

EXPLORATION REPORTS

New Discoveries in the Maze Area of Pollnagollum - Pollelva System

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INTRODUCTION

Pollnagollum is one of the most famous caves in Ireland. It contains several popular round trips and through trips and is probably visited by several thousand cavers each year, however many side passages and areas remain under explored. One such area is the Maze at the southern end of the main streamway. A re-survey of this area has clarified some little known passages and revealed some previously unknown passage which have shed much light on the origins and early development of the cave.

HISTORY OF EXPLORATION

In the Caves of North-West Clare, published by the UBSS (Tratman 1969), the Maze is described as "an intricate series of largely mud filled passages interconnected with each other. The plan shows one route only through it" approximately 230 m is shown on the survey however it is listed as 2360 feet long. In the Caves of County Clare, published in 1981 (Self 1981), the same survey is shown and the length quoted is 1100 m (this is thought to include East Tunnel and Craven Canyon). In 1985 the Cork Speleological Group discovered and surveyed a 530 metre extension to the Maze, the description of which matches E.R. Chamber and Maze Streamway One. Unfortunately the survey was only published in the SUICRO newsletter before the data was lost. On several trips to this area during the 1990's I became aware of a passage that did not relate to the survey (the passage now named South-East Tunnel). Finally in 1998 a group of cavers got lost in this part of the cave prompting a re-survey of the entire area. During the survey an inscription was found on the wall "*RDL - 1949 - pass on this way friend and write the BSA Settle on result.*" showing that at least some of these passages had been visited at a much earlier date. It is believed this inscription was also described in the 1960's. So despite several visits over the last fifty years this area has remained largely unknown. The new survey was started in 1999 and led to the discovery of Maze Streamway Two and the Maze Dry Streamway of which no previous record is known.

MAZE DESCRIPTION

The passages are described from the end of the mainstream dry passage at the point where a right turn is made to reach Pollelva, this is 100 metres after the mainstream is lost under the west wall at the flooded bedding plane. At this point the roof level drops and the main passage continues straight on as a stoop passing the start of East Tunnel on the left. East Tunnel can also be entered by a short muddy crawl at roof level from the starting point. Following the main passage through a shallow pool a walking size passage is reached. To the right leads over a series of blocks and by following the passage to the right the starting point can be regained, but turning left leads to a pile of fallen slabs with a hole at the top called the Letterbox. At the base of this hole are two routes, straight on is South-East Tunnel, which can also be reached in dry conditions by following a low wet passage on the left of the slabs. South-East Tunnel is mostly a walking size canyon passage two metres by 0.7 metres with occasional fallen slabs, it ends after 250 metres where the passage divides into two routes, both are small and almost choked with mud.

Turning to the right at the Letterbox leads to Gour Passage. Gour Passage is a stooping sized passage dropping quickly down a series of gour pools and passing a short oxbow on the left. Forty metres from the Letterbox a stream emerges from the right hand side and briefly flows up the passage before entering a narrow passage to the left, this area is called Harvey's Hideout. The stream passage to the right can be entered via several small passages which all combine into a narrow walking size canyon. After 10 m the water is seen to emerge from a low crack and the passage continues as a muddy crawl for 15 m before it is possible to climb up into the roof of a mud filled canyon. This is blocked in both directions but links to the left with a similar passage further into the cave; and to the right connects to the end of Craven Canyon.

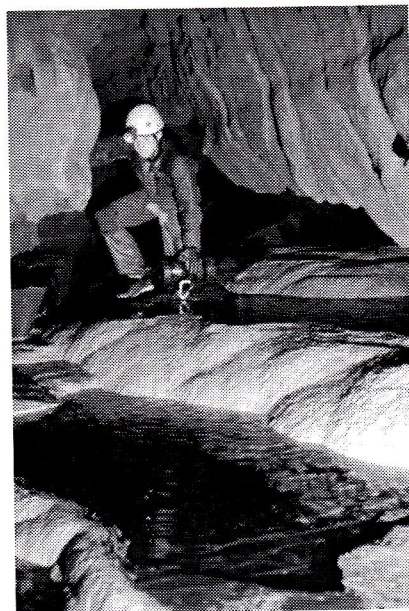
Returning to Harvey's Hideout Gour Passage can be followed a further 15 m to a mud blockage where there is

an occasional stream and sump. Five metres prior to this a short climb up to the right enters an old canyon passage partially filled with mud and blocks; to the right connects with the previous passage described, while left leads to a small chamber. The passage continues behind a large block as a very low clean washed passage which has been followed for 40 metres without conclusion.

