

THE COOLAGH RIVER CAVE SYSTEM

by
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INTRODUCTION

The Coolagh River Cave was first explored by members of the Yorkshire Ramblers' Club in 1936 and 1937 from the principal swallet of Polldonough (Bartlett 1938). Members of the University of Bristol Spelaeological Society (UBSS) systematically examined the cave in the expeditions of 1949, 1950 and 1951 resulting in the authoritative paper on the cave and its surroundings by Bendall and Pitts (1953). Since then the cave has become justifiably popular and is regarded as a "classic" of the region.

The obvious site for further exploration at the end of Cascade Branch was not investigated until the advent of the wet-suit and the efforts of the South-West Essex Technical College Caving Club (SWETCCC) in April 1970 resulted in a further entrance to the system at Polldonough North. A brief report of their discovery is to be found in their journal "Speleo" (Faulkner 1970). A fourth entrance at Polclabber was found by members of the UBSS in 1974, connecting with Mud Branch, but no report was ever published. A Grade 3 survey of this extension was made in 1978. In 1975 Polldonough North was surveyed to CRG Grade 5 by UBSS but no attempt was made to explore a major inlet to this passage (West Inlet); SWETCCC had previously entered this inlet in 1971 (Faulkner 1971) but had not followed it to its conclusion. A UBSS party in 1978 completed the exploration of this inlet and made a length survey of their discovery. The source of the water for this inlet is a small swallet west of Polldonough North, explored for an estimated 60 metres by UBSS members, probably in 1951. The cave was rediscovered by SWETCCC in 1971 and named Polldonough West. In 1978 the cave was considerably extended by UBSS but the hoped-for connection with the main inlet in Polldonough North was not made.

The purpose of the present paper is to gather together all the new data, mostly unpublished, on this system since the report of Bendall and Pitts.

THE MAIN CAVE

The work of Bendall and Pitts was very thorough and little new information can be given on this part of the cave system: Polldonough, Polldonough South and the Main Drain.

A major paper by Tratman and Ollier (1956) gave code numbers to all the main sites of spelaeological interest in north-west Clare;

Polldonough was given the code B7 and Polldonough South B9. This code system has subsequently been extended to all the spelaeologically relevant sites in the area, and many of the minor sites associated with the Coolagh River Cave System are better known by these code numbers than by their proper names.

A flash flood in 1967 produced a new opening to the surface in Polldonough South at the upstream end of the canal. This new entrance, code numbered B9a, by-passes the main part of the entrance crawl. It can be seen here that the passage is a canyon in the limestone roofed only by drift.

In the Main Drain the climb up to Gour Passage can be free-climbed by very competent climbers, but it is an exceedingly difficult climb and a handline is still recommended as the normal tackle for this pitch. Balcombe's Pot has been investigated and proves to be a simple plunge pool, 5 metres deep.

Explorations in the Terminal Bedding Cave during low water conditions and by cave divers show that the passage continues for 18 metres to an aven which has been ascended to a total height of 32 metres; after a difficult constriction near the top the climbers found that the aven degenerated into tight rifts and the way was blocked by soil and loose rocks. They were clearly audible on the surface at an open rift in the limestone, B10b. During a major flood water resurges from this and other nearby sites showing a 40 metre head of water in the Coolagh River Cave. The Terminal Bedding Cave continues with a rift in the floor and ceiling for a further 12 metres to the sump proper. This has been dived for 20 metres but mudbank constrictions prevented further progress (Savage 1967). The water is known to pass through Pollocloghaun, B10f, a short distance down the valley before it resurges at the intertidal site S3 in Pollsallagh Bay (Perratt and Tratman 1975).

POLLCLABBER

The end of Mud Branch, as explored by Bendall and Pitts, lies close to the swallet Pollclabber, B10. In 1974 a connection was made between the cave and a hole in the swallet depression. At first the local farmer was amused, as he uses this hole for his effluent disposal, but a flood during the winter of 1976 undermined the wall immediately beyond the swallet and the cave is now completely blocked at the surface with earth and boulders. The farmer is unwilling to have the entrance re-opened.

From the entrance boulder choke a passage descends steeply and picks up a small trickle of water (presumably the Pollclabber stream). A junction on the right leads to more boulders. A canyon passage is then followed in a south-westerly direction, up to 6 metres high but usually a little less than 1 metre wide. The upper levels of the canyon are lost and the cave descends to join a prominent north-south rift. The rift is triangular at first, 1 metre high and wide, but the roof soon rises to 4 metres high. The rift is followed for 27 metres north, against the shallow local dip of the strata, but is muddy since the stream has found

a new route to the west. The explorers of 1974 used the latter route, via a gravel crawl, to join the stream canyon of Mud Branch, but this is now completely choked. A small canyon on the east side of the main rift leads to a boulder choke and an optical connection with a passage in the entrance complex. From the north end of the main rift further joint controlled rifts lead to a short climb up into a small muddy chamber. Turning to the south-west via a second muddy chamber, a hole in the floor leads steeply down to the stream canyon of Mud Branch, entering on the stream right.

