Poll-Caherclogaun West-1

By
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(Entrance: O.S. 6 in. to 1 mile, Clare Sheet 8, E. 34·2 in., N. 1·9 in.)

SUMMARY

Poll-Caherclogaun West-1 and West (E 14, Ollier and Tratman, 1956, pl. 6) are two of a series of active swallets along the south side of Slieve Elva. Exploration has shown that the passages from them unite underground, the entrance being via West-1. The system has 10,400 ft. of passage and drains almost due south. The cave form is similar to that seen in many of the caves of the area, but the passage is very narrow, particularly before the two passages unite, and this makes the cave very arduous to traverse.

INTRODUCTION

The system was discovered in 1957 by the Royal Military Academy, Sandhurst, Mountaineering and Exploration Club and was named after the local townland. They explored the first 100 yd. or so of the cave. During the period 1959–64 this Society completed the exploration and survey of the system, with the exception of the upper part of the tributary passage from Poll-Caherclogaun West. The Shepton Mallet Caving Club examined this passage beyond the point reached by one of our own parties and got back to within a short distance of the swallet, but their attempt to survey it was frustrated by an instrumental error. Our Society found at an early stage that exposure suits were necessary to enable any useful work to be carried out in the system. The old type of bulky ex-services exposure suits proved unsuitable because of the smallness of the passages and the many sharp projections of the rock. The exploration and the survey to the farthest parts were only completed after the adoption of wet suits. The writers found the cave arduous even with these, and raise their helmets to the parties of explorers who did not have these comforts and yet reached as far as the Rift Chamber, without even exposure suits.

THE SURVEY

(*Fig.* 66)

The C.R.G. grade 4 survey was carried out, using a standard hand-bearing, liquid-filled prismatic compass and a metallic tape. The grade 3 was made using a compass for general passage bearing and the distance was

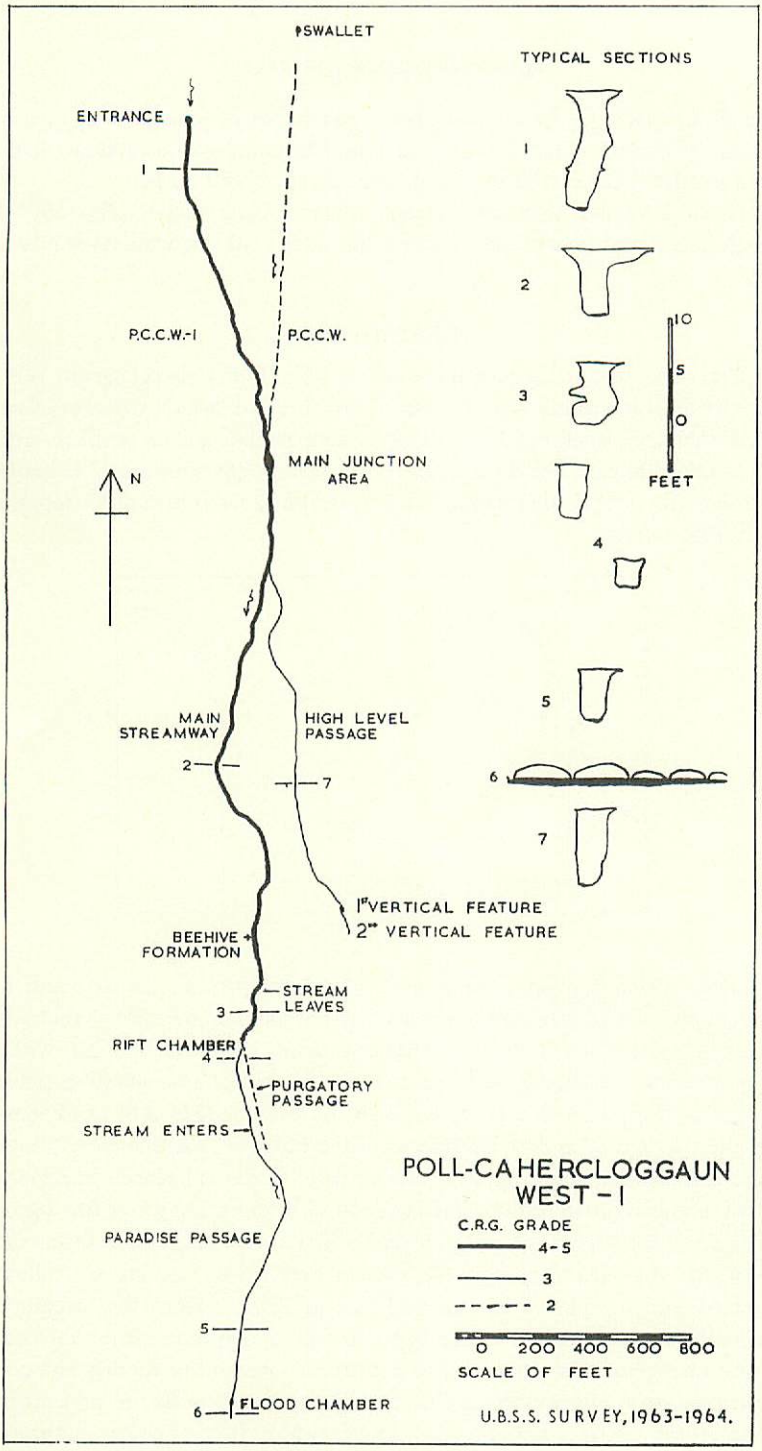
SWALLET
TYPICAL SECTIONS
ENTRANCE
1
P.C.C.W.-1
P.C.C.W.
MAIN JUNCTION AREA
N
MAIN STREAMWAY
HIGH LEVEL PASSAGE
2
7
1st VERTICAL FEATURE
2nd VERTICAL FEATURE
BEEHIVE FORMATION
STREAM LEAVES
3
RIFT CHAMBER
4
PURGATORY PASSAGE
STREAM ENTERS
PARADISE PASSAGE
5
6
FLOOD CHAMBER
10
5
0
FEET
POLL-CA HERCLOGGAUN
WEST - 1
C.R.G. GRADE
4-5
3
2
0 200 400 600 800
SCALE OF FEET
U.B.S.S. SURVEY, 1963-1964.

