

CAVE NOTES : COUNTY CLARE, IRELAND

by

A. BOYCOTT and G.J. MULLAN

ABSTRACT

Two new finds were made during the Society's annual visit to Co. Clare in 1997. These were: an additional inlet to Branch Passage Gallery in Poulmagollum and an extension to the main stream passage in Poulmagree. These two passages are described and some comments made on their geomorphic history. The inlet to Poulmagollum is a short passage fed purely by percolation water. The streamway extension, beyond Sump 1, in Poulmagree is a perched, strike controlled passage and may be related to the unexplored passage that feeds the Inlet Sump.

INTRODUCTION

In April and May 1997, members of the Society visited Co. Clare for the 49th successive year. The two new finds that were made on this occasion are testament to the large body of knowledge that has now been built up about the caves in this area. The new find in Poulmagollum was made following the realisation that an open passage was unrecorded and that in Poulmagree was thanks to the efforts of digging parties in previous years.

POULMAGREE

Length: 1847 m. Estimated depth 70 m.

Altitude: 245 m (Upper Poulmagree)

Grid Reference: Clare 4, E54.1, N26.5

M 1215 0362

Td. Crumlin

History of Exploration

The cave was first explored by the Society in 1955 when Upper Poulmagree was followed to an undescended tight pitch, the top of the First Aven of the main cave (Lloyd, 1956). The main cave was explored as far as Sump 1 and surveyed in 1956 -7 (Collingridge and Wits, 1958). Sump 1 was first investigated in drought conditions in July 1975 and a 10 m long joint passage running south west was entered. The sump was dived again 2 weeks later when the water level was 1 m lower than normal. Several side rifts leading off at right angles were entered, but no way on could be found because the diver had zero visibility in the thick mud stirred up from the floor. The Inlet Sump was also dived for 6 m to a mud choke (Jones, 1987).

A tight tube near the Inlet Sump was dug by Julian Griffiths (Cambridge University Caving Club) in 1988. After 10 m, a rift parallel to the approach passage to Sump 1 was entered. Following this passage north, an awkward 2 m drop was reached (Boycott *et al.*, 1991). About 5 m from the bottom of the climb, at a Z-bend, the rift was choked with shale debris. This choke was dug sporadically by the Society from 1991 to 1997. On the 21st of April 1997, after a total of 15 m of digging, the streamway beyond Sump 1 was entered and explored to Sump 2.

