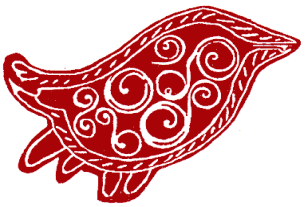
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Recent Souterrain Research in Co. Cork

By DERMOT C. TWOHIG

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The following report is based on surveys of seven Co. Cork souterrains; the collective evidence from these sites is discussed in the context of other Irish and European souterrains.

Castlemagner

This souterrain was first discovered about ten years ago when the ring-fort within which it was situated was deliberately levelled.[1] The entrance to the souterrain at the time of the present excavation was through the accidental opening made in the roof of the souterrain chamber at the time the ring-fort was levelled. Since the time of its first discovery, the roof of the souterrain chamber had become increasingly dangerous and in order to prevent further danger to livestock the landowner decided to backfill the structure. At that time we were involved nearby in the excavation of two ring-forts at Lisduggan North and it was possible therefore without too much difficulty to undertake a rescue excavation of the souterrain before it was backfilled. This excavation was undertaken in July 1972.

A preliminary survey showed that the souterrain had originally been situated approximately in the centre of the enclosure of the now levelled ring-fort. Before excavation, the souterrain itself was seen to consist of a rectangular chamber which had been constructed of dry-built stone walls which were corbelled from the ground up. The roof consisted of large stone slabs which were carried on the tops of the side walls of the chamber. A stone built creepway led off the east end of the chamber at floor level but this was impenetrably blocked with habitation debris. At the west end of the chamber, a stone built ventilation shaft led out from the chamber at roof level. This ventilation shaft was also impenetrably blocked.

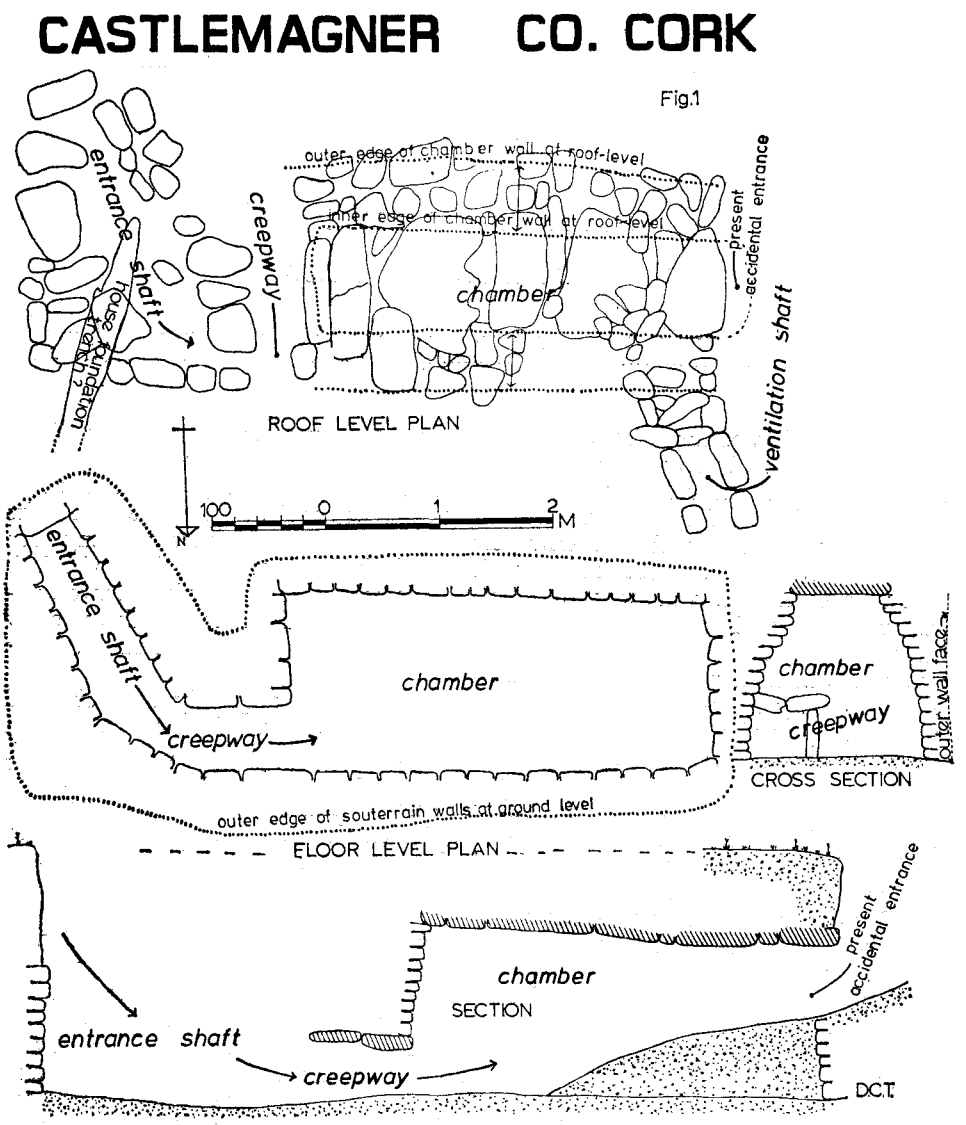
Excavation began by removing the turves in the ring-fort enclosure in that area immediately above the souterrain. The sub-soil was then trowelled downwards to the top of the roof of the chamber. During this work a shallow trench was found to run over the backfill of the original entrance shaft to the souterrain. This trench measured on average 20cm in width and 30cm in depth. The excavated run of this trench measured 2m. The fill of the trench consisted of finely-ground charcoal and bone intermixed with a fine-textured soil. Because of the rescue nature of this excavation, no attempt was made to follow the line of this trench. It has however been indicated on the souterrain plan (fig.1) and it could be followed at some time in the future should it be decided to excavate fully the ring-fort enclosure. Further ex-

