map (a ridgeline leading down to the entrances of PB2 and PB10), finding a truncated section of fossil borehole in the base of the next gully. Jigsaw Cave (PB34) extended for 55 metres on a bearing of 140°, through well decorated passage that appeared to be an isolated re-emergence of the same fossil-development trend in Aikea (i.e. Psychomachia).

A lead was sighted above a wall at the end of explorations, but would require climbing gear. He then returned to the walking track past the entrance of Bauhaus. (Source - Stefan Eberhard).

Gavan fancied some exploration further afield. Climbing to the approximate location of the limestone contact via the Summit Track, he attempted to follow a ridgeline leading down to Elusive Bluff. This area has had a peculiar masochistic attraction for cavers since 1973, more recently known to contain a potential "backdoor" to Quetzalcoatl Conduit (via the sinkholes marked at 847677 on Precipitous map), among other possibilities. He found only minor holes, becoming mainly preoccupied with making headway in dense cutting grass/bauera. (Source - Gavan Duffy).

Monday, the 1st of January: Overland surveying of entrances between Weeno (PB23) and Aikea (PB21). Checking leads in Gaping Grin (PB22).

Stef, Lew and Nick went up to the area of Weeno, to tie-in recent cave entrance finds with the master survey. They placed the number tag - PB28, on a deep overhang found by Lew during the 1988/89 expedition (the westernmost "eyesocket".) PB28 is a possible archaeological site, being an ideal shelter cave apart from having a southerly aspect and lacking a present (nearby) source of water. Flakes of limestone, carbon-stained walls, and "arranged" tree fragments were found, but all may have a natural explanation. The entrance has no continuation beyond daylight.

They surface surveyed through the entrance tags of Weeno (PB23), Mezzanine (PB26), Deep Purple (PB25), Gaping Grin (PB22), and finally connected to the datum at Aikea (PB21). Number tags were attached to Mezzanine and Deep Purple along the way. (Source Stefan Eberhard).

Lew wandered into Gaping Grin to check various leads in the big chamber at the bottom of the second pitch which hadn't been explored before. Some 50 metres along a passage to the south west of the chamber, he noticed daylight, and climbed up to the Mezzanine (PB26) entrance. This is now a simpler way into the upper level labyrinth of the Bauhaus system, connecting Gaping Grin through to Weeno and Deep Purple. A 50 metre pitch was noticed part way along this link passage, apparently leading down towards the sound of the Bauhaus streamway. Returning to the big chamber, an 8 metre climb on the eastern side led into 80 metres of south easterly bearing passage (1-2 metre wide canyon), eventually finishing at a sediment blockage. In addition, a 3 metre climb and a 5 metre pitch were noticed on the north west and north east side, respectively, of the big chamber (later explored). (Source - Lew Mitchelmore).

Tuesday, the 2nd: A change of personnel. PB28, and surface wanderings yield PB29. Surveying and explorations in Gaping Grin realise a connection through to Bauhaus.

Cave weary veterans Lew and Dean flew back to the outside world, along with the first instalment of garbage (ours and other bushwalkers!) and night soil. They were replaced by some novice (and not so novice) "fly-ins" in the shape of Stuart Nicholas,

Trevor Wailes, Rolan Eberhard, James Davis, and Leigh Douglas (all Tasmanian Caverneering Club).

Stuart, Trevor, James and Nick went up to Skylab (PB28) that afternoon. Another of Lew's finds from the previous year, the group explored its brief extent prior to placing a number tag and surveying overland to nearby PB27. Stuart and Trev went for a quick look in Gaping Grin, then surface explored around the contour to Cueva Blanca (PB4) on the other side of Summit Track ridge. (Source - Trevor Wailes).

Jim and Nick explored lower down the slopes between the entrances of Aikea and Bauhaus, returning around the contour to the ridge line south of the walking track. They then walked down the "nose" of the ridge, finding a draughting entrance within sight of the floor of the level plain. Placing a tag here (PB29), the cave was explored down to an intersection with a shallow streamway. Jim found an alternative route to the same stream, which he pushed until it became too low to continue. A surface expression of this drainage is probably the small creek flowing along a glade around the very base of the ridge. (Source - Nick Hume).

Stefan, Rolan and Gavan went into Gaping Grin via Mezzanine (PB26) entrance. From the PB26 tag, they surveyed through the linking passage (linking to the entrance of Deep Purple along the way) to the big chamber within Gaping Grin proper. The lead with the 5 metre pitch, mentioned earlier by Lew, was handlined to a ledge at the top of a 25 metre shaft. Stef and Gavan traversed the left hand edge of this into a southerly bearing passage decorated in moonmilche. A 20 metre pitch was present at the beginning of the lead. They continued on, negotiating occasional floor collapses, to be finally halted at the edge of a 35 metre drop (Mariah Black Pitch). The pair then surveyed back to the previous station in the main chamber of Gaping Grin.