Returning to Harvey's Hideout again the main route onwards can be found by following the stream, now called Maze Streamway One, to the left. The stream route itself is narrow in places and an easier route can be found by continuing down Gour Passage for 8 m and taking the next passage to the left partially hidden behind a collapsed block. Initially a dry narrow rift passage it quickly enlarges to walking size and passes several connections to the parallel stream route on the left. After 15 m a small stream emerges from the right and the passage becomes larger. This leads to the start of a breakdown area, this begins as isolated blocks but when the two parallel passages combine there is an extensive boulder choke. The obvious route now is to climb up over this choke but the report by the Cork Speleological Group seems to describe a route under this area. The 1949 inscription can be seen on the right hand wall close to the roof where a series of low crawls at roof level and bouldery pits leads to a squeeze where the walls pinch in and the breakdown ends. After the squeeze a 4 m climb down reaches the floor where progress is initially awkward until the canyon widens and more breakdown is encountered. A gravel floored streamway is then crossed before the passage divides. The roof tube swings to the left into a narrow partially mud filled canyon which ends close to the termination of South-East Tunnel; while straight on a one metre high by two metres wide passage leads over gravel banks to E.R. Chamber.

E.R. Chamber is twenty-five metres long, fifteen metres wide and up to three metres high but is partially filled with breakdown and mud. Three other passages enter the chamber but all are blocked within a short distance. At the southern end of the chamber the streamway is seen again as it emerges from the breakdown and flows into a two metre high and six metre wide phreatic passage with the *Productus* bed well exposed on the floor. Downstream the passage height gradually decreases and there are extensive mud deposits. There are two side passages – "Sweeney's sorrow" on the left after thirty metres; and "Sweeney's joy" which is on the right another thirty metres downstream; these are described later. The main passage follows the stream until the water flows into a very low bedding on the right. An obvious passage continues as a crawl over shale gravel, to a 180-degree bend where the main passage ends at a mud wall. Turning the corner there are two routes, straight on leads after twenty-five metres to a small chamber where three passages are all choked with mud; to the right a flat out

crawl over mud leads to the foot of a ten metre high clean-washed aven. This has been climbed to a point where a low bedding plane can be seen to be choked with well-rounded cobbles.



John Sweeney in Gour Passage

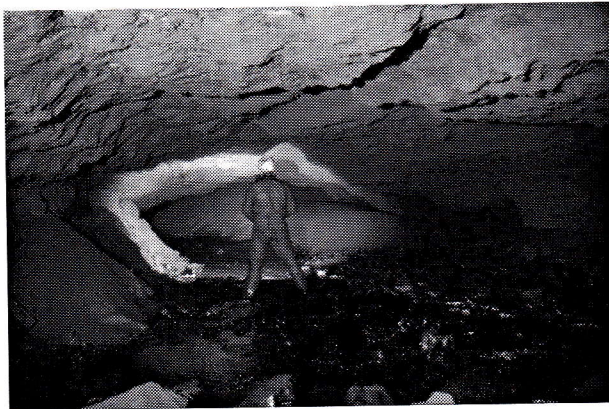
The entrance to "Sweeney's joy" is hidden behind mud covered blocks on the right hand side of the passage looking downstream. It begins as a 1m high bedding plane on the *Productus* bed. The passage slowly decreases to a flat out crawl over gravel banks before turning back to the north-west, fifteen metres further on the passage emerges into a larger passage and swings back to the south as the "Maze Dry Streamway". A tributary passage enters on the right and has been followed for forty metres in a very muddy half-tube passage without conclusion. The "Maze Dry Streamway" is mostly walking size with occasional squeezes past the mud banks that make up the left-hand wall. Towards the end of the passage the height gradually decreases until further progress is prevented.