[1] Exact location; O.S. ½″ Sheet No. 21, National grid co-ordinates R441027. O.S. 6″ Sheet Co. Cork No. 24, 14.4 cm from S-margin, 1.3 cm from W-margin. Castlemagner Td., Castlemagner Ph., Duhallow By. O.D. 300-400.′

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cavation revealed the full extent of the roof of the souterrain chamber and the ventilation shaft. The original entrance shaft to the souterrain chamber was also located.

Entrance-shaft: This feature was situated at the eastern end of the souterrain and it gave access to the chamber through a short creepway. The entrance shaft was rectangular in plan and measured 2m in length and 50cm in width. The floor of the

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shaft was at a level of 2.2m below the surface of the ring-fort enclosure. The lower 1.1m of the sides and end-walls of the entrance shaft were of dry-built stone work. This stone work was roughly coursed and in all there were about nine courses of stone. The upper walls of the entrance shaft were clay-cut and unrevetted. The main axis of the entrance shaft ran approximately north-west to south-east. At the time of excavation the entrance shaft was unroofed so that when it was fully excavated it gave direct access to the chamber, via the creepway, from the ring-fort enclosure above the souterrain.

Creepway: This feature was situated at the north-west end of the entrance shaft. Measurements on average: length 1m, width 50cm, height 40cm. The side walls of the creepway were faced with large flat stones standing on end. The creepway was roofed by two large slabs which were carried on the tops of the side stones. The roofing slab nearest the souterrain chamber was cracked and this had caused it to sag downwards into the creepway.

Chamber: This was approximately rectangular in plan. Measurements on average: length 3.6m, width 1.5m, height 1.4m. The sides and end walls were of dry-built stone work and were corbelled from the floor level up. In all there were about fifteen courses of corbelling. The upper five or six courses projected well into the chamber to narrow the span so that it could be covered by the roofing slabs. When the ring-fort enclosure above the souterrain was being levelled, the weight of the traxcavator caused one of the roofing slabs at the western end of the chamber to collapse into the chamber and this had been followed by much of the overlying boulder clay. The collapse of this roofing slab had originally led to the discovery of the souterrain, and entry to the structure at the time of the present excavation was through that accidental opening in the roof. No finds were made in the excavation of the fill of the chamber.

Ventilation-shaft: This feature measured on average: length 1.9m, width 30cm, height 20cm. The sides of the shaft consisted of two parallel lines of stones which had been set end-to-end. The roof of the shaft was of flat pieces of stone which spanned the width of the shaft and rested on the tops of the stones which constituted the sides of the shaft. The floor of the shaft was of boulder clay. This ventilation shaft led off from the north-west corner of the souterrain chamber at roof level and it sloped upwards to reach the surface of the ring-fort enclosure above the souterrain. Nothing was found during the excavation of the fill of the shaft.