Meanwhile, Rolan rigged and descended the 25 metre shaft to a rubble slope, the base of which contained two draughting slots dropping into larger passage below. Lacking further gear, he then retreated back up the shaft, using the same rope to rig the 20 metre pitch nearby. This was descended to where a 5 metre downclimb intersected continuing passage. One end terminated at an aven with holes into more pitches below. The other passage was followed through some large canyon, which proved to connect down to the Bauhaus streamway. There were now eight separate entrances into the Bauhaus system!

Having completed surveying back to the main chamber, Stef attempted to find a higher continuation of the fossil phreatic borehole characteristic of that level, but without success. The best remaining lead seemed to be over the top of the 25 metre shaft. Needless to say, the whole system was becoming very complex indeed! (Source - Rolan Eberhard).

**Wednesday, the 3rd: Checking leads in Persephone (PB17), and Aikea (PB21).**

Trev, Rolan and Stef went into the Persephone streamway via the Bauhaus' (PB6) main entrance. They continued upstream to the



entry point of Persephone's pitch-series (survey in Speleo Spiel #253). Here, a 12 metre pitch (left undescended on the previous expedition) was found to drop back into a known area of the active streamway. Over the top of this drop they found a separate and previously unknown aven.

Trev pushed the far upstream lead of the main streamway in low and squalid passage, and eventually into a maze of small phreatic tubes that lacked any draught. Despite proximity to Damper Cave (paralleling this streamway 150-200 metres further west), there seems little scope for an interconnection with that cave. Just prior to where the upstream section becomes a grovel, one 3 metre downclimb (near cave-coral) leads into a small tube on the appropriate left hand side (shown on survey). This holds a slight draught, and continues to where sustained squeezing/digging would be necessary to go any further. (Source - Stefan Eberhard).

Stuart, Jim and Nick descended the 30 metre Aikea shaft (PB21) to continue explorations in the major Psychomachia lead. An 8 metre pitch was rigged below the furthest point reached on the 29th of December. This was necessary to continue over a major floor collapse of the fossil phreatic level. Forty metres along this passage/chamber was yet another floor collapse below a prominent set of stalagmites. A 10 metre rope was rigged down the opening, and descended to an area of very finely structured moonmilche. A short handline was required to continue to a lower level, but only a few leads were found. Jim pursued these to eventual blinds, and the surveying out began.

Returning to the top of the 10 metre pitch, a continuation of the large phreatic level could be seen several metres above and beyond the edge of the final floor collapse. Efforts were made to "lasso" overhead buttresses of rock in order to reach this, but proved fruitless. The walls themselves were far too friable to allow direct climbing, which was a pity as the considerable draught promised much more.

Just before re-emergence to daylight, they found a climb leading down into a passage skirting 180° around the western (in)side of the base of Aikea shaft. An indication of the unique density of caverniferous development in the Precipitous Bluff karst. A further downclimb and an 8 metre pitch realised a connection through to Kokoku. From there, the group wandered towards the main entrance of Bauhaus (PB6), rather than prussik the 30 metre Aikea pitch by which they had come. To the right before the down climbs out of Kokoku, a 25 metre shaft drops into a massive chamber. Nick rigged and descended this to an eventual connection with the top of Slime Climb in Bauhaus. Another "black rift" lead was noticed prior to the link. Aikea shaft was derigged from the surface on the walk back to camp. (Source - Nick Hume).

Thursday, the 4th: Aid climbing in Damper Cave (PB1). Going "caving" by computer.

Gavan took some climbing gear into Damper Cave, to explore some avens toward the end of Cane Toad Abuse passage. Finding skyhooks to be less than useful, he eventually managed to lasso a boulder above the appropriate site and haul himself up to a flowstone

chamber. Removing gumboots and gloves first, an inspection of the chamber proved the lead to be of short duration. A profusion of very fine helictites was the only thing of note.

Returning through the main streamway, differences of water volume were noted between first and second rockfalls. The inference being that a hydrological connection through to Cueva Blanca (PB4) exists somewhere along this area of Damper Cave. Water clarity in The Keg on occasions appears to be better than that in the prior streamway, though the former appears to be a relatively static offshoot of the main stream. (Source - Gavan Duffy).