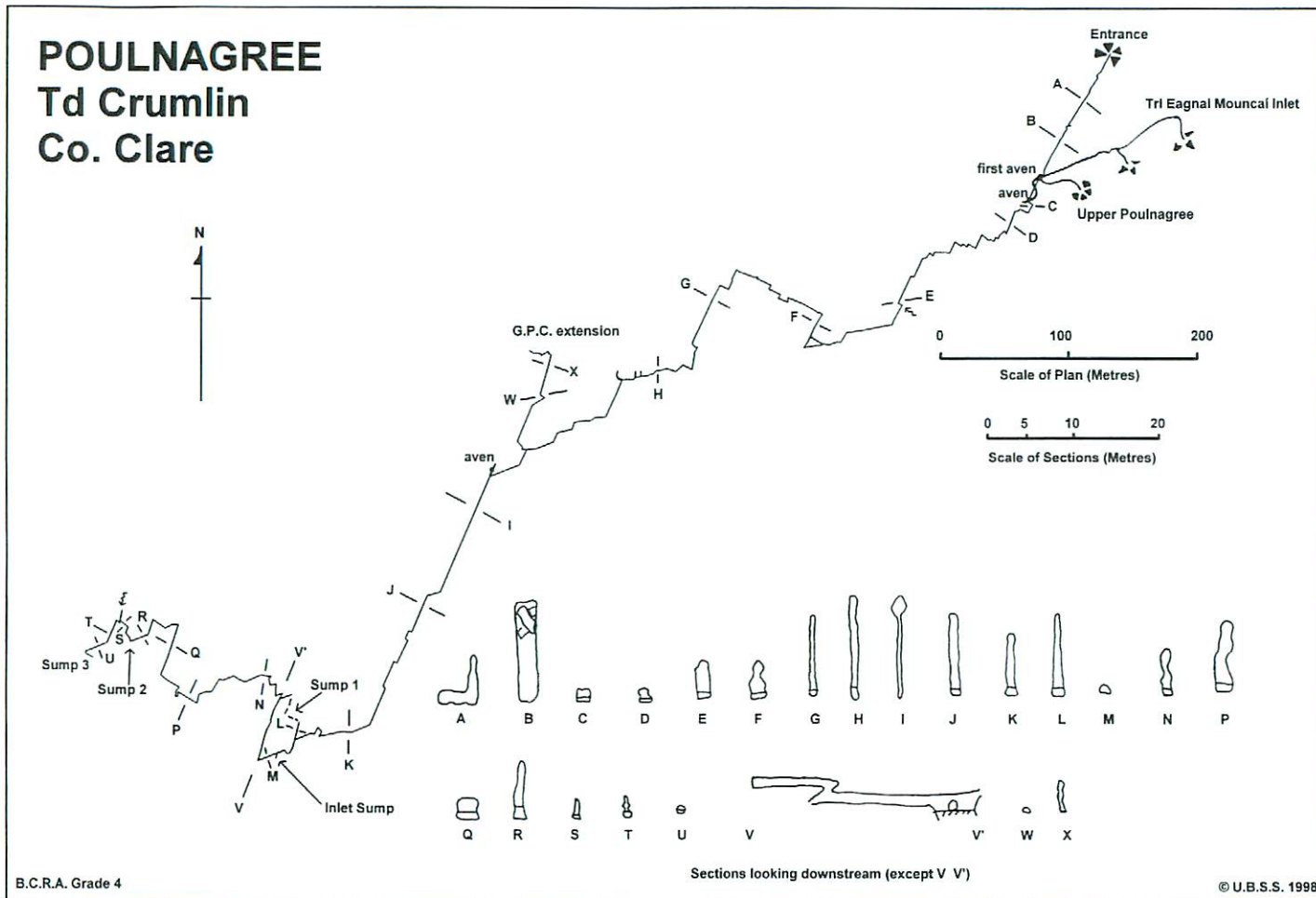


Figure 1. Survey of Poulnagree.

This was passed on 30th December 1997 and the next obstacle, Sump 3, was dived the following day. Exploration has not yet continued through Sump 4.

Description

About 5 m before the Inlet Sump, on the west side of the passage is a small muddy tube. This is horizontal for 5 m to a U-bend, then slopes up at 30° and becomes tighter. After 7 m, a 2 m high rift, parallel to the approach passage to sump 1, is entered. Following this passage north, an awkward 2 m drop is reached. This is easy to descend, but very difficult to climb up unaided. An 8 mm spit has been placed here, and it is advisable to use a 3 m ladder. At the bottom of the climb a crawl over shale debris leads to a tight Z-bend, followed by a flat-out crawl in the roof of the rift for 15 m to a further dug squeeze. The mud floor drops away to a deep pool. This can be traversed over with difficulty. The main stream enters the pool from a sump on the right. At this point the passage is 1 m wide and 4 m high. From here 250 m of joint controlled passage, normally 1-2 m wide and 3-4 m high, is followed. At the first bend is a well decorated aven, with a possible high level inlet passage which has not yet been entered. There are no other inlets between here and sump 2.

After 180m the passage lowers to 1m high, with 0.3 m of airspace (Duck 1). The walls from here on are muddy and 70 m further on Sump 2 is reached. This is about 8 m long, with three airbells, and had a small airspace when first found. Between Sumps 2 and 3 is a further 60 m of joint controlled streamway of which the first part is 3 -4 m high canyon passage but the last third is an elliptical tube, 2 -3 m in diameter and at least half-full of water. The tube continues into Sump 3, 15 m long and followed by a 10 m long section of passage with waist-deep water leading to Sump 4. This has not yet been dived.

