

## The Polldubh System

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(I.O.S. Map 6 inches to 1 mile, Clare, Sheet 4, and *Plates 6, A and 7, C*)

The shale/limestone junction on the north-west side of Slieve Elva is marked by the usual series of sink holes, some of which are small, open pots. There are three passable systems (Bartlett, 1938). They are, from north to south, Faunarooska (Ollier, p. 181), Pollballiny and Polldubh. South of Polldubh the shale/limestone junction runs west, and then north, passing round the end of Knockaun's Mountain before heading south again. There are numerous sinks along this stretch, and a fairly large swallet at E 5 (*Plate 6, A*), but no passable cave until Poulmagree is reached (Lloyd, p. 183).

Pollballiny has not been investigated by this Society. It is a small, twisting canyon passage running southwards for about 400 yards (Bartlett, 1938). Its waters probably contribute to those in Polldubh North, though they may flow in a parallel series of passages. Polldubh was reported by the same author to run southwards, and after about 600 yards to join Polldubh South, which continues in a southerly direction. The importance of this system lies in the pattern of underground drainage which it presents.

### DESCRIPTION OF THE CAVE

The entrance to Polldubh South lies at the edge of the limestone outcrop, and takes a fairly large stream. A 10-ft. pothole, with a pool at the bottom, leads into a bedding plane passage. A short crawl leads to a canyon-type passage, about 8 ft. high and 2 ft. wide. In this area there are several connexions to the surface. The size of the passage gradually increases downstream until at 600 ft. it is 12 ft. high and 10 ft. wide. At this point the Polldubh North tributary enters near roof level on the west side. A little beyond this a dry passage, an old route of the Polldubh North stream, enters obliquely from the west. Beyond this junction the passage gradually becomes higher until it is 20 ft. high, but the width decreases to only 2 ft. (section 2). The cave continues thus for 500 ft., with several tributaries entering at roof level from impassable passages. The stream flows in the canyon passage for most of the way but in several places has cut across the meanders, leaving the main passage dry. It is a good example of a cave stream straightening its course under joint control. At the end of this length the roof gradually comes lower due to the floor gradient being less than that of the roof, which is the dip slope and is formed in the same bed

throughout the cave. The passage widens and the water, previously no more than ankle deep at low water conditions, becomes waist deep. The stream disappears under the west wall, and a low bedding plane passage develops straight ahead, with an opening at one point on the east side leading down to the water, which flows into an impenetrable bedding plane below the level of the dry bedding plane passage. In the latter a passage cut in the mud fill can be followed for about 100 ft. This part of the cave does not flood often, for in 1954 an inscription by the Northern Pennine Club made in the mud in 1935 was clearly visible. In 1955 the writing had become very indistinct, indicating flooding for a short time, probably during the winter 1954-5.

There are three entrances to Polldubh North. The most important, E 4, is in a depression alongside the peat cutters' road. Some 65 yards to the south is a pothole 15 ft. deep that leads down to the same streamway. Progress north, upstream from the entrance, is not possible as the cave is too narrow. The cave can be followed downstream for about 600 yards, in a twisting canyon passage, to the point where it joins Polldubh South. The passage has many formations, and is of more or less constant size at 5 ft. high and 2 ft. wide. Many impassable passages at roof level bear small tributaries, chiefly on the east side. They almost certainly come from the many small sinks along the limestone edge above, and slightly to the east of the cave. Just north of the junction with Polldubh South is an opening to the surface (E 2), which is the easiest entrance to use for a pleasure trip to the cave.

The swallet at E 5 cannot be entered and the openings in the field to the east are choked with boulders. Under average wet conditions, however, a stream can be heard through small openings in a series of small sinks along the limestone edge, extending for about 200 yards to the point where the outcrop starts to turn north towards Slieve Elva, and this is probably the stream from E 5 flowing to enter Polldubh South either as one of the roof tributaries or, more probably, beyond the passable part of the cave.

#### SURVEY

The main cave was surveyed with a hand bearing compass easily readable to 1°, and a linen tape reinforced with wires, to a standard of accuracy deemed to be C.R.G. classification grade 4-5 (Butcher, 1950). The remainder of the cave was surveyed by compass and pacing and, as the passages can be tied in to surface features, the accuracy is regarded as being C.R.G. grade 2.

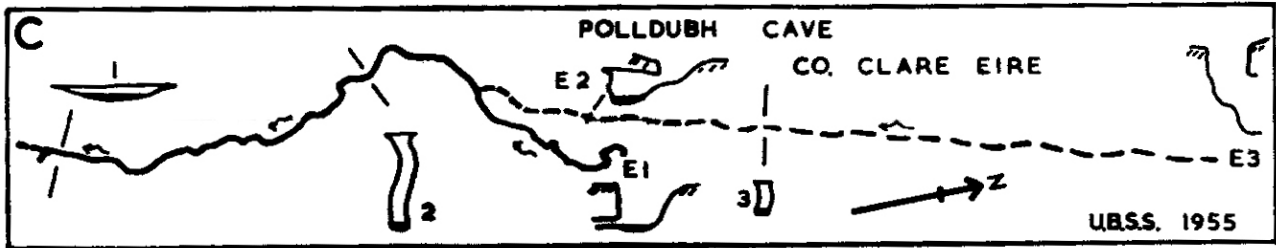
#### THE RESURGENCE

The investigations in 1954 and 1955 clearly showed that the resurgence of the cave waters is at the lower, or south end of the limestone inlier above

the Coolagh River Cave entrance at Polldonough, and forms the Coolagh River. The connexion was proved by fluorescein tests, and in conjunction with the survey shows that the waters of all the Polldubh tributaries, including E 5, together with the Glenaruin waters that sink at the north end of the inlier, reappear at the Coolagh River rising. Bendall and Pitts (1953, p. 229) remarked that the river sinking at the head of the inlier emerges at the rising with little apparent diminution; it is now clear that there is, in fact, an increase in volume due to the addition of underground tributaries. The shallow-lying, ill-developed underground channels of the inlier are too small to take all the water under wet conditions, for there is an intermittent surface stream. There are no channels beyond the inlier, for under the exceptionally dry conditions of 1955 the very small volume of the combined Glenaruin and Polldubh waters continued to rise at the southern end of the inlier. (*See also* Ollier and Tratman, p. 149.)

## REFERENCES

- BARTLETT, P. N., 1938, "Three Easters in Ireland", *Yorkshire Ramblers' Club Journ.*, Vol. 7, 35-42.  
BENDALL, R. A., and PITTS, J. K., 1953, "The Coolagh River Cave", *Proc. U.B.S.S.*, Vol. 6, No. 3, 228-45.  
BUTCHER, A. L., 1950, "Cave Survey", Cave Research Group Publication No. 3.



**PLATE 7**