POLLDONOUGH NORTH

The stream at Polldonough North, B8, sinks and flows under the turf before emerging in a small open canyon blocked by boulders at the southern end. A series of small depressions and open holes are seen down the valley to the most southerly opening which lies just to the north of a drystone wall across the valley; this is the entrance used.

The surface hole drops into a bedding cave containing a thick layer of red peaty mud. This bedding cave leads after a few metres into the roof of a tall and narrow stream canyon, up to 5 metres high but less than 1 metre wide. The roof level can be followed for about fifty metres before the canyon trench suddenly widens at the 1st April Grotto, as named by SWETCCC. It is not possible to descend to the stream without tackle at this point, but back upstream there are several places where a descent can be made. The narrow canyon can then be followed to 1st April Grotto, the first of a series of oxbows which characterize this streamway. These oxbows are bounded at roof and floor by bedding planes and clearly show that it is the lateral weakness of the bedding plane which has allowed the formation of new channels for the downcutting streamway. In places, two levels of oxbow occur as well as the streamway passage, resulting in three independently meandering passages, one above the other.

With the exception of the entrance canyon the cave is of comfortably wide dimensions, though crab-walking is still necessary at times. Immediately below bedding planes there is often a considerable enlargement which compensates for the loss of passage height when the upper canyon leaves as an oxbow. The 1st April Grotto is a choked oxbow formed in the upper beds, the throughfare streamway being in the lowest. This is the most common case and, though some oxbows are passable, only the stream channel is continuously unobstructed.

At 100 metres from the entrance the stream channel is very low and uninviting; the oxbow is roomy and rejoins the streamway without obstruction. Again at 460 metres from the entrance the stream channel is singularly uninviting; the upper levels leave as a high muddy canyon passage, named by SWETCCC "Gloomy Oxbow", but this route cannot be followed past a flowstone obstruction at 60 metres. The way on is a grovel at stream level and this marks a change in the character of the cave. For the next 150 metres a low streamway is followed with bedding

cave crawls to start with and many ducks under flowstone in the decorated canyon which follows. In wet weather the last section of ducks becomes a canal and doubtless sumps after heavy rain since flood debris can be seen in many places in the middle meander level. Immediately after the last duck a small inlet enters from the north, of interest because it flows up an oxbow for 5 metres before joining the mainstream; however it can only be followed for 10 metres. The canyon continues and at 740 metres from the entrance a major inlet enters from the north. This is from Polldonough West, B8a, and is described separately.

At 810 metres an inlet enters from the roof and the canyon continues at a comfortable size until the "chert-topped waterfall" marked on the original survey of Bendall and Pitts. This is at the head of the aptly named Cascade Branch, a delightful passage which joins the main cave at the Lower Main Drain.

Small tributaries do enter the system at other places than those already mentioned, but the only one found in the dry conditions of the 1975 survey was at 270 metres, entering from the east. Throughout the cave the full passage height, including all oxbow levels, is of the order of 5 metres though this lowers to 3 metres towards the southern end of the survey. A detailed study of the geomorphology of this tributary would be an interesting project for a geographer—the streamway alone is 1300 metres long. The gradient from the entrance to the "chert-topped waterfall" (the 1975 survey) is 17.7 metres in 940 metres, or 1.9%; the gradient then steepens in Cascade Branch.

WEST INLET

The West Inlet is the largest of the inlets into Polldonough North, carrying approximately one third of the flow of the mainstream. It is the only inlet which can be entered for any distance, and the only one which joins the mainstream at stream level. At the junction with Polldonough North the inlet is a canyon 5 metres tall, but a few metres upstream a steeply rising floor decreases this to a little less than 3 metres, showing how much greater has been the downcutting in the mainstream compared with in the inlet.

The narrow winding canyon can be followed upstream for a total of 236 metres but only the first 90 metres are of walking height. The passage gradually lowers and at 130 metres from the mainstream tufaceous false-floors occur near the top of the passage. These calcite bridges continue for the next 50 metres. The passage then becomes smaller and more miserable and at the end point reached is a low bedding cave obstructed by banks of cobbles (with the occasional tin can or plastic container of cattle medicine) and with a tortuously winding canyon, far too narrow to use, extending for about one metre above the bedding plane. A very small passage enters at floor level from the east 130 metres from the mainstream, and a small inlet enters at roof level also from the east at 70 metres. No other side passages were seen.

