

UBSS TOTES GEBIRGE EXPEDITION 1992

by

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ABSTRACT

A description is given of the new extensions to Organhöhle which resulted from the 1992 expedition. The extensions comprised some 612 m of passage of a largely horizontal nature, covering a depth range of 127 m, with no overall increase in the depth of the cave. Descriptions are given of a further eleven sites noted during the expedition.

INTRODUCTION

The Totes Gebirge of central Austria are a range of limestone Alps rising to around 2300 m A.S.L. The area, in particular the west of the area, has been found to contain many significant cave systems. In 1989 and 1990 this Society mounted expeditions to explore an area on the north west of the massif, west of lake Wildensee. Details of these expeditions, along with an account of the topography and geology of the area can be found in Drewery *et al.*, 1992. The most significant find of the 1990 expedition was Organhöhle, a largely vertical system 305 m deep. In 1992 an expedition returned to the same area to further explore the caves of the area and in particular to continue exploration of Organhöhle.

A 10 man expedition was based in the area for a total of three weeks and as in previous years, a camp was established in the expedition area from which exploration was carried out. The search for new entrances was concentrated on the area south east of Hohes Augst-Eck. One large entrance, BS30, was found in this area, and a description is given below. Time was also spent in the area close to the "Bivi Cave". Although this area was thought to have been extensively examined by the Lancaster University Speleological Society (LUSS) expeditions of 1987, 1988 and 1989 (Ibberson, 1987, 1988 and 1989), seven previously unnoted entrances were discovered, though none yielded significant amounts of cave passage.

Much effort was put into the further exploration of Organhöhle and resulted in the finding of a major extension.

EXTENSIONS TO ORGANHÖHLE

Four main areas of the cave were selected for further examination, on the basis of observations made during the 1990 expedition. These were:

1. The pitch head of the penultimate pitch (p31). This is reached via a horizontal phreatic passage and there is a noticeable draught in this section of the cave which is no longer evident at the foot of the pitch itself. A possible continuation could be seen in the shaft wall opposite the pitch head. This was reached by an exposed

traverse of the unstable vertical wall of the shaft, but the expected continuation proved to be merely a collection of muddy recesses and small solution chambers.

2. A side passage noticed in 1990. Located just after the mud climb at the beginning of the phreatic passage leading from The Hall of the Flying Boulders to p31. This was not pushed in order to avoid damaging mud formations, but on closer examination turned out to lead to a short section of cave with an estimated passage length of 25 m. After crossing and climbing a mud bank the section splits, the left narrowing down to a rift, and soon becoming impassable. The right passage continues as a clean passage before dropping down into the Water Chamber, with a 3 m climb. The chamber itself, 4 m by 8 m, is clean and apparently well-washed, with a small window reconnecting to The Hall of the Flying Boulders. A small climb at the end of The Water Chamber leads to a 10 m pitch, descending to a mud-filled passage with a small stream with no way on. Above the pitch is an unstable mud bank which leads to what appears to be an aven, but the climb was not attempted as no draught was apparent.

3. A short extension off the third pitch. This was opposite the window at the head of Topher's pitch, with a small passage and chamber with a group of stalactites, comparatively unusual in the cave. A rift climb of 6 m led to a very tight mud-filled passage, at around the same height as the Organ Grinder, and therefore probably associated with it, before being separated by the shaft which now forms the third pitch.

4. Haferflochen. The most significant discoveries of the 1992 expedition came from pursuing an apparently minor lead, examined almost as an afterthought. This was at base of the third pitch, p42, and had been found by Joe Oates in 1990, but not pushed due to the distractions of other, more promising, leads.

The way on at this point was reached after a 3 m climb to a ledge from the base of the third pitch. Two tight tubes led off from this ledge, one being choked after a 6 m descent and the other dropping a short distance through two tight and awkward sections, before landing in a small chamber. The rock in this area is extensively honeycombed and sharp, necessitating an extremely awkward and twisting route past flakes and spikes. In addition, deep holes in the floor offered excellent potential for loss of tackle bags. This section, although short, was soon named "Son of Organ Grinder".

From the small chamber a climb up a small tube to the right opens out into a large, clean-washed pitch. This was descended for 18 m to a ledge from which a short climb up leads to the base of a similar parallel shaft, which appeared to carry more water. The rock was fluted and fossiliferous limestone, similar in character to the top of Toccata and Fugue. An impassably tight tube also led off from the ledge. Below the ledge a squeeze leads to a 4 m drop to a small chamber and a further 6 m drop into a similar chamber, before ending in a 0.25 m wide winding fissure. This final chamber also communicates via another fissure to what appears to be the base of another wet shaft, but this fissure was also too tight to be passed.

