Gragan West Cave

(THE RELUCTANT DRAGON CAVE)

By D. R. Preston

(I.O.S. Map 6 inches to 1 mile, Clare, Sheet 5)

INTRODUCTION

The townland of Gragan West lies on the east of the Poulacapple ridge, which is an outlier of shale resting on limestone (*Plate* 6, *A*). The cave runs roughly from north to south close to the shale/limestone junction, and is about a mile in length.

DISCOVERY

There is no mention of the area to the north and east of the Poulacapple ridge in previous accounts and it had not been searched by this Society prior to 1955. However, by analogy with the similar geological structure of the east side of Slieve Elva with its cave systems, a cave of some kind was to be expected there, although the catchment area is relatively small. It was therefore decided to search the area. This was first done on July 10th, 1955. The diary records ". . . at the northern end of the shales, some depressions and passages of canyon type. On the east side (of Poulacapple) there is a series of openings in the limestone at the edge of the shale, running approximately north and south. They appear to be an unroofed Pollnagollum (Slieve Elva), and present very distinct possibilities for a large system."

A further search of the area was made a few days later. Many possible entrances were examined, some looking very promising, but proving impenetrable. Both the entrances later used were located on this occasion. On July 20th a party returned to have another try at the more likely places. The first, or southern entrances, which led into the middle of the cave (*Plate* 7, *B*, section 13), was found a few feet away from a shaft deemed too narrow on the previous occasion. All that was needed was to pull away some bracken that covered the shaft. The second entrance was found when exploring upstream.

At the southern entrance a small stream flows east off the shale and ends in a limestone inlier, in an irregularly shaped swallet with successive points of engulfment in its floor. The earliest formed of the series led into the cave. The pitch requires a 15-ft. ladder, but it can be climbed with a rope. There is a good belay overhanging the pitch. This led into a 4×4 ft.

canyon-type passage, which was followed for about 750 yards downstream and the same distance upstream. Exploration stopped downstream at a very low bedding plane, and upstream at a stalagmite barrier. On another visit this barrier was broken through and found to be one that had stopped progress 50 ft. from the surface, when exploring downstream from an opening, on a previous occasion. There are thus two entrances.

SURVEY (*Plate 7, B*)

The survey was made with a hand bearing compass easily readable to 1° and wire reinforced linen tape. The standard of accuracy of the survey is deemed to lie between grades 4 and 5 of the Cave Research Group Classification (Butcher, 1950). The portion beyond 450 yards downstream from the southern entrance was surveyed by pacing and crawling supplemented by compass bearings. The standard of accuracy of this part is deemed to be C.R.G. grade 2. The two entrances were located on the ground and marked on the 6-in. map. A line plot of the survey was made and transferred back to the map. The closing error between the two entrances was found to be a lateral displacement of about 4 per cent of the length.

DESCRIPTION

The upper part of the cave follows a line of limestone inliers about 100 yards west of the main shale edge, and many of its tributaries enter on the east side. There is a further set of swallets and shakeholes along the shale edge itself, associated with the remnants of an old cave passage, which still carries a stream. This passage runs roughly parallel to the upper part of the cave and extends south of the northern end of the cave. In the main cave no tributary was found which seemed large enough to be the outer stream, so the latter probably continues in a separate cave not yet entered. These two passages are perhaps analogous to the lower part of Pollnagollum and Pollelva (*see* Ollier and Tratman, p. 149).

Starting downstream from the northern entrance the main passage of the cave can be divided into three sections each showing a stage in cave development, and typical of caves of the district. These are: canyon passage, incised meander trench in a bedding plane, and the undeveloped bedding plane.

The upper or north entrance is at the bottom of a bush-filled depression, one of many, and after a few yards of partially mud-filled passage the clean cave passage is reached, over a stalagmite barrier. This is a canyon passage seldom more than 2 ft. wide but 10–12 ft. high with a T-section. It carries a stream and meanders with straight lengths seldom more than 20 ft. The general direction is, however, for 1000 ft. never far from the main joint direction of 196°. The joints are often calcite filled and thus the relationship

of the cave to the joints is easily studied. The floor drops several beds in steps of 1 or 2 ft. while the roof remains the same bed and so the height of the passage increases. Two main tributaries from similar but smaller passages enter from the east. Each carries a stream and has been followed for a short distance. Both subdivide before becoming too tight for further progress.