Stuart brought out a laptop computer from his pack, interpolating the recent overland/cave surveying results with datum from an existing data base. This kept most expedition members riveted to camp, keen to preview graphic displays of the relationships of various caves. Many thanks to Stuart for going to such trouble. The sight of him "number crunching" amongst the contrasting backdrop of wilderness was quite stunning, and results helped expedition members decide on worthwhile places to look, or at least did so when they next went caving!

***Friday, the 5th: Bat skeletons in Cueva Blanca (PB4). Another Bauhaus connection in Gaping Grin (PB22). Surveying in Damper Cave (PB1).***

Stefan and Rolan went to Cueva Blanca. Rolan looked in the floor hole just inside the entrance, hoping for a connection through to Damper Cave which passes directly under that point. He squeezed down to a muddy chamber, but found no way on. Stefan checked some floor holes further in with equally disappointing results.

The sole pitch was rigged down to Inundation in preparation for later diving attempts in the upstream Black Curtains sump. From a point halfway down this drop, the two climbed up the far wall into White Room chamber, where Stefan found twenty nine bat skeletons. Two skulls were collected for identification back at the Uni's. Zoology Department. The site appears to have had a colony in residence in the recent past, judging by remnants of flesh still adhering to one set of bones. A tape barrier was erected at the start of this chamber, with the notice: "Please avoid continuing - bat skeletons and formation susceptible to damage beyond this point. T.C.C., 1990". White Room was surveyed back to a prior known station at the mid-point of the main pitch.

To the right of the main pitch, the upper level leading back over Inundation's lake series was explored (looked at in 1988). The rift passage finished at a dolerite boulder slope below an aven, indicating a former point of surface entry somewhere above. This was surveyed. To the left of the main pitch, a continuation of the rift trend was looked at, but essentially closed off immediately in a build up of flowstone. Further possible dry leads in the cave now seem exhausted. (Source - Rolan Eberhard).

Trev, Gavan, and Jim, wandered back into Gaping Grin. A survey was done from the main (PB22) entrance, to a previous station of the traverse made from Mezzanine entrance. From the ledge at the top of the 25 metre shaft, a lead directly opposite the entry

passage was gained via a narrow rock bridge. This was pushed into upper and lower level components. The former finishing fairly immediately, while the latter (the most northern part of Gaping Grin proper) went for 15 metres to a choke near a squeeze into more black rift. This wasn't bothered with.

The "best remaining lead" (from tuesday the 2nd), to the right of the 25 metre shaft, was found to connect through to the Kokoku series of Bauhaus (station #5) via more of the ubiquitous black rift. Nick and Stef had abseiled into this area from the main upper level, for a brief look, on the friday of the 29th of December. Trev, Gavan, and Jim were hence baffled on discovering the abrupt appearance and disappearance (ie "out of thin air") of scuff marks on the floor! The group had no alternative than to remain at this same level, however, once again finding themselves entering an area of black rift via which they were able to downclimb into the Bauhaus streamway. A survey was then carried out back up the way they had come, to a tie-in with the Gaping Grin datum. (Source - Trevor Wailes).

Stuart and Nick entered Damper Cave to re-survey "unknown sections" of the cave, the raw data to which had been lost subsequent to original documentation in 1973. Only side passages remained to be done, as a traverse line re-survey (along the main streamway) was carried out during last years expedition.

From a known point in The Keg (station #11), radians were taken into nearby Sand Tubes, as well as the rockfall chamber. The pair then surveyed into the major side passage leading to Cane Toad Abuse. This eventually deteriorated to a sustained grotty crawl, the many minor leads along the way being thoroughly checked. Near the end of the known passage, a series of high avens (one of which Gavan had aid-climbed on thursday of the 4th) were looked at, but further discovery above here seems doubtful. The draught through the entire area of passage seems to originate largely from Cane Toad Abuse itself. The survey was concluded after 300 metres of tortuous note-taking, at a point only slightly short of Stephen Bunton's furthest explorations from the previous year.

Returning along the main streamway, the eastern wall of the passage was thoroughly checked for sump headwalls draining from nearby Cueva Blanca (PB4). Two contenders are still possible. One is a submerged tube on the immediate entrance-side of the first rockfall (incidentally, a number of lamprey corpses were found nearby). This may simply be a stream-bypass of the rockfall blockage, but it could equally accept the waters from Inundation sump (in Cueva Blanca) which is known to be fairly adjacent to this area. The other (and perhaps better) possibility is a distinctive floor hole on one side of the main streamway, closer to the entrance of Damper, and consisting of a continuing shallow tube heading off towards the eastern wall. Both of these leads are dubious diving prospects because of their tight nature, but a hydrological connection may be proven by an environmentally sensitive tracing technique such as inert lycopodium spores.