Back in the small chamber near the pitch head an awkward hole in the floor gives access to a mud floored low crawl, opening into a high, narrow rift. A climb over a rock spike leads to an elongate chamber with a tight tube descending

through the floor. This tube was not draughting, and was considered to be too constricted for safe exploration.

At the far end of the elongate chamber the rift continues to a 'T' junction. To the left is a floor tube which descends 3 m until choked with mud. Above the floor tube is a steep, winding upward rift which becomes increasingly tight and awkward, before becoming too narrow. To the right the passage forks as well, with an upward rift to the right which soon becomes too tight, and a tube to the left, leading to a pitch head.

Although unpromising and muddy in appearance, stones dropped down this pitch gave a clear ringing sound from contact with a flake of rock some 4 m down, which gave rise to the name Pitch from the Planet Gong. The pitch is 6 m long, landing in a large boulder chamber, with a climb down through the boulders leading to a spacious downward passage with various avens and roof tubes. This passage briefly becomes low with a sandy floor and emerges at the edge of a wide, clean-washed 10 m deep shaft, with an impassable tight fissure leading off from the base. This shaft was christened Piss Pot, and proved a great convenience to the explorers of the series on numerous occasions. An unstable traverse across a sand bank to the right of the pitch head gave access to the large boulder floored chamber on the far side of the pitch.

Three passages lead off from the boulder floored chamber, two descending and one ascending. The left hand downward passage contains many evaporitic (pop-corn) calcite formations, and small clusters of needle-like crystals (Figure 2). It leads via two downhill climbs to a sand floored chamber with fine roof pendants, but no way on (Figure 3). The right hand downward passage is followed over boulders, and then levels off in a pleasant, high sandy passage containing many bat remains. This passage changes character abruptly with a climb up over a sand bank into another, smaller passage with a triangular section, sand floor, and handsomely scalloped white walls (Figure 4). This leads up at an initial angle of around thirty degrees, increasing until it reaches the base of an inclined aven, which was climbed for 12 m until an unstable jammed boulder, "Obelix's Revenge", stopped further progress.

The upward passage from Piss Pot shaft leads up at an angle of around 40° over impressive moonmilk deposits and with several short climbs over rock ridges. The passage levels off in an area with many avens and roof tubes, one of which was later found to communicate with a significant amount of new passage, and will be described below.

This horizontal section continues for some way along large passage until a climb through a strongly draughting rift leads to a pitch head. The pitch descends for 18 m down a steeply inclined wall to land in a large chamber with a boulder floor. Measuring around 40 m long and 10 m wide, with an arched ceiling up to 15 m high, the chamber, subsequently named "If I should fall from grace with God", was an impressive sight in its own right. The floor sloped steadily upwards to a short climb over massive unstable boulders before the chamber terminated at an overhead boulder choke. Although this was draughting strongly, it was decided that its extreme instability was a potent argument against any attempt at pushing the choke. A shaft in the floor of the chamber near the base of the



Figure 2. *Evaporitic formations in Haferflochen Series* (Photograph: S.B. Cottle)

