

DOOLIN CAVE EXTENSIONS

By

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(I.O.S. Map 6 inches to 1 mile, Clare, Sheet 8,
(Fisher Street Pot) E.4.1", N.9.1").

INTRODUCTION

Doolin Cave has been fully described by the Society three times: the first (Robertson *et al.*, 1956) soon after its discovery in 1953, the second (Lloyd, 1964) at a time when an intensive study was being made and the third (Savage and Hobbs, 1969) as part of the complete publication of the Caves of North-West Clare. The object of this paper is to give a description and plan of those parts of the middle section of the cave, which were discovered since 1964. The surveys of these passages were only half done, when the third of these publications was prepared, and are now fairly complete. (Fig. 87 shows the relationship of these discoveries to the main system).

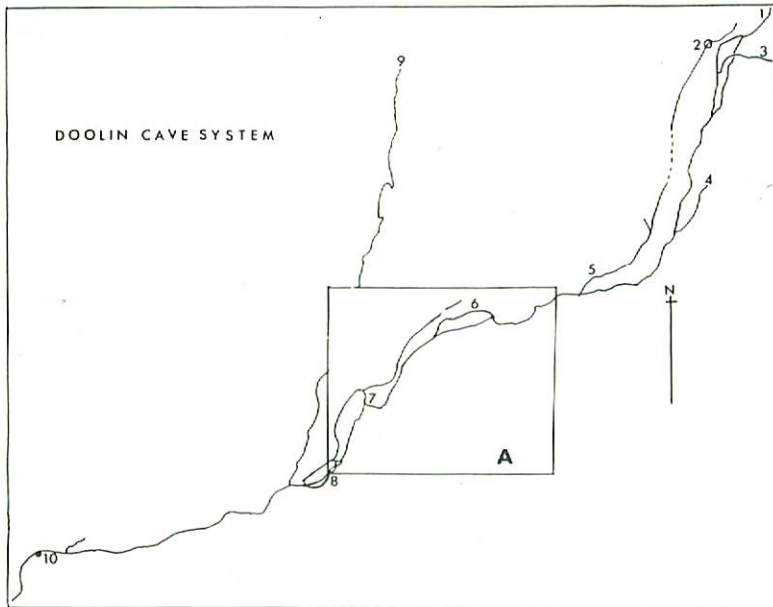


Fig. 87 A. Area of large scale plan. 1. St. Catherine's 1 swallet. 2. Entrance to St. Catherine's 2. 3. Stream of St. Catherine's 3. 4. Doolin Road Sink. 5. Doolin Dry Tributary. 6. Great Oxbow. 7. Great Boulder Fall. 8. Second Bedding Plane. 9. Aran View Swallet. 10. Fisherstreet Pothole.

HISTORY

The existence of an upper series of passages in Bed. No. 4, the Shelving Bed (Lloyd, 1964) in the neighbourhood of the Great Oxbow was known in 1963, when Dave Savage found the Great Oxbow Grotto (July 6th). At the upper end of the same series there was known to be a continuation of the oxbow from the Doolin Dry Tributary in the same bed, and this was assumed to join the Great Oxbow. Savage explored this for 300 ft. on July 18th 1965 but did not pursue it owing to light failure. A third part of this system was the grotto above the Great Boulder Fall, found by Savage on July 16th 1964.

The lower end of this system was found by Savage on July 25th 1966, when he entered a roof passage which joins the oxbow to the Second Bedding Cave and followed it upstream for about 380 yards to where it joins the roof of the Great Canyon. From here he went up the Long Tributary Passage and explored it for 25 yards. He found the oxbow complex off the Second Bedding Cave Oxbow three days later. On July 30th 1966 Peter and Ian Standing climbed into the roof passages at the upstream end of the Great Oxbow and followed them upstream to the point where they meet the streamway and merge with the Doolin Dry Tributary oxbows (Section 1). They then returned and at Four Ways Junction found Echo Passage and explored it to Echo Pot. They also did 100 ft. of Echo Passage Extension.