Excavation showed that the Castlemagner souterrain consisted essentially of an entrance shaft, chamber and ventilation shaft. It could be seen that the construction of the souterrain began by excavating a large rectangular pit into the then field surface. This pit measured on average: length 6.5m, width 2.5m, depth 2.5m. From these dimensions it can be seen that the size of the pit was just sufficient to accommodate the souterrain which was then constructed inside in the pit. When the souterrain was completed the open spaces between the souterrain and the sides of the pit were backfilled and the souterrain roof covered over so that nothing showed on the surface of the ring-fort enclosure above the souterrain. The excavation of the souterrain and pit was undertaken in such a way as to remove the soil which had been backfilled into the pit when the souterrain had been completed. This demonstrated that the souterrain entrance-shaft and chamber had originally been constructed as free-standing structures within the pit. Neither the sides of the pit nor the soil which had subsequently been backfilled into the pit on completion of the souterrain contributed

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structurally to any part of the souterrain.

An examination of the roofing slabs of the souterrain chamber showed that they consisted of limestone and they had probably been quarried locally from a limestone outcrop. All the roofing slabs were in a bad condition, being extensively cracked, soft and thin. This had apparently resulted from the effects of percolating, slightly acidic, rain water through the overlying soil which, when it came into contact with the limestone roofing slabs, dissolved the limestone. The fragmentary remains of the roofing slab which had been recovered from the fill of the souterrain chamber showed that its resistance to the weight of the traxcavator at the time the ring-fort was being levelled could only have been very slight.

When the surviving roofing slabs had been removed from the tops of the chamber walls it could be seen that the sides and end walls of the souterrain chamber were of a greater thickness (50cm) at the top of the walls than at the bottom of the walls (30cm). The outer faces of the chamber walls which had been vertically built were of rough, uncoursed stonework. The core of the walls consisted of a stone rubble filling held in a clay matrix. The walls of the entrance-shaft had been constructed in a similar manner but they were of a constant thickness from top to bottom. It is of significance to note that the upper courses of corbelling in the chamber walls did not collapse into the chamber when the roofing slabs of the chamber were removed. The main factors which prevented this collapse were the presence of large stones which rested on the tails of the top courses of corbelling in addition to the bonding effect of the matrix of clay and rubble which constituted the core of the chamber walls. The ventilation -shaft had been constructed by cutting a trench in the boulder clay with an upward slope from the roof of the chamber to the surface of the ring-fort enclosure above. This trench had been cut just wide enough to accommodate the ventilation-shaft. Excavation of the fill of the entrance shaft produced a large quantity of animal bones and charcoal (yet to be identified). Nothing in the form of artefacts was found. The remains of a number of large slabs were found in the fill of the entrance-shaft and it appeared possible that these may originally have been used to close the mouth of the entrance-shaft when the souterrain was not in use.

Without total excavation of the ring-fort enclosure within which the souterrain was situated there was no way of establishing with any measure of certainty what the relationship had been between the ring-fort and the souterrain. However it did seem possible that the habitation debris found in the fill of the entrance-shaft of the souterrain may have been thrown in at a time when the ring-fort enclosure was being lived in. This would suggest that the souterrain had gone out of use at that time. This however does not mean that the souterrain predated the ring-fort. It is more likely that the souterrain, the construction of which was probably contemporary with that of the ring-fort, was no longer required to fulfill its original purpose and was therefore used subsequently as a convenient rubbish pit.

The trench which was shown by excavation to overlie the fill of the entrance shaft could well have been the foundation trench of a house which once stood within the ring-fort enclosure. Perhaps further excavation of the enclosure would produce houses of similar type to those which had recently been excavated in a nearby ring-fort at Lisduggan North (Twohig, in the press). A similar situation to that at Castlemagner which involved the relationship between a ring-fort and its contained souterrain was recently investigated by the writer at Causeway, Co. Kerry (Twohig 1974). At the Causeway site, on the basis of the available evidence, it was suggested that