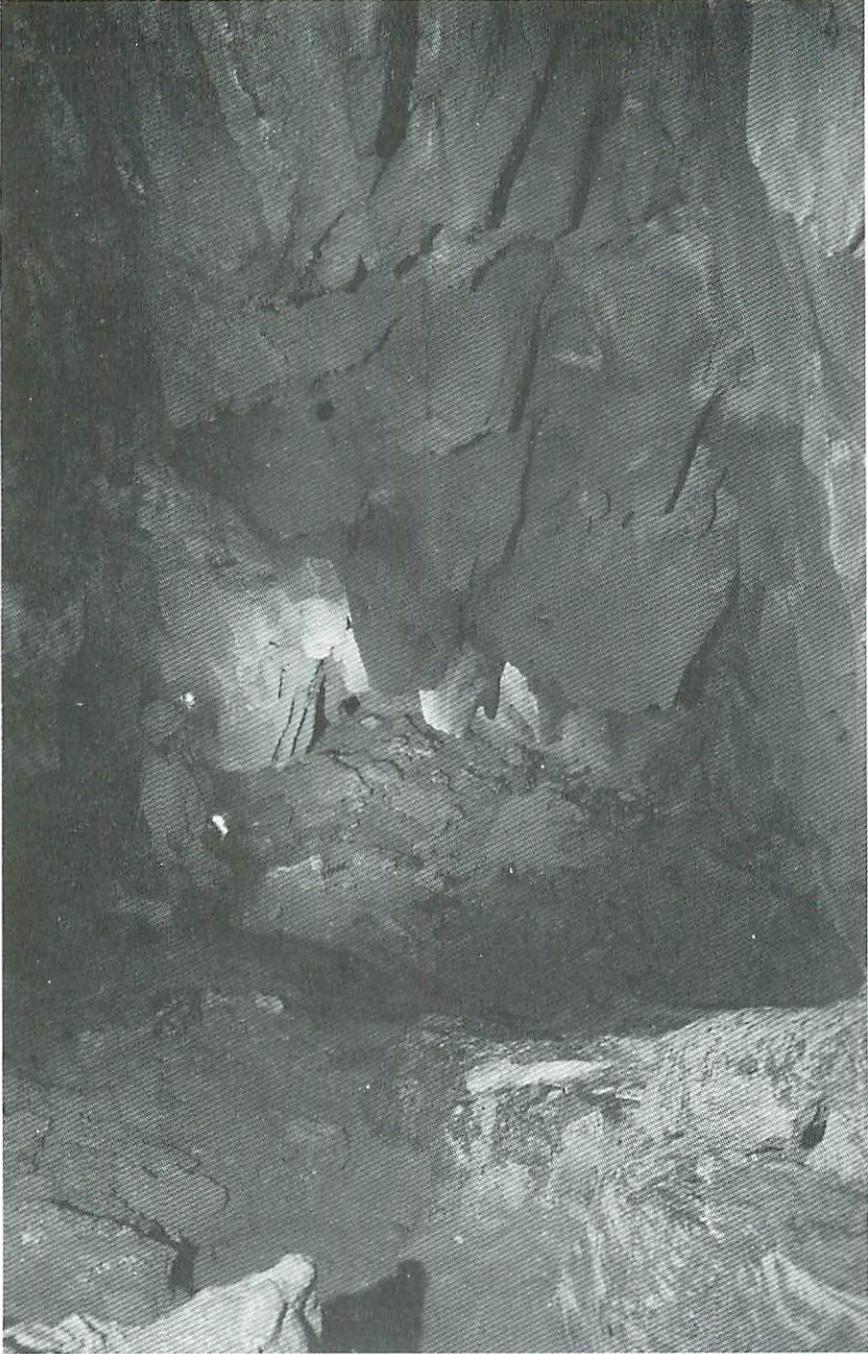


Figure 3. *Roof Pendants, Haferflochen Series* (Photograph: S.B. Cottle)

entrance pitch was descended, but bottomed after around 10 m. A second short pitch at the far end of the chamber also turned out to be blind. Both of these contained particularly sharp rock, which, coupled with the quantity of loose material, made the descents both unpleasant and hazardous.

The roof tube mentioned above is reached by a climb of about 30 m, over fairly loose and slippery rock with a light covering of moonmilk. A handline was put on this climb. At the top a passage leads off to one side, the entrance being well-decorated with small stalactites covered in evaporitic formations. The passage itself is level and phreatic and around 1-1.5 m in diameter with a sandy floor, wet in places. A short traverse around a large (4 m) boulder leads to a rift which opens into a substantial chamber. Again the ceiling is well-decorated with stalactites, covered with evaporitic formations. The floor is covered with boulders, as was usual with the chambers in the cave, and the chamber itself, named PDIAC, was around 15 m long, by about 10 m wide. At the far end another small pitch led down, but was bottomed at 8 m. There were three possible leads, but all quickly became impassably tight.

Back before the chamber a precarious steep climb above the large boulder leads to a 1 m diameter rock, wedged tenuously in a window, apparently leading to another passage. This rock moved alarmingly, but a mantleshelf move, enlivened by rope jam at a critical point, enabled the rock to be passed without dislocation of rock or climber. This leads through two small chambers to a long upward rift, which led over several small climbs, twisting steadily upwards before eventually reaching a committing climb, which was not attempted due to lack of gear. This point marked the furthest extent of the explorations of 1992.