Fig. 66

checked by pacing. The Poll-Caherclogaun West passage was measured upstream from the junction and was found to come within a short distance of the swallet, which itself can be penetrated for about 30 ft.

It will be noted that few sections appear on the survey (*Fig.* 66). The passage form is in general so uniform that nearly all the sections would look alike.

DESCRIPTION

The cave entrance is an active swallow hole, Poll-Caherclogaun West-1, which is fed by a small stream with a very limited catchment area, flowing off the shale cap of Slieve Elva. The present swallet is in a small re-entrant of the shale outcrop. For the first 40 ft. the passage contains unstable boulders and there are several small connexions to the surface. This length represents the swallet retreat.

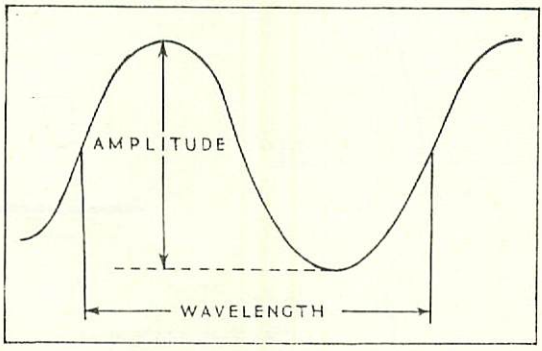

Fig. 67

After this a canyon passage starts to develop, with its roof and floor sloping downwards, but the floor at a steeper angle than the roof so that within 50 ft. the passage is a typical T-section canyon, about 12 ft. high, with the lower sections measuring between 1 and 2 ft. wide. The bedding plane at the roof is from 2 in. to 2 ft. wider than the passage (*Fig.* 66, 2). From the start the passage meanders laterally and in a fairly regular manner. In many places the passage splits up into two or three levels, displaced horizontally, following approximately the same curves and intersecting every few feet, but each having wavelengths and amplitudes of its own (*Fig.* 67). Observation shows that the meandering is not caused directly by the stream following preferred vertical planes in the rock, as in many places the stream cuts diagonally through calcite veins without being displaced from its course. On the rare occasions when rock structure is observed to modify the course of the passage it suppresses meanders. This accords with the present ideas on meandering surface streams (e.g., Dury, 1960). It is, of course, impractical

to show the way in which the stream meanders on the survey, much less to show how the other two or three different levels behave. In many places it is not possible to reach more than one level. The following observations were made on the stretch of passage between 800 and 1,100 ft. from the entrance.