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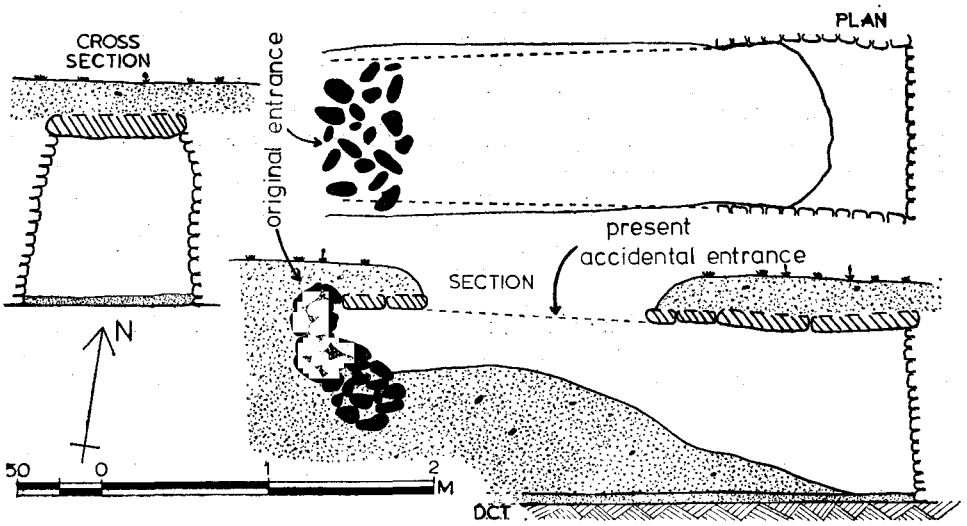
perhaps the ring-fort and souterrain were more or less contemporary and that some type of house had probably stood adjacent to or directly over the entrance to the souterrain.

The excavation of the Castlemagner souterrain was of particular interest in that it helped in the interpretation of the structural form of other souterrains of a similar type previously investigated by the writer but which, for a variety of reasons, could not be excavated at the time of their discovery. It can now be suggested that the entrance to souterrains such as those at Kilpadder and Kilmaclenine (see below), Oughtihery (Twohig 1971a) and Sheepwalk (Twohig 1973) may have been similar in their essential details to the entrance-shaft of the Castlemagner souterrain. Likewise, their mode of construction may have followed the same sequence.

Kilmaclenine

This souterrain was situated at a distance of about 600m from the medieval castle of Kilmaclenine.[2] The souterrain was first discovered in May 1973 when the wheel of a tractor caused part of the roof to collapse. At the time of the present survey, entry to the souterrain was through this accidental opening in the roof of the chamber. There was much spoil in the souterrain chamber as a result of this collapse and apparently as a result of a previous deliberate backfilling of the chamber. In so far as could be determined without excavation, the souterrain was approximately rectangular in plan. It measured 3.6m in length. The width of the chamber at floor

KILMACLENINE CO. CORK Fig. 2



[2] Exact location; O.S. ½″ Sheet No. 21, National grid co-ordinates R503050. O.S. 6″ Sheet Co. Cork No. 24, 19.2 cm from N-margin, 28.6 cm from E-margin. Kilmaclenine Td., Kilmaclenine Ph., Orrery and Kilmore By. O.D. 400-500.'

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level was 1m, and this narrowed to 70cm at roof level. The chamber was about 1m in height. The sides and end walls were of dry-built stone work. The walls were roughly coursed and in all there were fourteen to sixteen courses of stone. The chamber was roofed with stone slabs which were carried on the tops of the side walls. At the time of the present survey six roofing slabs had survived in their original positions. The spoil on the floor of the chamber probably covered the other roofing slabs which had collapsed beneath the weight of the tractor. The floor of the chamber at the east end was covered to a depth of about 2cm with what appeared to be sterile washed-in clay. The floor of the chamber beneath the clay was of horizontally bedded limestone. There was some evidence to suggest that some of the limestone bedrock had been chipped away in an attempt to obtain a level floor for the souterrain. Without excavation there was no way of determining whether or not some of the limestone bedrock had actually been quarried out in order to accommodate the souterrain chamber. Many of the stones in the side walls of the chamber were, however, of small sub-angular pieces of limestone built in with the more rounded stones which had been derived from the boulder clay which overlay the limestone bedrock. The roofing slabs of the chamber were also of limestone. It could well be that the reason why the roof collapsed beneath the weight of the tractor was due to the fact that slightly acidic rain water percolating through the soil had dissolved away some of the limestone thereby weakening the roofing slabs sufficiently so as to permit the weight of the tractor overhead to cause them to collapse. That this can in fact happen to souterrains roofed with limestone slabs was shown by excavation to have been the case at the Castlemagner souterrain (see above).