In 1967 much of the survey of the new passages was carried out and Eve Wheeler forced the connection between the 1964 Grotto above the Great Boulder Fall and the Long Tributary Passage. It was a liquid mud squeeze, 'typical Dave Savage', she added. Echo Pot was descended on July 13th 1968 and on the 17th Oliver Lloyd dived Echo Sump. Echo Passage Extensions were pushed to their limit by Bob Taylor and Peter Standing on the 23rd. They are narrow, tight and uncomfortable. The rest of the Long Tributary Passage was surveyed and it was established that much of the water came from D7c Swallet. For the survey it was found convenient to send a thin caver with a rope up the lower end of the Passage to the point where it connected with the Great Canyon, where the rest waited with a ladder, which was then fixed for their ascent. Unfortunately on one occasion the Thin Caver dislodged a large boulder sending it down onto those waiting below. Smart footwork by Lloyd avoided disaster, but he caught the boulder on his heel and was rather lame for the rest of that day.

The roof oxbow starting at Four Ways and ending half way along the Great Oxbow was discovered by our party on July 11th 1970 and in the same month Lloyd dug in the left hand tributary passage of the Second Bedding Cave, extending it 80 ft. It is hoped that the water from this comes from Echo Pot. Finally (if such a word can ever be used in caving) on July 16th 1971 Lloyd found a connection between Echo Passage and the Great Oxbow Grotto. This can be included in a through trip of the cave and increases the tourist attraction.

DESCRIPTION OF PASSAGES

Most of the new discoveries are oxbows, that is they start and finish

in the roof beds of the main streamway. In the case of Echo Passage this is true as far as the Great Oxbow Grotto, but beyond that it is uncertain, as the connection with the left hand tributary to the Second Bedding Cave (optimistically called 'Echo Sough') has not yet been proved. The Long Tributary Passage was thought to be an Oxbow, until it was found that its upper end could not possibly connect with the main streamway. Conceivably it might arise in the unknown connection between St. Catherine's II and the Doolin Dry Tributary, but it seems more likely to have a surface origin, since at its extreme end we were finding animal bones and snail shells.

The Upstream Oxbows

These begin (at Section 1) as a continuation downstream of the Doolin Dry Tributary Oxbow. An easy climb up from the streamway over some boulders leads to a wide low passage in the upper part of the Shelving Bed, strewn with slabs. A cairn at 136 ft. (41.5 m) marks the point where on the left a steeply sloping passage leads back to the streamway. An awkward squeeze over slabs leads to another cairn at Four Ways Junction 147 ft. (45 m) further on. A small loop passage to the right forms an oxbow; straight on is Echo Passage, while down to the left one enters the lower part of the Shelving Bed to go under Echo Passage and emerge in the roof of the upper end of the Great Oxbow. The climb of 15 ft. (4 m) down to this is tricky.

Two low, easily missed side passages to the right of the beginning of Echo Passage lead after 300 ft. (92.5 m) from the cairn in Four Ways to the roof of the Great Oxbow (at Section 7). It was at this point that the passage was first entered by climbing over its shattered floor slabs. From here to the Great Oxbow Grotto the Shelving Bed forms part of the roof of the Great Oxbow (290 ft., 90 m). One can then once more climb into the roof passage left and enter the Great Oxbow Grotto. The decorations here are on the East side and are very beautiful. At the far end is the opening from Echo Passage, and 108 ft. (33 m) beyond the floor slabs become deficient and the Grotto enters the roof of the Great Canyon. For the next 222 ft. (68 m) the roof passage is continuous with the stream passage and is inaccessible. After that it wanders off in a serpentine fashion, crossing and re-crossing the Great Canyon, until it joins the Long Tributary Passage.

At a level rather lower than the Great Oxbow Grotto are some smaller oxbows which communicate with the Great Oxbow. These are not marked on the survey.

Echo Passage

This passage starts at Four Ways Junction and is situated entirely within the upper layers of the Shelving Bed. It begins as a crawl which becomes a stoop which develops into a walk. In the stooping part (say 200 to 300 m from Four Ways) the floor is of rippled limestone and carries long shallow pools of water. There are no obvious drips feeding these.

Just beyond the junction with the Great Oxbow Grotto one

encounters the Fossil Sump. This is a dry 'U' tube with calcite round the walls showing the original water level. Beyond it are many stalactites on the left of the passage and crystal gour pools in the floor, fed by drips. They provide a thin stream which enters Echo Pot.