Geomorphology

At first sight, the stream passage beyond Sump 1 would seem to be the continuation of the upstream passage. This simple idea does not, however, take into account all the detail. Firstly, it is noteworthy that both Sumps 1 and 2 are at virtually the same elevation, 175 m AOD. This is considerably higher than that of the terminal sumps in the nearby caves, Poll Ballynahown (138 m AOD) and Poulomega (140 m AOD), and thus well above the major regional aquiclude postulated by Judd and Mullan (1995). These sumps must therefore be perched above a more minor feature such as a chert or shale band, which may well be breached, farther down, by a pitch of comparable (about 20 m) length to those in the other two caves. However, there are indications that the water backs up between Sump 2 and the duck, implying that the continuation is constricted. Secondly, the orientation of the cave has altered from generally south, down dip, to generally west. Flow along the strike in this section of passage is a consequence of perching, as dip cannot be a major control over passage direction. This is similar to, although not as spectacular as, the complete reversal of flow direction, to up-dip, seen in Poll Ballynahown immediately before the pitch.

Taking the above into account, it seems unlikely that the simple joint influenced stream passage found before Sump 1 should be found after it. The key to explaining this is the high choked rift passage that was dug to bypass the sump. The diggers noted that, before they back-filled it with their spoil, the southerly end of this rift, the most southerly point in the cave, draughted almost as much as their dig. This would seem to indicate the existence of more cave passage in that direction. Any such passage would presumably have been formed by the stream

flowing from the inlet sump, before it cut to its present lower level. It may be, therefore that the Poulmagree II streamway is, in genetic terms, actually the continuation of the inlet passage rather than the Poulmagree I passage.

Poulmagree has recently (August 1996) been dye-traced again, as part of a re-investigation of sites on the south side of Knockauns (Bunce, 1997). This test, using leucophor, served to confirm that the water resurges at Lackaniska resurgence (A16) in Oughtdarra (Self *et al.*, 1980).

SURVEY

The survey of the extensions between Sump 1 and Sump 2 was carried out on the 23rd of April 1997, using Suunto instruments read to the nearest half degree and a Fibron tape read to the nearest centimetre. The data was reduced using the shareware program "Compass", which was also used to prepare the line survey. The 1956/7 survey was carried out using a hand bearing, liquid filled prismatic compass, wire reinforced linen tape, and simple clinometer, although readings were only taken with the clinometer for obviously steep legs. The depth of Sump 1 below the entrance was therefore checked using an altimeter which showed the depth quoted in Self (1981) to be accurate to within 5 m. The original survey data of the main cave from 1956/7 was also entered into the program to combine with the new survey at the junction of the passage from Sump 1 to the inlet sump, and the route out. The original survey station could not be located precisely, but is within 1 metre horizontally of the new one at the junction of the surveys. The survey data for the extension to the inlet passage made by Galway Pothole Club in 1989 (Gibson, 1989) was kindly supplied by Dr. Ivan Gibson. The original survey data for Upper Poulmagree and Tri Eagnai Mouncaí Inlet is not available and these parts have been drawn in from the survey in Walker (1977). The passage between Sumps 2 and 3 was surveyed to a lower standard on the 31st of December 1997.



Figure 2. *Poulmagollum Branch Passage Gallery Oxbow Inlet at Section 1.*

south-east and takes on the rectangular canyon shape, with slightly elliptical roof, that it maintains until it joins the more northerly of the ox-bow passages on the east of Branch Passage Gallery. The canyon has expanded into wider circular chambers at two points, one of which has a fine moonmilk bank, and about 23 m from its junction with the ox-bow it intersects a finely decorated 7 m high aven on its north side.

Previous descriptions (e.g. that in Self, 1981) of the ox-bows to Branch Passage Gallery are misleading in that two distinct passages have been described. There is only one oxbow, but it may be entered from the main passage in at least four places.

Geomorphology

This short passage is one of very few inlets to be found on the east side of the cave. It does not appear to continue beyond its explored end, except as an impassable low bedding cave. It seems to have developed at or beneath a specific horizon in the rock where sufficient percolation water has come together to enable a discrete passage to be formed. This does not seem to be the *Productus* bed that roofs large parts of the cave. It is an example of an inlet passage well away from the shale edge and therefore fed purely by percolation water. Such passages have been only rarely identified in the past.

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