The lowest or present stream level varies in width from 9 in. to 2·5 ft., is up to 3 ft. high, and has meanders about 20–40-ft. wavelength and 5-ft. amplitude. Wherever possible, the survey line was carried along this level. The middle level is some 5–7ft. high, with meanders of wavelength 20–40 ft. and amplitude 10 ft. The upper level is 3–5 ft. high, with meanders of wavelength and amplitude about half as large as the middle level. As might be expected, calcite formations are most abundant in the upper level, often blocking it, common in the middle level, but only sufficient to block it in two or three places, and rare in the lower level. It should be noted that where the middle level and upper level are both blocked by formations the only route is along the lower level, which, being so small, can become blocked by quite an ordinarily trivial rise in the stream flow, and a party beyond these points can be easily trapped and have to ride it out further down the cave. The usual precautions should be taken to cope with this event.

In many places the three levels are present one above the other, in other places they are displaced, and each level has a separate T-form in section, with a flat bedding plane roof. Thin shelving occurs frequently in the lowest levels and in places almost obstructs the passage.

The Main Junction, 1,600 ft. from the entrance, is where the tributary stream from Poll-Caherclogaun West joins the cave. The junction is a complicated series of passages at various levels. Four distinct ones can be recognized. Levels 1 and 2 are called the High Levels and are 3 ft. and 3·5 ft. high respectively. The Middle Level, 3, is about 10 ft. high. The Low Level, 4, is the level of the present streams and is about 2–2·5 ft. high. *Figure* 68 is a diagrammatic representation of the junction area. This shows a number of east–west cross-sections lettered A–J. The pecked lines joining the sections represent the passage roofs and show how the sections link up. The continuous lines are the present streams. The distances between the succeeding sections are stated on the left of the diagram. The diagram shows how the various passages are related to one another, but it is not to scale and does not show true relative distances. In particular in section D the Lower Levels of West and West-1 are, for clarity, shown some distance apart, but in fact the distance is only a few feet.

The youngest junction is at T, which is still active. Distances quoted elsewhere in the account as from Main Junction are measured from this point. When the streams were active at level 3, junction S was active. A short-lived intermediate stage between the times of operation of junctions