Echo Pot was an exciting find. Vertical features of this sort are common in other Clare caves but rare in Doolin. It is a cylindrical pot 27 ft. deep (8.5 m). At its foot is a rift passage 130 ft. (40 m) long ending in a sump. This continues for another 110 ft. on the same straight line to a boulder pile. The line of this rift is on the major N-S joint. The Pot is well decorated and worth a visit. A small stream of percolation water runs in its floor, similar in size to that seen in 'Echo Sough'. There is no safe natural belay at the head of the Pot, but one or two stal columns may be used or, better still, bring with you a piton and hammer and a 25 ft. belay.

Echo Passage Extension is an unpleasantly low crawl with frequent short oxbows. It appears to finish after a pool by breaking up into a number of half tubes, which presumably rejoin later and may find their way to Echo Sough as well. This Sough is situated also in the upper part of the Shelving Bed and forms the only tributary to the main stream which enters on the left. This it does at the Second Bedding Cave. It is a passage 4 ft. each way largely obstructed by mud. The more solid mud forms transverse banks at intervals, and the pools so formed are filled with red liquid mud. Grey alluvial mud from recent floods is to be found in its lower part.

The Long Tributary Passage

This is a typical 'T' shaped canyon passage with shelving sides. At its upper end it is muddy with hardly any stream but it picks up two right hand tributaries in its first 600 ft. (185 m). It then receives the water from D7c Swallet (section 11) and after this the floor is of clean rippled limestone. These three tributaries all enter by a bedding plane at floor level. There is no canyon passage corresponding with them further downstream.

At the point where the Long Tributary Passage is joined by the Great Canyon Roof Oxbows there is much shattering and the stream sinks in the floor and goes straight to the Great Canyon, where it falls down the right hand wall. From here to the 1964 Grotto Complex the passage is dry. Old crystal pools may be seen in the floor. But at 80 ft. (25 m) beyond the Complex there is once more a stream in the floor. Its origin is uncertain and it tends to get lost after another 80 ft. (25 m), but soon reappears coloured red with mud and persists nearly to the junction with the Second Bedding Cave Oxbow. Most of this passage is only 3 ft. (1 m) high, rising to five further down. The junction passage is a low muddy crawl leading to the roof of the Second Bedding Cave Oxbow. The stream reappears at floor level 40 ft. (12 m) further down this Oxbow, still accompanied by red mud. Below the junction passage the Long Tributary Passage continues as a muddy bedding cave, smeared with flood mud, only 3 ft. (1 m) high, joining the Main Streamway at roof level after 340 ft. (104 m).

1964 Grotto Complex

This pretty Grotto communicates by three small passages with the roof of the Great Canyon above the Great Boulder Fall. It contains a small stream which originates in Swallet D1a, N.E. of Toomulin House. The water drops into the right of the Canyon but trickles down its left hand wall, because of the way the Canyon leans. The rest of the Complex consists of a low muddy wallow forking west and a 5 ft. high passage forking east to the Long Tributary Passage.

Second Bedding Cave Oxbow

Before we had wet suits we preferred this route, because the main streamway has a low wet crawl. Now we prefer the latter, because one can cool off. The Oxbow is situated in the Shelving Bed and is only three feet above the stream. It forms a figure of eight with the streamway connecting by a hole in its floor. At its upper end is a heavy red drip from the ceiling. This is believed to come from a red trickle which runs down the cliff on one side of the Aille River into a pool, where it sinks without discolouring the river water downstream.

DISCUSSION

When considering the forming of these passages it is easiest to look on them as having been originally full of water, which allowed the formation of limestone shelves by the slow leeching out of bedding planes in the Shelving Bed. This applies to all the new passages described, except that lying below Echo Pot. When the passages began to dry out, the water draining from them was usually captured by systems lying at a lower level. The result was that the terminal part of Long Tributary Passage and Echo Passage extensions were eventually far less developed than their upper reaches. Capture of the former at the Second Bedding Cave Oxbow and at the Great Boulder Fall probably didn't amount to very much, as these connections are small. But the connection with the upper roof passage of the Great Canyon is more important. Between Four Ways Chamber and Great Oxbow Grotto the underlying passage (Great Oxbow) was never far away and the old passages in the Shelving Bed break into it in several places. The capture of water by the Main Stream from the Great Oxbow was a comparatively recent development.