DISCUSSION

Haferflochen differs from the areas of the cave explored previously in its general structure. The parts of the cave explored in 1990 were predominantly wide vertical shafts, many of which terminate in narrow winding rifts which carry the water from the shafts. The 1988 LUSS report often mentioned constantly wet pitches, presumably due to extensive snow cover in 1987 and 1988. In 1990 and 1992 there was minimal snow cover and conditions underground were correspondingly dry. Pitches only became wet for a brief period during heavy surface showers.

Haferflochen was predominantly large sloping passages with little sign of water. The walls of the passages in some areas were well-decorated with evaporitic formations and small rosettes of needle crystals. The general arrangement of the passages in Haferflochen was more complex than the rest of the cave, with many roof tubes and avens, as well as various small tight tubes in inaccessible areas of the main known passages. It is thus highly probable that another expedition to the cave would result in further substantial extensions.

However, the logistical problems of the area in general and Organhöhle in particular should not be underestimated. The problems of the area are partly due to its inaccessibility, with an arduous five hour walk from the nearest road to the "Bivi Cave", and another hour across the plateau to the entrance of



Figure 4. *Scalloped Passage, Haferflochen Series* (Photograph: S.B. Cottle)

Organhöhle. The lack of reliable surface water on the plateau and the climatic extremes further add to the complications of the area. An example of such problems is the fact that the four week expedition experienced weather conditions ranging from high temperatures and sunburn, through to thunderstorms, torrential rain, blizzards and a 20 cm fall of snow. The problems of the cave include the cold, with an underground temperature of 0.5° centigrade measured in 1990, unstable and brittle rock leading to difficulties in arranging reliable rigging and the generally strenuous nature of the cave due to the large pitches and awkward horizontal sections.

These factors combined with the general inaccessibility of the area make the prospects of staging a rescue from the lower reaches of the cave appear very daunting. A small team would almost certainly be unable to effect a successful self-rescue of an incapacitated casualty beyond the Organ Grinder. Any future expedition should carefully consider the consequences of such an incident and make preparations to ensure that a casualty could be maintained in a stable condition and not succumb to hypothermia before assistance arrived.

1992 EXPEDITION CAVE NOTES

BS26. 13°50'22"E. 47°42'22"N. Alt. 1815 m.

In a surface groove 4 m deep running gently down at 255° was the long ice plug which provided the water supply. A draughting entrance at the base of the groove slopes down to small boulder chamber and further 3 m drop. A draught comes up through boulders in the floor. There is no way on.

BS27a and b. 13°49'53"E. 47°42'05"N. Alt. 1890 m.

70 m west of BS17 at same level. A small, body-sized round tunnel goes straight into the hill. There is a strong draught and the passage connects to BS27b.

BS28. 13°49'51"E. 47°42'02"N. Alt. 1925 m.

A small vertical entrance near the top of the BS17 ridge above BS27. A 16 m ladder gives access to a boulder choked floor. There is no way on.

BS29. 13°49'57"E. 47°41'59"N. Alt. 1895 m.

Beyond BS28 over the ridge is a large pot, 15 m deep. An ice plug leads onto a sloping floor to a boulder choke at a depth of around 25 m. A large aven above was not climbed.

BS30. 13°50'24"E. 47°41'49"N. Alt. 1840 m.

The cave is located 700 m east south east of the summit of Hohes Augst-Eck. There are three entrances at the foot of a small cliff. The larger, middle, one drops down a 45° climb, for which a handline was used, for a distance of 40 m to a chamber. From here a narrow vadose trench in a large passage continues down a series of steps and short pitches to the head of a large pot. A traverse around the pot leads to a bridge on the far side from which a free-hanging pitch of 33 m drops into a large chamber, some 40 m by 20 m. There are two ways on from this chamber, the first of which leads via a squeeze into a steeply ascending and unstable boulder floored passage. A boulder choke prevented further progress. The second way is a horizontal phreatic passage, with no draught, which soon becomes too tight. At the opposite end of the chamber from the pitch is a possible continuation high in the wall. An attempt was made to climb this and some 20 m of progress was made. Approximately 15 m remained to be climbed.

