Poulnagree, Co. Clare, Eire

By
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(I.O.S. 6 in. to 1 mile, Clare, Sheet 4)

In 1955 the part of the cave shown on *Plate* 10, *A*, as Upper Poulnagree was explored (Lloyd, 1956). Two hundred yards to the north-west of the entrance to Upper Poulnagree a hollow was examined and described. This is obviously a collapse feature formed at the junction of two joints, one in the 196° direction and another in the 270° direction. It was predicted that the rift formed along the 196° joint could only lead into Poulnagree and did not seem worth following. Lloyd describes the end of the upper cave as a pitch at least 80 ft. deep, which would prove difficult to descend due to the very tight approach and the absence of a natural belay. In the following year it was decided to descend the unstable boulder slope in the rift at the foot of the hollow, in an attempt to get to the foot of the pitch. This was successful and in 1956 and 1957 the cave was explored and surveyed.

The boulder pile is held back by a constriction at the head of a 10-ft. overhanging pitch for which a rope is necessary. The stream which enters the hollow sinks through these boulders and re-appears at the foot of the overhang. Beneath the overhang a 20-ft. high steeply descending canyon passage leads off for 130 yards to an aven 20 ft. across and at least 80 ft. high. In 1957 verbal contact proved that this was the foot of the big pitch in Upper Poulnagree. Two distinct streams descend the aven, the one on the upstream side coming in from Upper Poulnagree. A little way down the passage there is another aven of comparable height to the first and about 40 ft. in diameter. A high-level oxbow 15 ft. up joins the two avens. The floor of the second aven is covered with flowstone and slopes steeply downstream. On the far side the passage suddenly closes down and the way on is a small phreatic passage 4 ft. high.

This next section consists of a number of short lengths of small joint-controlled passages, intersecting at right angles. The walls are covered with large phreatic type scalloping except for a few inches at stream level where there is smaller, vadose current marking scalloping. This crawl, which lasts for about 140 yards, is over soft rounded shale fragments in passages from 2½ to 4 ft. high (C and D). The roof eventually rises to 7 ft. and then, after 10 yards, suddenly increases to 30 ft. There is no tributary here and the floor gradient is slight. This high section closes down after 15 ft. to a short joint-controlled section about 8 ft. high. Beyond this the roof rises

again to 30 ft. at the beginning of a straight part of the passage. At the end of this there is a small tributary coming in from the roof (T 1), and the main streamway turns west for a few yards before resuming its general direction.

The stream from here flows in a narrow featureless canyon passage, 2 to 3 ft. wide and about 22 ft. high, for the next 550 yards. The whole section is strongly joint determined along the 196° direction as will be seen from the survey; 350 yards from the end of the cave, the passage in its lower part becomes too narrow to follow and a roof traverse is necessary with the stream flowing along the passage 25 ft. below (I). After 120 yards this gives way to the typical canyon passage seen before. The roof section is not the usual T-type, but like an inverted U. In most of the length there is a calcite vein running along in the roof. From section L the height of the passage gradually decreases, as the floor slope is less than the dip slope of the roof, and the cave ends in a sump. A small tributary flows into the sump from the south, for in its last few yards the cave has changed its general trend from south to north.

The cave as described presents one problem, namely the cause of the sudden changes in the cave between the Second Aven and cross-section E. It is not unusual for a cave to close down after a vertical feature, such as the Second Aven, and as there is no apparent high-level passage, now dry, over the low predominantly phreatic section, the whole would seem to be a grand example of vertical feature type B (Ollier and Tratman, 1956, *Fig.* 25). Why the roof level should suddenly go up again, descend, and then rise once more is difficult to explain unless there is high-level abandoned bedding plane passage in the roof. This was looked for but not found. The tributary T 1 may originally have entered the main cave at the end of the low phreatic portion and by a process of waterfall retreat arrived at its present position leaving a short section not cut back. But the tributary does not seem anything like large enough for this theory to be satisfactory. Perhaps the high-level connexions are still to be found, for without scaling ladders a detailed examination of the top of the Second Aven is not possible. Also the high part of the canyon passage beyond the low phreatic section is too narrow to allow close investigation of the roof.