The presence of Echo Pot needs comment. What seems to have happened is that there was a weak major joint there in the lower beds which developed when full of water and which captured the water from Echo Passage on a left hand bend. The flow down Echo Pot, even if intermittent and mainly at times of flood, must have been considerable. The passage at the top has obviously been scoured out by running water. The roof passages below Four Ways Chamber are all distributaries of the main stream. As such they were subject to periodic flooding and have been washed clean of mud. Evidence of flooding is to be seen in the Great Oxbow Grotto, where stalactites have been tilted by movement of the slabs on which they formed. Moreover broken straws are strewn around here, some of them recemented in flow stone. This shows that the floods have now ceased.

The same is not true for the Long Tributary Passage, which is not a distributary of the main stream and whose upper reaches contain a lot of sticky mud. The origin of the stream which formed this tributary is unknown but it has been since adopted by at least two streams. Lower down is the red stream of unknown origin. Higher up is a stream coming from D7c and ending in the Great Canyon. Higher still are two small tributaries of unknown origin. They do not come from D7a, which feeds the stream in the Doolin Dry Tributary. There is a shallow marshy basin on the surface over the upper end of the Long Tributary Passage, the provisional allocation of which is D7d. The floor is peaty with no exposed rock. There are also four minor swallets on the shale edge and two exposures of limestone within the shale edge, whose waters have not yet been traced into the cave system. We may yet therefore be able to find the origin of these tributaries.

THE SURVEY

This was done with linen reinforced tape recorded to the nearest inch, prismatic compass to the nearest degree and clinometer where necessary. The co-ordinates were computed as from Fisher Street Pot and plotted out onto metric graph paper at a scale of 1 in 500. From this the map has been reduced to 1 in 2000. Closing errors were generally of the order of 1% or less.