The pair attempted a climb into an aven just inside the PB1 entrance. This was found to be blocked 10 metres up within a flowstone constriction. Many other leads on this western side of

the passage were noticed, but none held major draughts. Surveying these was delayed for a later trip. The data being essential to establish the relationship of the entrance series of both Damper Cave and Cueva Blanca. (Source - Nick Hume).

***Saturday, the 6th: Exploration in the New Order gully yields PB's 30 - 33. Another entrance (PB35) to Gaping Grin. Checking for higher limestone outcropping reveals PB38.***

Stefan and Rolan climbed up the Summit Track to an elevation of 180 metres above sea level, where the limestone first comes into contact with an overlying calcareous siltstone. They then left the track heading south easterly, descending steeply to the head of a major gully that includes New Order (PB5) and Bauhaus (PB6) in its lower reaches. From there, three caves found on the 1986 TCC expedition were relocated and numbered.

PB31 is a 30 metre high rift entrance located in a prominent cliff face on the true left side of the gully. Despite the impressive site, the cave is choked off by breakdown scarcely out of daylight. PB32 contains an estimated 20 metre shaft, which wasn't descended. Nearby, and uphill, are two small holes, the higher of which consists of 15 metres of passage winding down to a constriction. PB30 is an incised rift entrance west of PB31, and a slight draught was noticed. South west of PB32 they found Tree Root Cave (PB33), explored more fully on the following day.

They contoured around the slopes into Xymox gully, passing Orpheus (PB8), and moving beyond to a flatter area of frequent sinkholes, but few caves. One entrance had been previously tape-marked: "no go", though in fact does continue some distance in very narrow passage. South west of the sinkholes, they relocated Jigsaw Cave (found on the 31st of December). Placing number tag PB34, before surface surveying back to the junction of Bauhaus to Aikea overland route. (Source - Stefan Eberhard).

Gavan, Stuart, Trev, and Jim, went to Gaping Grin (PB22 entrance) for one more try at the remaining leads. The latter two mainly occupying themselves with surveying "odds and ends". Gavan explored the southerly bearing passage on the eastern side of the big chamber (looked at by Lew on 1st of January), coming up with the same negative outcome. He was more successful climbing up the western wall of the main chamber, popping out of yet another surface opening (PB35) of this complex system (the ninth so far). The new entrance is located about 20 metres north of the overland turnoff to Gaping Grin.

Gavan and Stuart then headed along the south-westerly bearing passage, to have a go at the undescended 35 metre Black Mariah shaft found on the 2nd of January. One lead at the base of the drop finished at a boulder-choke in black rift passage. Another led to a ledge overlooking Weeno Cave (above station #11), which wasn't descended. Instead, they followed an "elbow-bend" in the passage to a 4 metre drop into rockfall below the 35 metre shaft. From there they were able to connect with Bauhaus streamway in the vicinity of station #35, and returned to the surface via the main (PB6) entrance of Bauhaus. (Source - Gavan Duffy)

Nick headed off for a solo wander up to the base of the summit cliffs of Precipitous Bluff. The aim was to document the true vertical extent of karst features, and perhaps find entrances in a higher re-emergence of limestone than cavers had noted before.

The following summary-profile was determined on the basis of altimeter readings. The caverniferous limestone structure was clearly seen to come into contact with calcareous (fossil bearing) mudstone at 180 metres. Outcroppings of karren were again met with at 250 metres, though the exact point of re-emergence is obscured by the soil mantle. The highest positive limestone sighting was at 350 metres. However, there is a swallet within indeterminate calcareous material at 500 metres (immediately off the south side of the Summit Track), and thus features of true karst are present to quite a high altitude. Above this point there is heavy inundation by glacio-fluvial material from the dolerite summit capping. The only outcropping visible was of horizontally bedded sandstone, between 775-825 metres, directly underneath the columns of the monadnock.

Returning to the level of highest limestone seen (350 metres), a detour was made into a gully leading off the northern side of the Summit Track. A field of numerous and structurally aligned dolines were soon encountered. Most were heavily infilled by sediment, but an outcropping was discovered in the base of a particularly large one (the depression is made distinct by a recent and massive treefall). A slot in the rock issued a reasonable draught of cold air, but was unenterable due to rockfall. Thus some immediately underlying cave passage development is inferred at this altitude (325 metres).