"Sweeney's sorrow" is an obvious side passage on the left of the main stream passage thirty metres below E.R. Chamber. A fifteen metre muddy crawl leads to a walking size dry canyon, this can be followed to the left for thirty metres before the passage is choked. Just before this point there is a small meandering canyon to the right which soon enters "Maze Streamway Two".

Maze Streamway Two is a well developed phreatic half tube up to 4 metres wide and on average 1.5 metres high. The floor of the passage is developed on the *Productus* bed which is beautifully exposed along much of the passage length. At several points this half tube intersects

fragments of a larger canyon passage also with their floor on the *Productus* bed. Any of these can only be followed a short distance before becoming choked.

Downstream a hands and knees crawl in the half tube leads after 20 metres to where it is possible to stand up as a choked canyon enters from the right. Progress is soon reduced back to a crawl and a squeeze enters a small chamber where all passages are blocked. The continuing passage trends west and can be reached by a low crawl under the right hand wall just before the squeeze. This regains the half tube which is followed for 50 metres past some breakdown before emerging into a three metre high and wide canyon. Unfortunately this is blocked after fifteen metres and progress continues in the half tube which is now partially mud filled. A further fifty metres of decreasing passage size leads to a mud choke, to the right of which a low, wet, gravel choked bedding plane can only be entered for a couple of metres.



Maze Streamway One below ER Chamber

Upstream from Sweeney's sorrow the Maze Streamway Two is a wide half tube for thirty metres before emerging into a two metre high canyon. Again both directions are choked and further progress is made by following the half tube around two 180-degree bends before a larger passage can be followed for twenty metres to an area of breakdown. The passage beyond here contains a large mud bank before reaching a junction. To the right a short passage leads to a climb up to a low muddy, slab filled bedding plane that has been connected to the terminal bedding. In the main passage a low crawl leads to another junction, left leads over mud banks to a squeeze between roof pendants; to the right is an area of breakdown. A very narrow canyon enters from the left and two routes can be followed down to the *Productus* bed with no apparent way on. Climbing up over the breakdown a low phreatic tube is entered which soon leads to the terminal bedding plane. This is ten metres wide but only about twenty-five centimetres high, some progress has been made but is greatly obstructed by slabs.