At the western end of the chamber a filling of stones could be seen to run from about roof level and disappear beneath the recent fill in the chamber. It was possible to see that the filling of stones extended almost to the present field surface. The location of this fill can be paralleled at a souterrain at Riverstown, Co. Louth (Twohig 1971b). It would appear that the stone-filled shaft represented a dumping of field-stones into a previous opening to the souterrain chamber. It could be that this shaft was the original entrance to the souterrain. There was definitely no entrance at the eastern end of the chamber, consequently one must assume that it was at the western end of the chamber and somewhere in the vicinity of the stone filling. On the basis of the evidence of three other souterrains in Co. Cork, Oughtihery (Twohig 1971a), Lyre (O'Kelly and Shee 1968), Castlemagner (see above), it would seem that the original entrance to the Kilmaclenine souterrain may have been in the form of a stonebuilt creepway and entrance shaft now buried beneath the stone filling and recent spoil.

No trace of any structure could be identified on the field surface above the souterrain and there was no indication on any edition of the O.S. 6 inch map of any structure in the immediate vicinity of the souterrain. Nothing was found during the survey which would indicate for what purpose the souterrain had been built and used.

Kilpadder

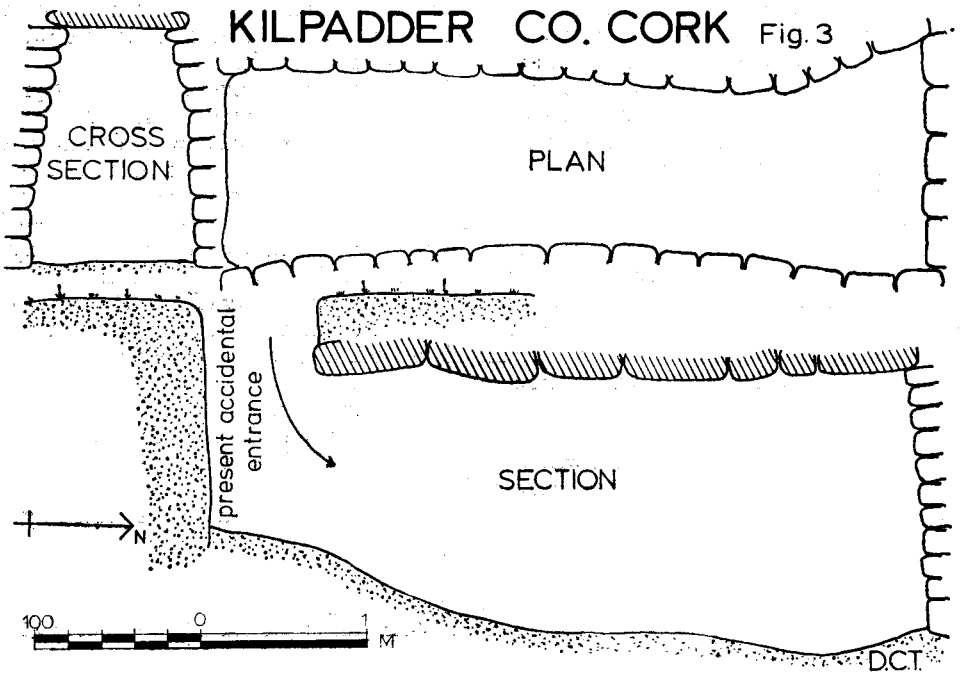
This souterrain was first discovered in April 1974 when a plough-share caught in and fractured one of the roofing slabs of the chamber.[3] When the tractor and plough

[3] Exact location; O.S. ½" Sheet No. 21, National grid co-ordinates W515939. O.S. 6" Sheet Co. Cork No. 41, 5.6 cm from N-margin, 17.7 cm from E-margin. Kilpadder South Td., Kilshannig Ph., Duhallow By. O.D. 400-500'.