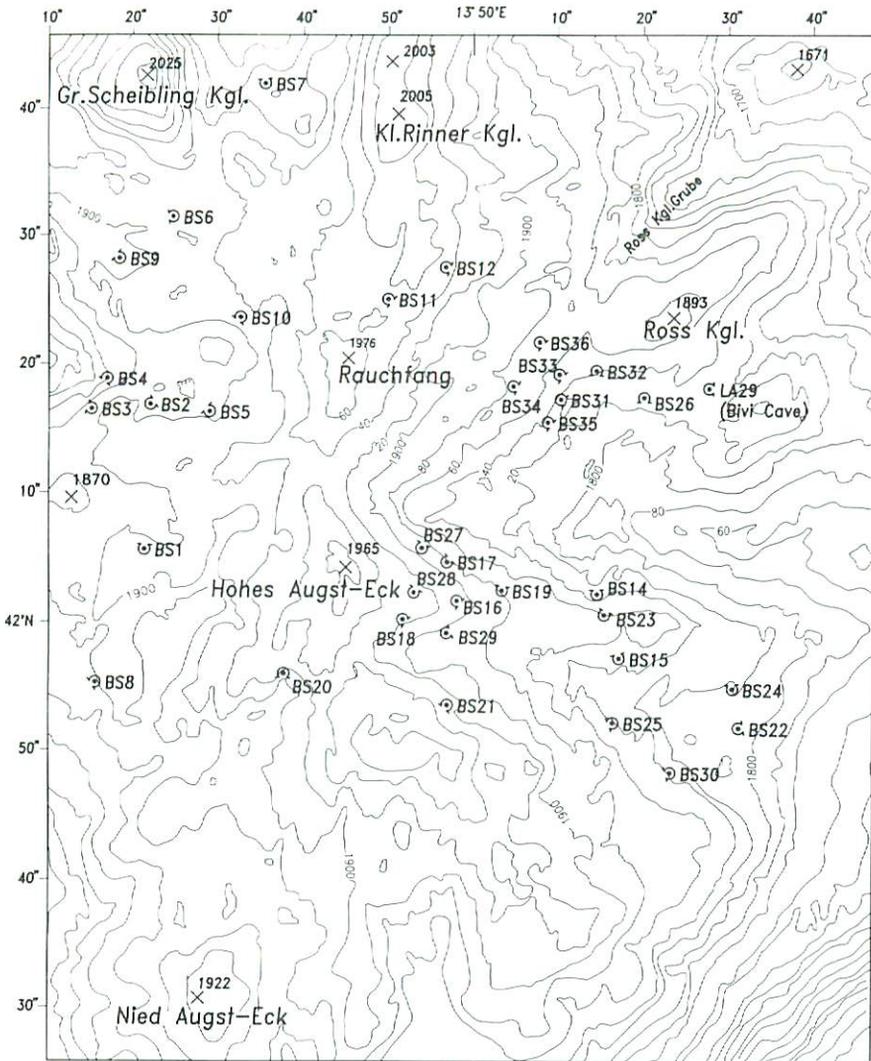


Figure 5. Map of the Expedition area, showing cave entrances.