About 350 ft. downstream from the entry of the second tributary the cave begins to change both in character and direction. The direction change is to 75° and seems at least to be partly joint-controlled as the other set of major joints lie in this direction. The passage soon becomes wider and lower with the typical section of an incised meander trench cut in the floor of a bedding plane (sections 7–9). The passage continues with diminished height to the southern entrance and beyond in an easterly direction. Below the southern entrance projecting shelves of limestone on the walls of the passage are a very prominent feature for a considerable distance. (*See also* Ollier and Tratman, p. 142.) By the time section 15 has been reached the change to an undeveloped bedding plane passage has already begun. At 900 ft. from the southern entrance the stream leaves the passage for the first time. It runs into an impassable bedding plane on the right. An ox-bow passage can be followed over a series of ascending and then descending gour pools, shortly after which comes the Card Pack Chamber, so-called from the arrangement of the very loose collection of slabs of the collapsed bedding plane roof (section 17). This chamber lies close to a point where the cave ceases to run under the shales but out under the bare limestone. The stream soon rejoins the passage and a change of direction back to 196° occurs.

At 400 ft. downstream from the Card Pack Chamber the grade 4–5 survey ends. The cave now becomes a low bedding plane passage seldom more than 3 ft. high and for most of the way, estimated to be 900 ft., the explorer has to crawl. There are quite long straight stretches in this part and all are oriented along the 196° main joint line. The stream soon disappears to the right again but another ox-bow can be followed and contains some very fine helictites formed in lines along the joints, here filled with calcite. The roof of the passage soon begins to break up once more. Finally, a rather unstable ruckle of collapsed roof boulders has to be negotiated for 10 ft. The stream rejoins the passage which can be followed into the terminal bedding plane until this becomes too low.

The surface gradient follows the direction of the cave and has about the same slope as the dip. The roof starts off only a few feet under the ground and the same bed forms the roof from close to the northern entrance down to the Card Pack Chamber. Beyond to the end the roof is a single bed, probably the same one as above the chamber. There are no vertical features in the cave and only a few abandoned passages.

The point of resurgence of the cave waters is unknown. The catchment area is small compared with the corresponding area on Slieve Elva but it is by no means unimportant. The cave carries a considerable volume of water in flood times as pieces of grass, etc., are to be found 6 ft. above the floor in the higher passages.

CONCLUSIONS

Gragan West Cave is a very juvenile cave still occupied by the streams that made it. Its roof is never far beneath the surface. At the Card Pack Chamber and at the next collapse fresh connexions with the surface will probably develop soon. The manner in which the cave runs close to the shale/limestone junction suggests that it continues thus for some way and there is no known resurgence near. It seems likely that the waters do not reappear within the area examined.

REFERENCE

BUTCHER, A. L., 1950, "Cave Survey", Cave Research Group Publication No. 3.

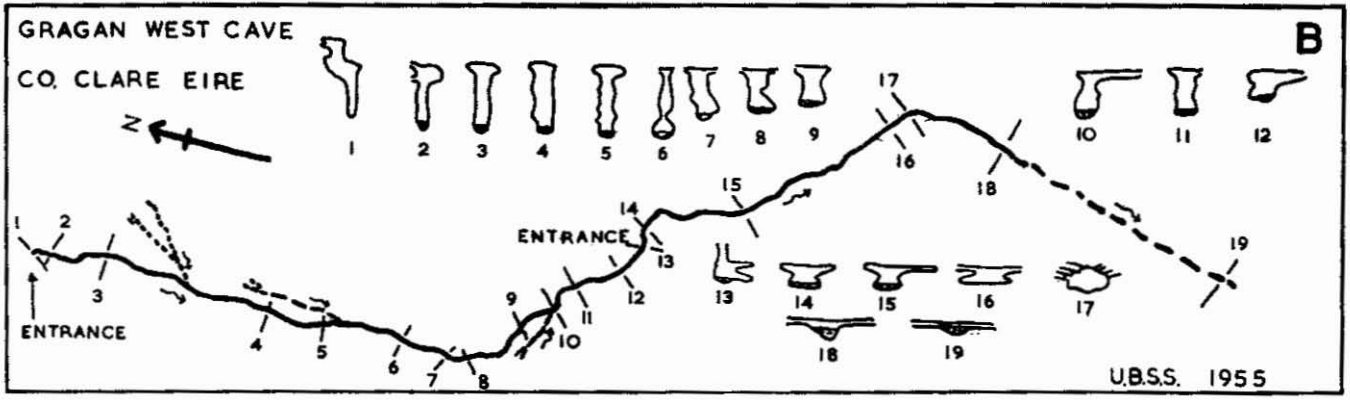
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PLATE 7