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backed-up, the fractured roofing slab fell into the chamber, followed by much spoil. At the time of the present survey entry to the souterrain chamber was through this accidental opening in the roof. The souterrain was approximately rectangular in plan. It measured on average: length 4.2m, height 1.4m. The width of the chamber at floor level was 1m and this decreased to 60cm at roof level. The sides and end walls of the chamber were of dry-built stone work. The walls were roughly coursed and in all there were ten to thirteen courses of stone. The building stones were of sandstone and quartz and these may have been derived from the local boulder clay. There was some evidence to show that the visible faces of some of the stones in the walls of the souterrain had been roughly dressed when they had already been built into position. The chamber was roofed with stone slabs which were carried on the tops of the side walls. At the time of the present survey seven roofing slabs had survived in their original positions. Part of the roofing slab which had been fractured by the plough could be seen under the spoil in the chamber. In the spoil also could be seen many of the building stones which had come from the wall at the southern end of the chamber. It would appear that this wall collapsed when the roofing slab above it was pulled out of place by the plough.

There was no evidence anywhere for the original entrance to the souterrain. On the basis of the evidence from other Co. Cork souterrains at Oughtihery (Twohig 1971a), Lyre (O'Kelly and Shee 1968) and Castlemagner (see above), it could well be that the original entrance to the Kilpadder souterrain may have been in the form of a stone built creepway and entrance shaft which were now impenetrably blocked beneath the spoil which got into the chamber as a result of the recent roof collapse.



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It would however have required excavation to examine this possibility.

There was no evidence for any structure on the field surface above the souterrain and no edition of the O.S. 6 inch map indicated that any structure had existed at the time of the survey. The visible surfaces of the roofing slabs were examined, without success, for traces of ogham inscriptions. Nothing was found during this survey which would indicate for what purpose the souterrain had been built and used.

Ahakeera

This souterrain was first discovered[4] in July 1973 when the wheel of a silage harvester caused part of the roof of one of the chambers to collapse. At the time of the present survey entry to the souterrain was through that accidental opening in the chamber roof. The souterrain consisted of five chambers, an entrance shaft and a stone covered drain, all of which had been tunnelled into the boulder clay. A series of short creepways connected the chambers with each other. Two of the creepways had stone jambs built into one side thereby making passage through the creepways particularly difficult. The souterrain will be described seriatim from chambers 1 to 5.

Chamber 1: This was irregular in plan. Its maximum length and width were 4.2m and 2.1 respectively. The average height was about 1m. Part of the north wall of the chamber consisted of a dry-built stone wall. This measured about 1.2m in width and 60cm in height. The wall was only one stone in thickness and measured 20cm. Leading off the western end of the chamber was a clay-cut shaft which appeared to lead to the surface. This shaft measured about 40cm in width and height. At the time of the present survey this shaft was impenetrably blocked. It was not possible therefore without excavation to determine the full extent of the shaft. This chamber joined with chamber 3 via a creepway in the south-east corner of chamber 1. This creepway measured on average: 40cm in height and width, 50cm in length.

Chamber 2: This was subrectangular in plan. Measurements on average: length 3.5m, width 1.2m, height 1m. A dry-built stone wall, comparable to the one in chamber 1, occurred in the north wall of the chamber. This chamber joined with chamber 3 via a creepway in the north-east corner of chamber 2. The creepway measured 2.2m in length. The average width and height was about 50cm. At that point where the creepway joined with chamber 3 a stone jamb had been built into the eastern side of the creepway. The jamb had been set at an angle to the main axis of the creepway. Directly across the creepway from where the stone jamb was set, a column of clay had been left standing. Consequently the jamb and column of clay effectively reduced the width of the creepway to about 30cm. It appeared that the arrangement of the jamb and column of clay had been organised in such a way as to prevent straight through access, via the creepway, from chamber 3 to 2.

Chamber 3: This was approximately subrectangular in plan. Measurements on average: length 3.6m, width 1.7m, height 1m. The north-west corner of the chamber had been tunnelled out in such a way as to provide a lead-in to the creepway which joined chambers 3 and 2. To the north of this lead-in was a dry-built stone wall which was comparable to the ones in chambers 1 and 2. Chambers 3 and 4 were joined by a

[4] Exact location: O.S. ½" Sheet No. 24, National grid co-ordinates W274587. O.S. 6" Sheet Co. Cork No. 94, 23.4 cm from S-margin, 38.8 cm from W-margin. Ahakeera Td., Fanlobbus Ph., East Carbery By. O.D. 400-500'.