POLLDONOUGH WEST (B8a)

At Polldonough West the entrance to the cave lies in a hollow immediately south of the stream sink. After entering over tin cans and broken bottles a roomy crawl leads over a huge bank of earth and vegetation under a flat bedding plane roof. A strong animal smell is present. The crawl leads into the top of a canyon passage, 4 metres deep. This narrow and very sinuous canyon passage is in the process of being abandoned by a stream which runs along part of the floor, disappearing into bedding cave oxbows periodically and re-emerging further down. After 80 metres the stream is finally lost and the dry canyon continues until further progress is halted at a stalagmite barrier, 115 metres from the entrance.

Just beyond where the stream is last seen there is a hole down through the stony floor of the canyon. The stream is visible in a very small passage, just large enough to be passed. The streamway soon becomes larger and in the first ten metres several oxbows and dry abandoned inlets are seen, vestiges of the process which formed this new watercourse at the expense of the canyon. The passage then becomes coherent as a simple stream canyon with considerable quantities of cobbles on the floor and a sluggish stream tending to form small ponds. The passage height, originally about 1 metre, slowly increases to $1\frac{1}{2}$ metres. As the canyon deepens to 2 metres the cobbles decrease in number until the character of the cave changes to a narrower rock-floored streamway 3 metres high; this occurs about 120 metres from the point of departure from the original canyon. The passage deepens quickly to 4 metres, becoming much narrower and more tortuous. The end point reached is too narrow to be passed, a distance of 236 metres from the entrance to the cave.

APPENDIX

The size of the stream in Polldonough West and in West Inlet, with the similarity of the rubbish seen in the streamways, suggests that these are parts of the same cave. A problem, however is to ask what happens to the old canyon of Polldonough West (and also, perhaps, the top three metres of the terminal rift) for there is no evidence of a high level passage re-entering the system in West Inlet. A detailed search in the roof of the canyon in Polldonough North may provide the answer.

I have estimated the probable distance between the explored ends of Polldonough West and West Inlet as being 30 metres. The combined length of the explored streamways is 472 metres, while the straight line distance is about 400 metres. Unless the cave takes a devious overall course (which a simple length survey is unable to deny) the positions of the end points can be estimated by taking into account the sinuosity of the passage. The form of sinuosity considered is topographic sinuosity, defined as the ratio between the actual stream length and the linear

distance between the end of points. Strictly, I am considering the sinuosity of the cave surveys rather than the line of the stream current, my intention being to obtain a correction factor for the survey rather than geographical data on the cave. My value for the whole length of the 1975 survey of Polldonough North is 1.25, quite a high figure since the cave veers to the west in a broad curve. Polldonough West has similar meanders to Polldonough North and if the overall sinuosities of the caves are the same then the distance between them is 30 metres; for each additional 0.05 sinuosity in Polldonough West the distance is increased by 20 metres. For comparison the exceedingly tortuous Shaft Gallery of Poulmagollum has a sinuosity of 1.39. (Smart 1977).