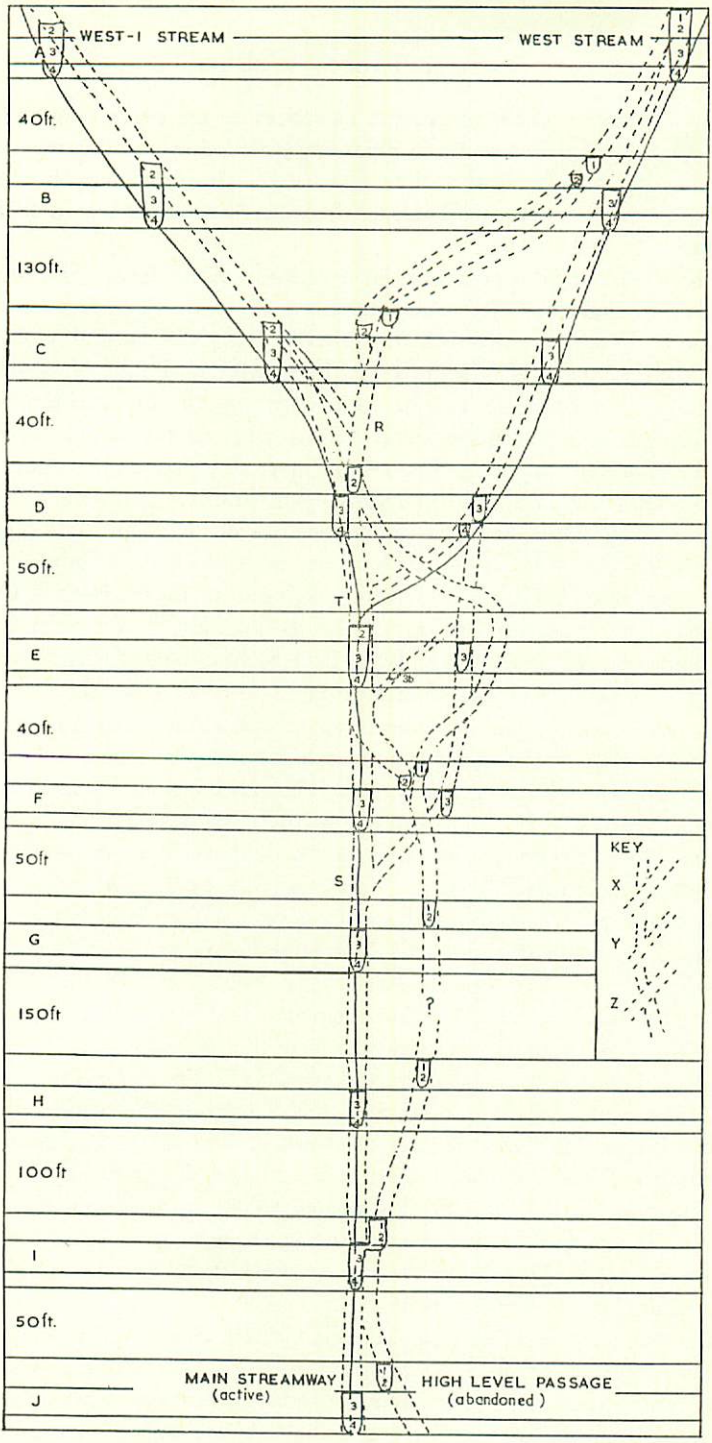

Fig. 68.—Diagrammatic representation of the Main Junction area. X = junction of passages with different roof levels; Y = junction of passages with the same roof level; Z = passages crossing at different levels without connecting. See text for full explanation.

S and T is represented by the very small passage labelled 3b on section E. The junction active when the streams were at level 2 is the junction at R. The High Level passage (1 and 2) is blocked by calcite deposits between sections G and H, about 50 ft. of passage being inaccessible. No level 1 passage has been seen in the West-1 passage. It is certainly not present in the complex between sections C and G and no junction attributable to this level is present after section H. If it exists it may pursue an independent course somewhere above section C, passing to the west of the present active stream junction and join the West Level 1 passage in the inaccessible section mentioned above. Alternatively, the two streams may not have joined in the explored system when level 1 was active. At about section I the High Level swings permanently away from the lower levels as described below.

It is interesting to note that this complex has been produced by the simple junction of two streams. There is a total of 16 passage junctions involved and a further 4 points where passages cross at different levels without intersecting. Undoubtedly many surface stream junctions on comparable gradients would show similar complex forms if their previous stages could be reconstructed. A further point of note is that at both the active stream junction and where the 3b passage joins the present stream there is steeply sloping shelving (about 10° and 30° respectively). This is obviously parallel to the flow angle of the stream when the shelving was formed and definitely not parallel to the bedding, which on the surface can be seen to be horizontal.

After the Main Junction the streamway continues at the same range of height as before but 2·5 ft. wide and quite comfortable to walk along. After some 400 ft.* the roof of the High Level passage rejoins the level being followed (*Fig.* 68). After a short distance with all the levels together again the High Level meanders off permanently away from the present stream passage, following a course somewhat east of this.

This High Level passage, about 5–8 ft. high and 2 ft. wide, has abundant calcite formations and the usual passage form and meandering course. On rare occasions the passage splits into two levels. It continues for 1,400 ft. It has drips and slight trickles entering in many places so that it gradually acquires its own small stream. Along most of the passage there is a series of calcite dams (gours) over which the stream trickles. As one proceeds down the passage these dams generally get higher, and there are noticeably deep glutinous deposits which are highly calcareous and are up to thigh deep and considerably impede progress. Remarkably the last few feet before a dam are always free of glutinous deposit. The passage is nearly blocked by calcite formations in several places. After about 1,300 ft. the roof drops 4 ft. This

* The difference between this distance and the one inferred from *Fig.* 68 is the difference between passage distance and straight north–south distance.

is a similar vertical feature to the Dome Chamber in Cullaun 2. The stream continues another 130 ft. to the second vertical feature. This is in two sections. The floor drops 4 ft. and then 7 ft., with the roof continuing in the same plane. At the second drop the passage opens out into a chamber 6 ft. across with the roof plane ending and the walls coming down to the floor, where the stream goes off through an impenetrable bedding plane at floor level. In the opposite wall there are two small passages. One is impenetrable because of calcite formations but probably does not go far. The other leads, after 12 ft., into an aven with no passable continuation. The upper part of the aven extends well above the roof plane just left.

The High Level passage is a good example of an original stream route, now abandoned, in which the dominant present process is deposition of calcite, which is gradually choking the passage.