It had also been predicted on the evidence and the direction of Upper Poulnagree (Ollier and Tratman, 1956, p. 145) that the cave would take a steep course down to the sea. The exploration of this cave has shown that the control by the jointing has been so effective that the cave has run south along the 196° joints and not west. The resurgence is at present unknown. There is a rising about half a mile south-south-west of the end of the cave, but this continues to give out clear, not muddy water after heavy rain and so is unlikely to be the rising of the Poulnagree waters.

The cave was surveyed using a hand bearing, liquid filled prismatic compass, and wire-reinforced linen tape, and simple clinometer. The results were computed and plotted at 100 ft. to the in. The survey is deemed to be Cave Research Group Grade 4–5. The cave is 4018 ft. long and is 155 ft. deep.

REFERENCES

Proc. = *Proceedings, University of Bristol Spelæological Society.*

BUTCHER, A. L., *Cave Survey*, C.R.G. Publication, No. 3.

LLOYD, O. C., 1956, "Poulnagree", *Proc.*, Vol. 7 (3), 183.

OLLIER, C. D., and TRATMAN, E. K., 1956, "The Geomorphology of the Caves of North-west Clare", *Proc.*, Vol. 7 (3), 138.

PLATE 10A

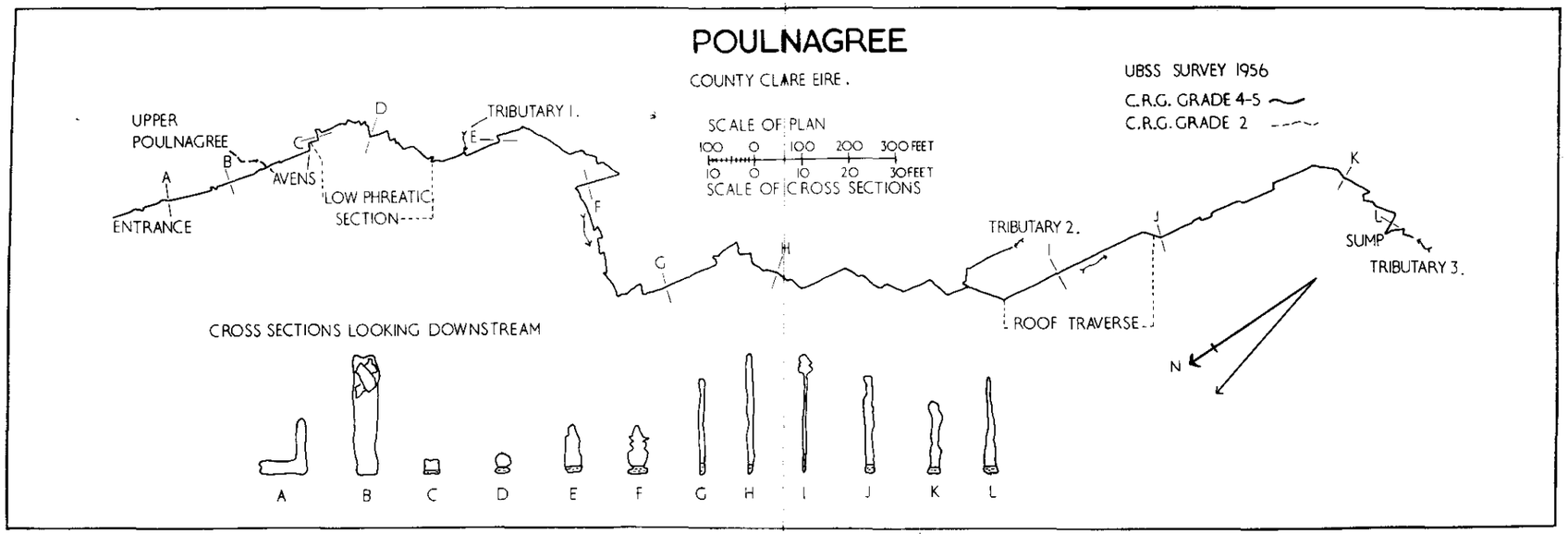

PLATE 10B