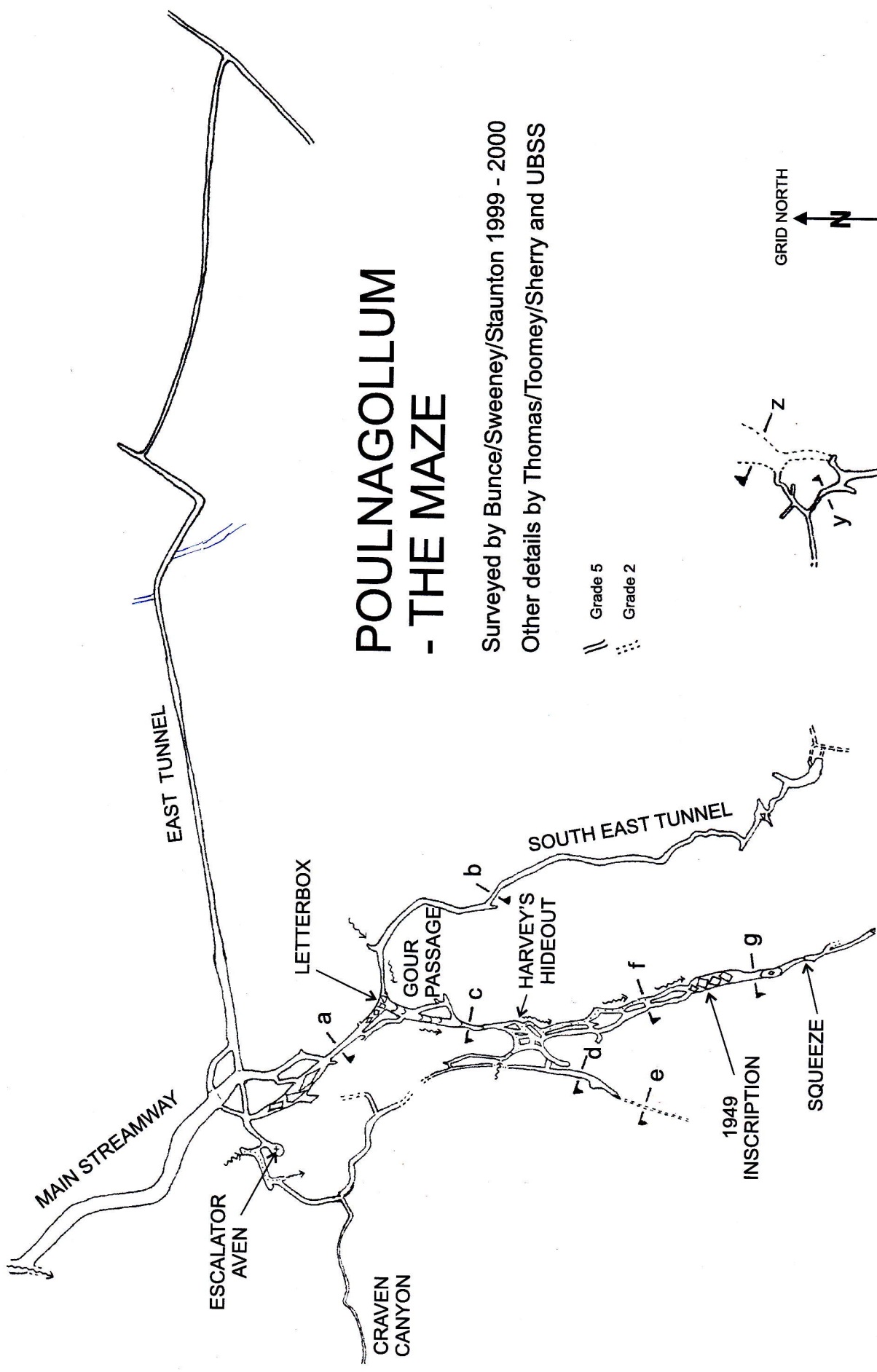
DISCUSSION

The original resurgence point of the initial stages of the Pollnagollum system has long been a subject of debate. This is largely due to the sudden change in direction of the cave at its southern end. Most of the passages trend from north to south until the Maze is reached where the direction dramatically changes to east-west. It has been suggested that the water originally flowed east through East Tunnel directly out into the valley; it has also been suggested that the water may have travelled even further in a south-east direction to resurge at the Fergus Risings. A more detailed understanding of this area is now possible by studying the new survey and the following history is suggested.

The old sediment filled canyon passages of Maze Streamway Two and the short remnant of passage at the end of East Tunnel are thought to be the oldest passages in this area. These represent the original route of a stream draining an old shale margin on Slieve Elva or possibly from north-west Poulacapple to a fossil Killeany resurgence (F0) at a higher level than the present resurgence. This fossil resurgence can be seen as a semi-active flood resurgence about one kilometre north of the present resurgence. The original drainage from Slieve Elva was south and then east through East Tunnel to join this route. Water from the Pollelva area also originally flowed south for a short distance and then east through Craven Canyon, but turned south again before reaching the Maze to flow through the Maze Dry Streamway to the same fossil resurgence.

The development of the Maze started as the Pollnagollum water flowing through East Tunnel began to develop new routes first in South-East Tunnel and then into Maze Streamway One. The Craven Canyon water was also captured by this streamway which consequently developed as the main drain hence the size of this passage. Subsequent to this most if not all of the passages were filled with sediment. This event is presumed to relate to glacial activity meaning that all the above passages were formed pre-glacially. The age relationship between the half tube in Maze Streamway Two and the mud filled canyon is uncertain, it appears that the half tube has formed post glacially. Which would mean that the fossil resurgence was probably active in the immediate post-glacial period, although the source of this water is uncertain.