Returning now to the description of the Main Streamway, from the point where the High Level passage leaves it, some 400 ft. below the Main Junction: the passage continues about 8–10 ft. high and 2–2·5 ft. wide, with typical T-section as before. Gradually the roof comes lower and the passage is only 5 ft. high. At the same time the bedding plane part of the T is more marked. At 2,600 ft. from Main Junction the stream disappears down an opening at floor level on the left. The passage continues with almost exactly the same form for another 200 ft. The small size of the opening taking the stream and the unchanged character of the passage after the stream has been lost indicate that this part of the passage has been only recently abandoned. It is very likely that it still takes some flow in flood times. This part is known as the Dry Main Streamway. After 200 ft. there is a vertical feature of simple type C (Ollier and Tratman, 1956, *Fig.* 25). This has given rise to a small rift-like chamber and the floor of the passage drops 10 ft. into this. A small passage leads off at the bottom. The roof of the chamber is continuous with that of the passage leading in, and a passage continues at this level about two-thirds of the height of the passage leading in (*Fig.* 66, 4). This chamber has been named Rift Chamber and was the end of the pre-exposure suit explorations.

The small passage leading off at the bottom of Rift Chamber varies from 1·5 to 2 ft. wide and 1·5 to 3 ft. high. This is named Purgatory Passage, and the reason is not difficult to understand. It is a heavily scalloped, relatively steeply sloping passage which is free from any calcite deposits. It has the usual flat roof, a meandering course, and goes roughly south for 400 ft. The most noticeable feature of this passage is the steepness of its slope; at times this is up to 10° and always seems to follow the natural strata of the limestone whereas in fact it does not. The last 50 ft. of this passage is a wide, low bedding-plane type. Though it has this form it is not following the bedding as the surface geology shows no dip over the cave. The explored

end of the passage is about 8 in. high and small projections from the roof and floor become major obstacles. It was possible to see on another 15 ft. which might be forced by a determined leprechaun.

By contrast, the passage continuing at the top of the Rift Chamber at the same level as the passage leading into it is 2 ft. wide and 5 ft. high. It is very finely decorated and was named Paradise Passage. The clean formations and gour pools indicate that the main stream has not used this passage for a considerable time. The passage runs nearly horizontally for about 100 ft. and then slopes down steeply. In one place it drops 15 ft. vertically in 20 ft. horizontally. In this section there are frequent fallen blocks deeply cemented in the formations. About 300 ft. from the Rift Chamber a small stream rises out of a gour pool and flows away down the passage. Its volume was comparable with that of the main stream before it left the accessible cave. But fluorescein put in there did not produce any colour in the gour pool over a period of about 3 hours. This single test is not conclusive.

Between the Rift Chamber and this rising the passage falls probably 30 ft. and doubtfully 50 ft. After the rising there are few distinguishing features to note about Paradise Passage. The height remains between 5 ft. and 8 ft. with the usual flat roof and lateral extensions at the roof level. The gradient of the passage increases noticeably after about 1,400 ft. from the Rift Chamber and then after another 50 ft. the Flood Chamber is reached. The passage opens out for 30 ft., with a large pool and a few fallen blocks. Its position in relation to the surface is about 400 ft. south of the Lisdoonvarna –Ballyvaughan road, about 600 ft. west of the flood channel from Owenterbolea (Ollier and Tratman, 1956, *Plate* 6, F2). The roof slopes continuously down to a bedding plane passage with roof pendants. This was followed for about 50 ft. At the end-point reached the bedding plane extends over a broad arc of vision. It is about 1·5 ft. high with 9 in. of water and the roof pendants dip into the water at about 3-ft. intervals (*Fig.* 66, 6). It would be possible to continue further between the roof pendants. When this part of the cave was visited it was 24 hours after reasonably heavy rain had fallen and it was interesting to note that large amounts of froth were clinging to the walls, indicating that only hours earlier this part of the cave had been submerged! There were also several live insects and many pieces of straw and similar debris, and it was evident that these had not been brought down by the stream from Caherclogaun, but rather had been brought in by water backing up the passage from lower levels.

If the survey of the cave is superimposed on to a map of the area, it is seen that the point reached in the terminal bedding plane is not so very far from a numer of wells still in use, and if any of these could be reached, possibly during a spell of dry weather, it is interesting to speculate on what the local inhabitants would think when they heard voices coming from the

bottom of a well. On a more serious note, however, study of the postulated underground drainage of the area (Ollier and Tratman, 1956, *Plate* 6) indicates that the end-point is fairly close to the line of the underground drainage from Owenterbolea to St. Brendan's as indicated by the flood surface route and its swallets. The backing-up of flood water observed at the end of the cave is almost certainly from this major drainage route. This is the nearest approach so far made to this trunk streamway, which can take a very large volume of water before it fills up and there is a surface stream.

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