Lower down the hillside (275 metres), a good sized entrance was located within a cliffline (PB38). A short handline enabled access to a sloping mud floor, where another downclimb led to a chamber with a daylight hole 25 metres above. Two passages beyond continued for only short distances to sediment blockages. No other entrances were found on a contour-line return to the track. (Source - Nick Hume).

*Sunday, the 7th: Explorations in Tree Root Cave (PB33) and Bauhaus (PB6). Derigging/surveying in Gaping Grin (PB22). Finding PB's 36-38 above the area of Xmas Cavern (PB18).*

Stef and Rolan went up to explore the pitch in Tree Root Cave. The entrance is located 30 metres directly down the slope on the southern side of the Summit Track, beginning about mid-way between the Bauhaus (PB6) and Persephone (PB17) turnoffs from that track. The cave contains extensive fragile formation and lengthy "fronds" of root systems hanging down from the ceiling along its north-westerly bearing, fossil-canyon passage.

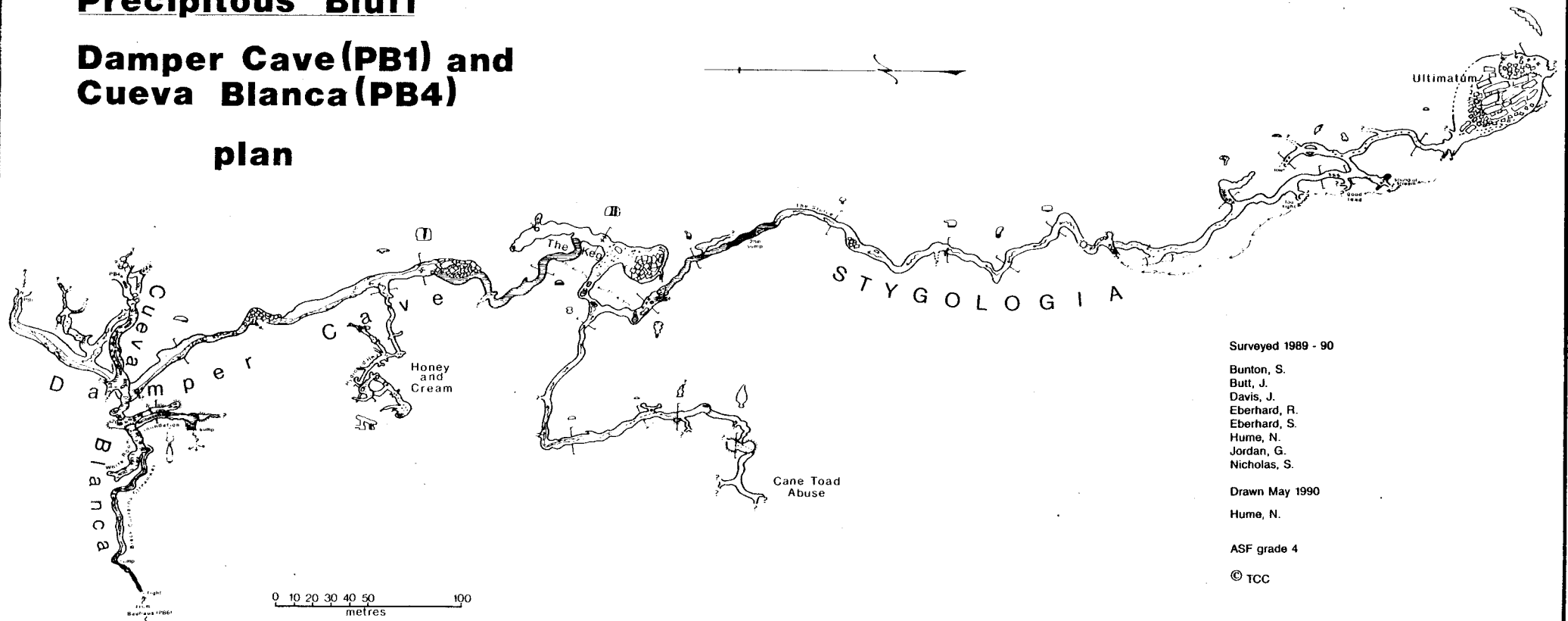
(to be continued in next issue)



# Precipitous Bluff

## Damper Cave (PB1) and Cueva Blanca (PB4)

plan



Surveyed 1989 - 90

Bunton, S.  
Butt, J.  
Davis, J.  
Eberhard, R.  
Eberhard, S.  
Hume, N.  
Jordan, G.  
Nicholas, S.

Drawn May 1990

Hume, N.

ASF grade 4

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