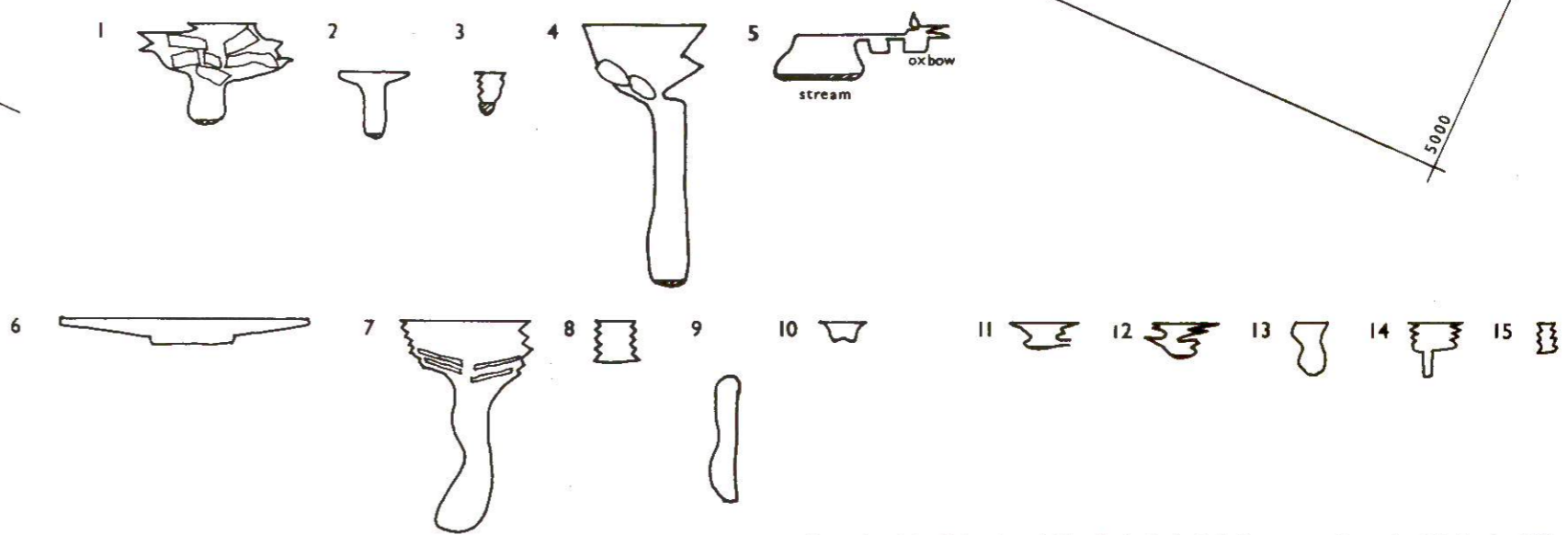
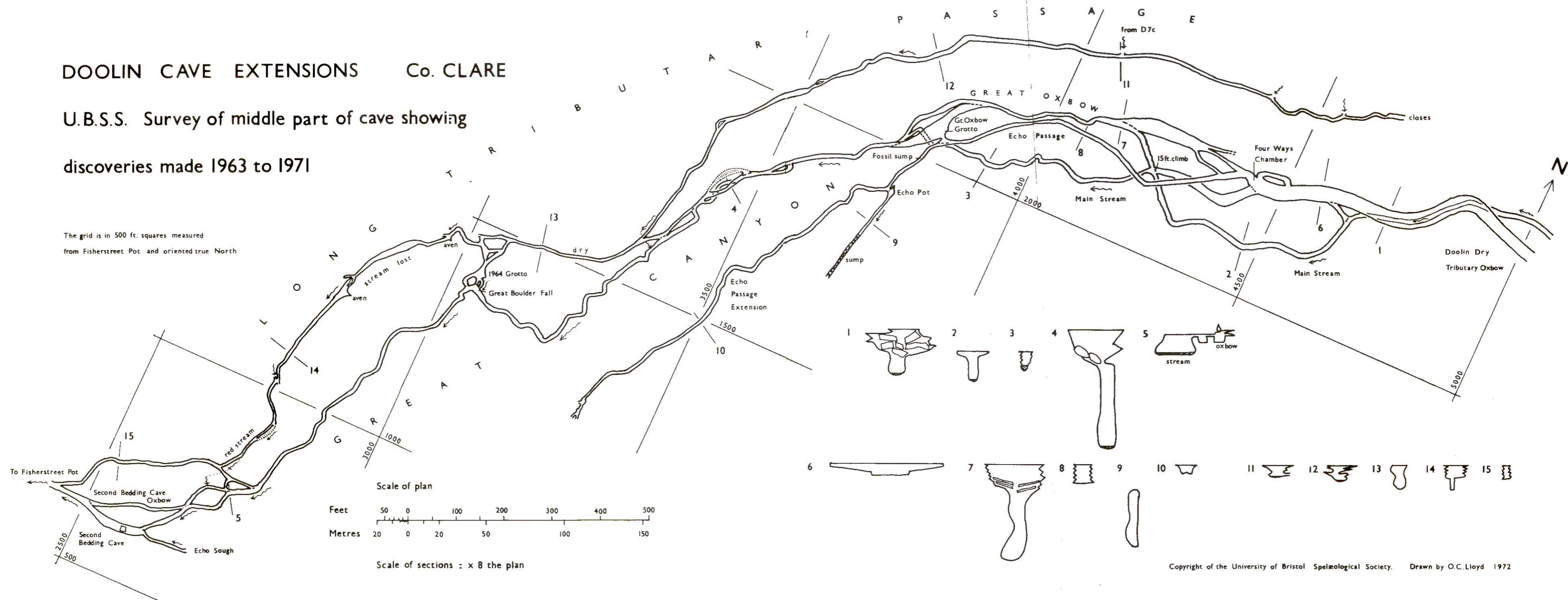
ACKNOWLEDGEMENTS

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DOOLIN CAVE EXTENSIONS Co. CLARE

U.B.S.S. Survey of middle part of cave showing discoveries made 1963 to 1971

The grid is in 500 ft. squares measured from Fisherstreet Pot and oriented true North



Scale of plan
 Feet 50 0 100 200 300 400 500
 Metres 20 0 20 50 100 150
 Scale of sections : x 8 the plan

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