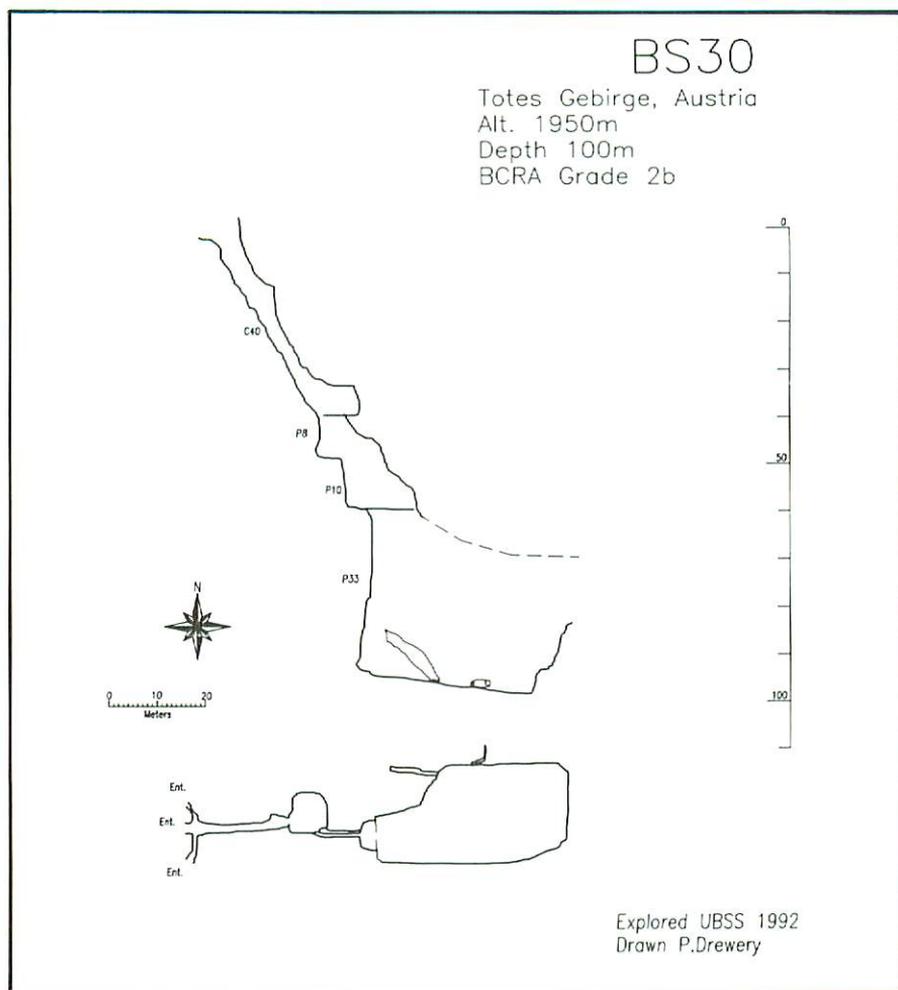


Figure 6. Survey of BS30.

BS31. $13^{\circ}50'10''\text{E}$. $47^{\circ}42'16''\text{N}$. Alt. 1820 m.

An elliptical shaft, $2.5\text{ m} \times 1\text{ m}$, descends straight for 10 m to a cobble floor.

BS32. $13^{\circ}50'14''\text{E}$. $47^{\circ}42'19''\text{N}$. Alt. 1840 m.

A straight elliptical shaft, with twin entrances, descends about 13 m to a cobble floor.

BS33. $13^{\circ}50'10''\text{E}$. $47^{\circ}42'19''\text{N}$. Alt. 1855 m.

An open surface shake hole gives a tight descent to total depth of 10 m. There is a too-tight rift leading south, a crawl under boulders to the north leads to a short blind pitch of 8-10 m.

BS34. $13^{\circ}50'04''\text{E}$. $47^{\circ}42'17''\text{N}$. Alt. 1875 m.

A 10 m entrance pitch leads to an elongate chamber. A rift leads off to the right at the far end of the chamber, sloping down at once to a small boulder chamber from which,

at the far end, daylight is visible through boulders. In the floor of the chamber a squeeze through boulders leads to a short pitch which was not descended, but had no noticeable draught.

BS35. 13°50'08"E. 47°42'14"N. Alt. 1835 m.

A large open rift in pavement, 9-10 m deep, with a boulder floor. There are no possible leads.

BS36. 13°50'08"E. 47°42'22"N. Alt. 1875 m.

A 35 m shaft landed on a snow plug. Descents between the ice and cave wall were all choked by snow.

ACKNOWLEDGEMENTS

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APPENDIX A

LOGISTICAL FACTORS

The first priority of the expedition was logistical and involved carrying supplies up to the "Bivi Cave" on the plateau, a laden walk of some five hours, and organising the cave and water supply. In previous years the water had been collected from a small spring, fed by meltwater from a snow patch further up the mountain. The winter of 1991/2 had been unusually dry in the area, and the snow patches surviving to late summer were correspondingly small and far between, and thus the traditional water supply was virtually non-existent. This lack of water was potentially the most serious problem, with the nearest alternative supply a four hour round trip away, but fortunately a rapidly diminishing although still extant snowplug was found and an efficient solar still constructed. For the information of other parties in similar situations the best model was a large (2.5 m × 1.3 m) plastic sack, filled with snow in the morning, and then covered with a layer of black plastic. This was placed on a gentle south facing slope and drained by a small hole in a lower corner, to which a carbide gas pipe was attached. This was elevated to produce a silt trap. A considerable amount of work was required each morning to fill the still with snow, but a sunny day would then ensure that an adequate supply of water was available for drinking and cooking in the evening. Constant attention to the still kept the water supply going and was an essential part of the expedition. Long trips underground were arduous and would have been more so if time had to be spent in dealing with an uncertain water supply. After an initial emphasis on building food stocks in the "Bivi Cave", further supplies were carried up with every subsequent trip.