The present Killeany resurgence has been formed post glacially and is fed by the Pollelva streamway which has now captured the main Pollnagollum stream. Thus the preglacial trend of stream capture to the south and west is being continued. This trend is also seen as the Pollelva water is in turn being captured by the Bullock Pot passage even further to the west.

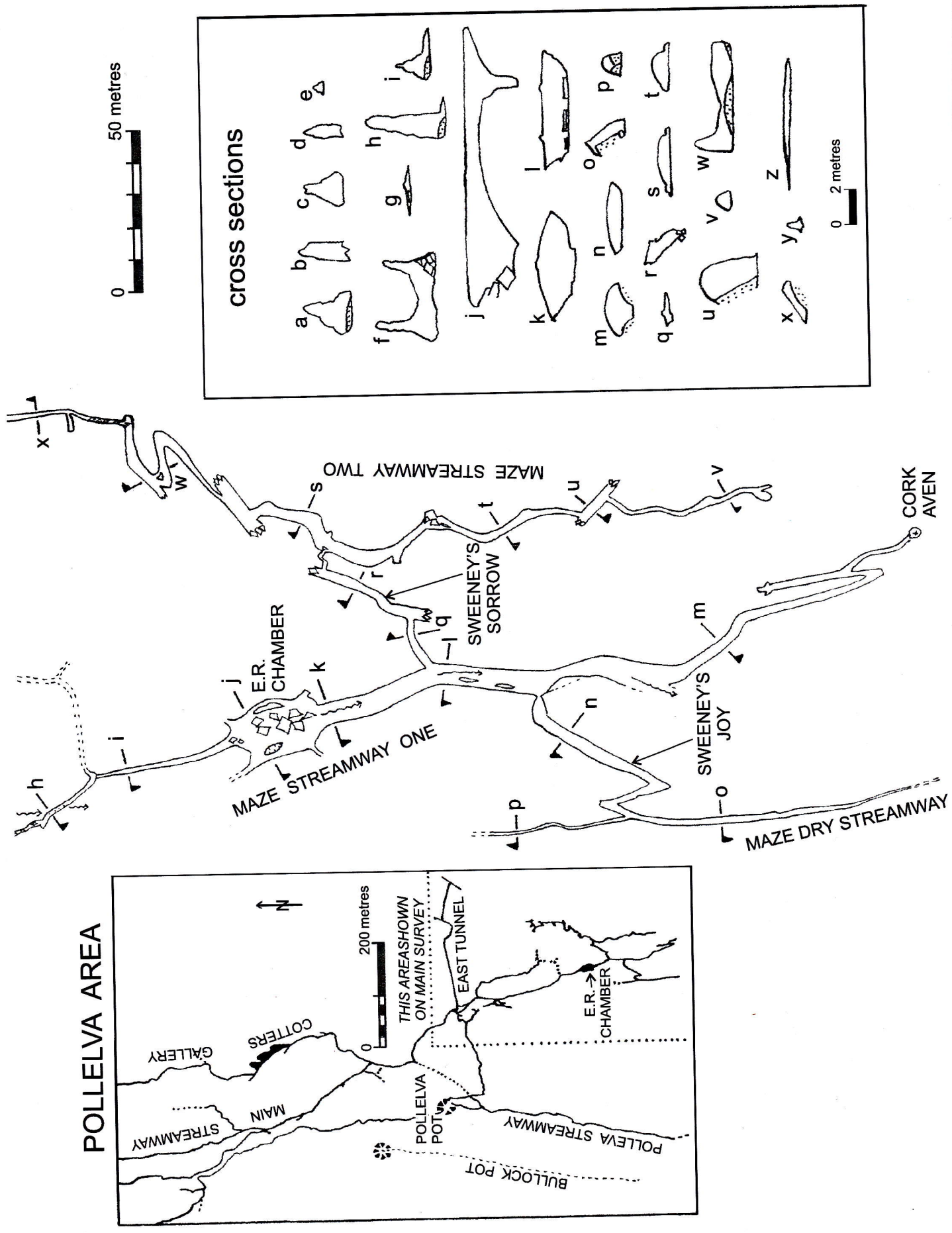


POULNAGOLLUM - THE MAZE

Surveyed by Bunce/Sweeney/Staunton 1999 - 2000
Other details by Thomas/Toomey/Sherry and UBSS

Grade 5
Grade 2

GRID NORTH
N



Another interesting feature is the almost complete absence of any speleothems from the passages to the south of East Tunnel, this compares with profuse flowstone in the Pollelva streamway. The reason for this is unknown.