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COOLAGH RIVER CAVE

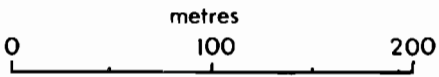
POLLDONOUGH NORTH

County Clare

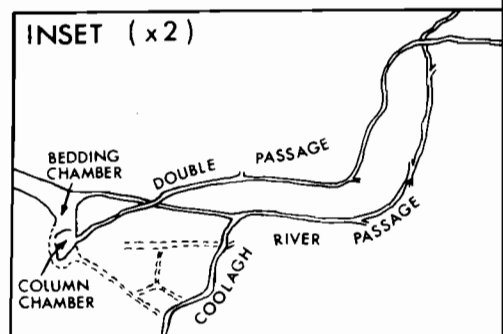
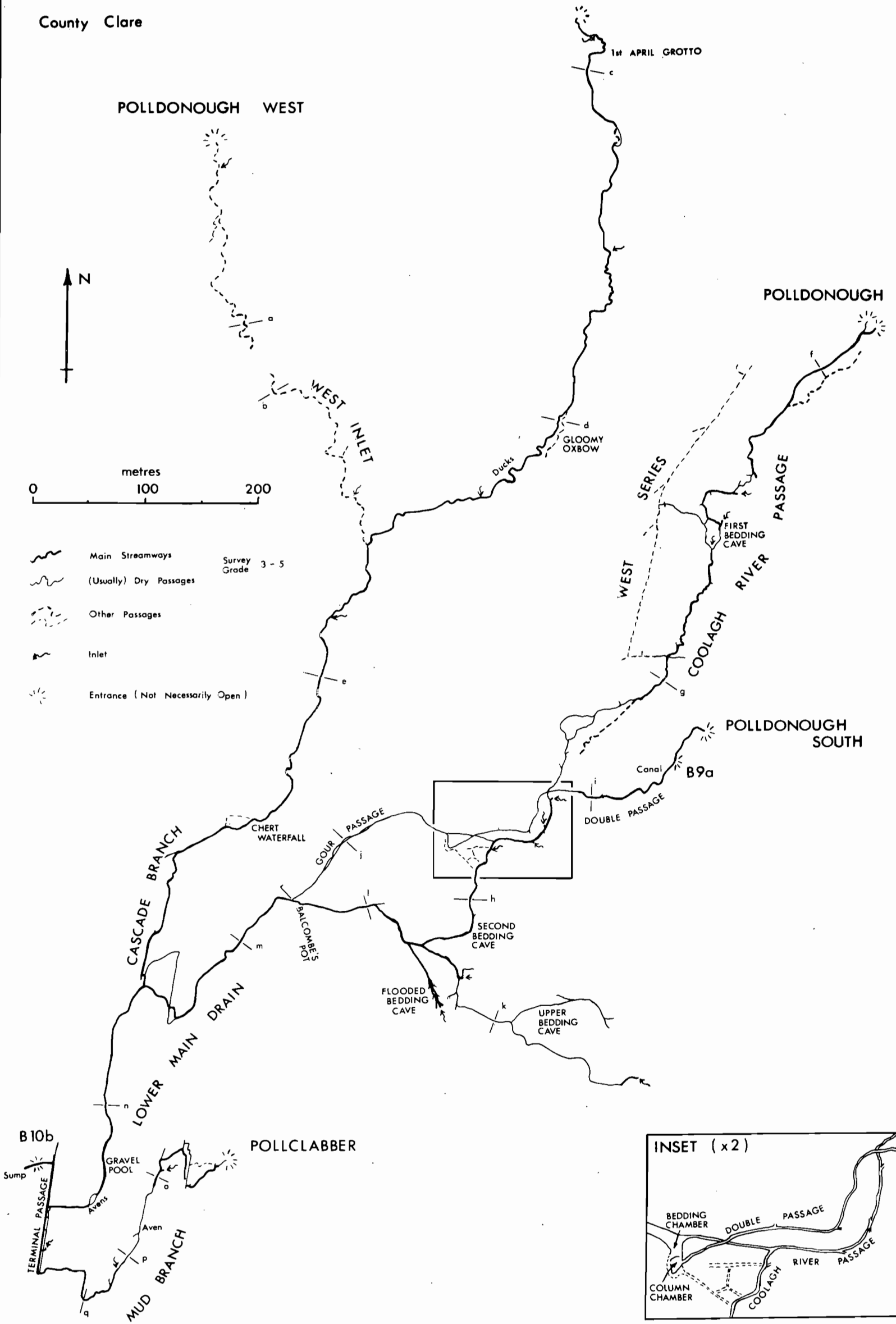
POLLDONOUGH WEST

POLLDONOUGH

POLLDONOUGH SOUTH



- Main Streamways
 - (Usually) Dry Passages
 - Other Passages
 - Inlet
 - Entrance (Not Necessarily Open)
- Survey Grade 3-5



SECTIONS (x 10)

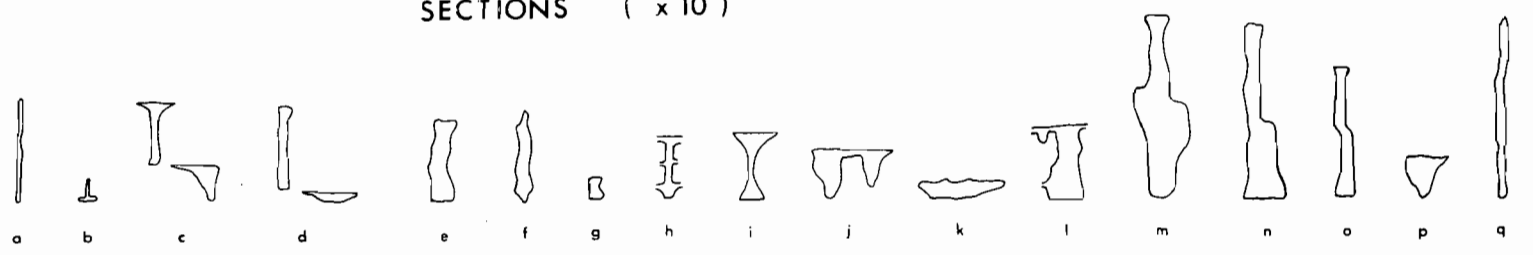


Fig. 20. Coolagh River Cave, plan including recent discoveries.