APPENDIX B

EXPEDITION PERSONNEL

Charlie Burton
 Paul Drewery
 Dan Harries
 Bill Miners
 Simon Shaw

Steve Cottle
 Rob Fallows
 Topher Martyn
 Tim Parish
 Jim Walmsley

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Organhöhle

BS17 Totes Gebirge, Austria
 Alt. 1940m
 Depth 305m
 Plan Length 747m
 Total Surveyed Passage Length 1362m
 BCRA Grade 3c

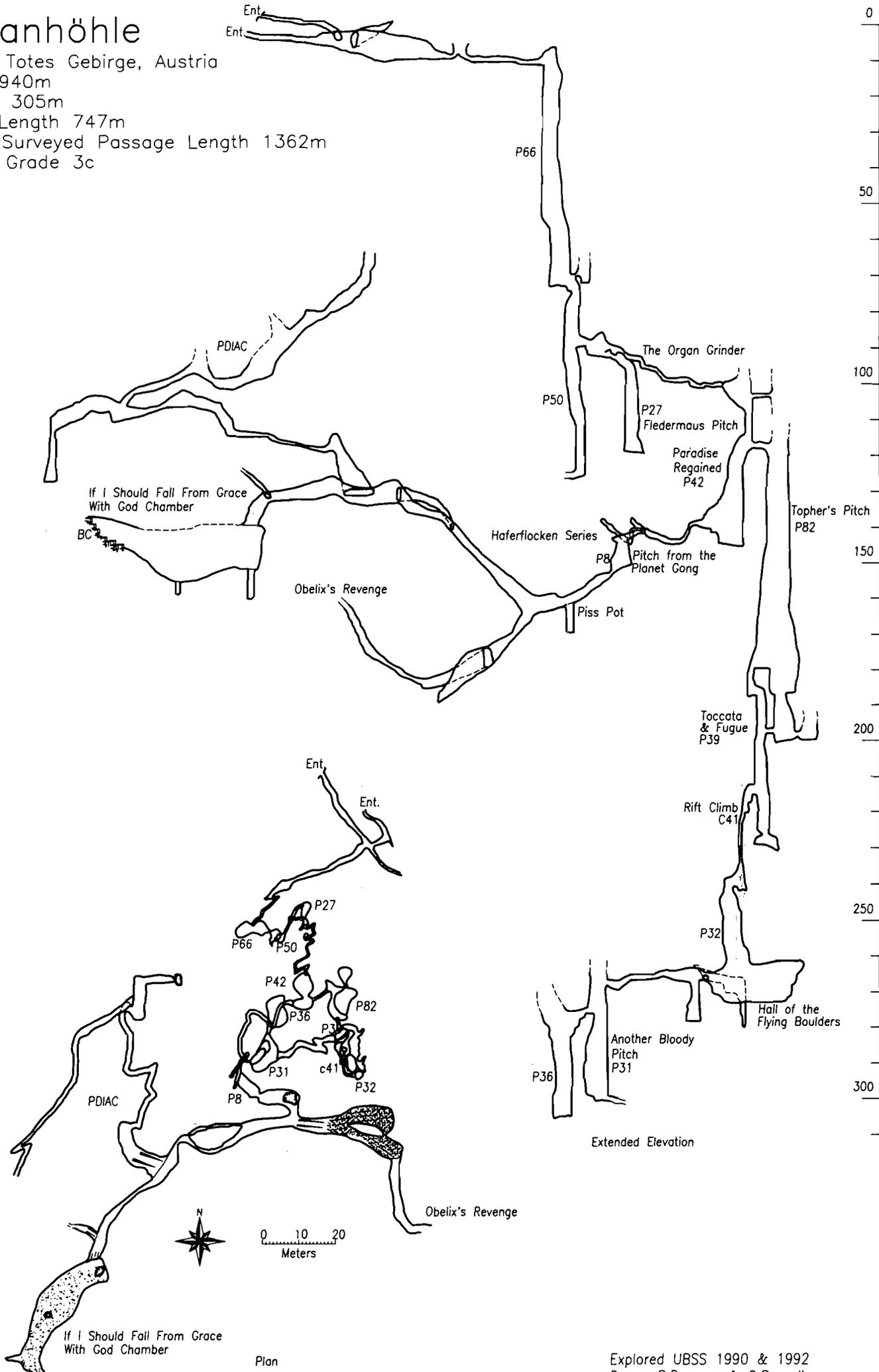


Figure 1 Survey of BS17, Organhöhle.