ROLE OF THE *PRODUCTUS* BED.

"The initial development of many of the passages below Pollnagollum Pothole took place along a particular bed in the limestone. This bed is easily recognisable because it contains very abundant fossils of *Productus giganteus*. Usually it is the top of this bed that is the site of the earliest development, and it forms the roof of Shaft Gallery, Gunman's Cave and Branch Passage Gallery. It forms the roof of the Main Streamway and Branch Passage, High Road and the combined High and Low Road passage. But beyond the High and Low Road the roof plane has been observed to continue the smooth slope down to the Flooded Bedding Plane. Here the roof plane is not following the bedding as the indicator bed ceases to appear in the roof and appears as much as ten feet down the walls. There may be a mono-clinal fold in Poulmagollum that would help to account for this change. The *Productus* bed is seen again in the walls and floor of the Pollelva Streamway, but not in the roof." (E.K. Tratman 1969, in Caves of North-West Clare).

In the area to the south of East Tunnel the *Productus* bed forms the floor of most of the passages, however the roof of these passages is generally three to five metres above this bed indicating it was not important in the original formation of these passages. But when drainage was resumed after the glacial period it appears that the water found it easier to flow at this level than to re-excavate the mud filled passages. This can be seen in Maze Streamway Two where the post-glacial flow seems to have formed the half tube and it is probable that there is an extensive series of anastomosing channels at this level.

FLOODING

There is ample evidence that most of these passages flood to the roof. Probably the safest place is between the 1949 inscription and the squeeze.

SURVEY DETAILS

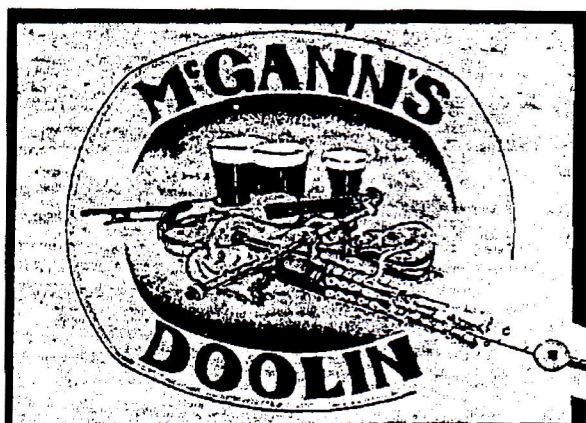
The upper parts of the Maze and the Maze Streamway One were surveyed using a Suunto Compass and Clinometer read to the nearest degree, lengths were measured to the nearest 10 cm. Calculated errors on the closed loops are in the order of one to two percent and a grade of 5C is claimed for the survey. During the survey of Maze Streamway Two and the Maze Dry Streamway both compass and clinometer developed problems and these sections were surveyed using a Silva type 15 compass.

TOTAL LENGTH

As Pollnagollum is the longest cave in Ireland the obvious question remains as to how much of the passage surveyed is "new" passage, and thus how long is the cave now? The quoted length for the Maze in Self's Caves of County Clare is 1100m, this is thought to include East Tunnel (300m) and Craven Canyon (170m) thus the given length of the Maze itself was 630m. Adding to this 530m as surveyed by C.S.G. in 1985 gives a previously known total of 1160m. The total length of the new survey is 1700m, this would indicate 540m of "new" passage. This figure correlates very well with the length of Maze Streamway Two and the Maze Dry Streamway. So it is suggested that this figure be added to the previous total system length giving a new length of 14,560m (surveyed, plus 550m unsurveyed).

REFERENCES

- Self, C. 1981. *The Caves of County Clare*. University of Bristol Speleological Society.
- Tratman, E.K. (Ed.) 1969. *The Caves of North-West Clare, Ireland*. University of Bristol Speleological Society.



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