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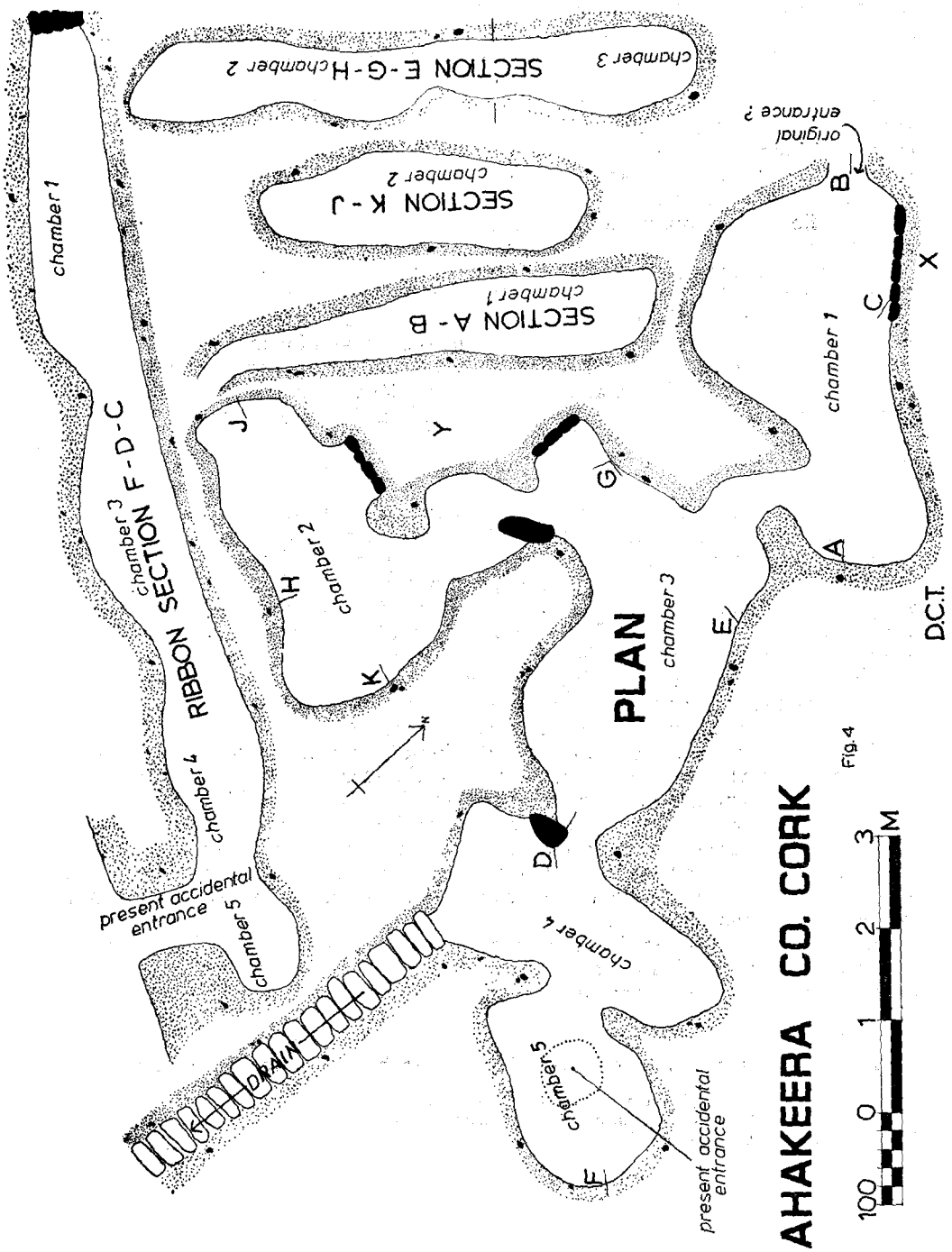


Fig. 4

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creepway which led off from the south-east corner of chamber 3. This creepway measured 50cm in length. The average width and height was 50cm. A stone jamb had been built into the west wall of the creepway. This jamb effectively reduced the width of the creepway to 30cm.

Chamber 4: This was approximately subrectangular in plan. Measurements on average: length 3.1m, width 1.1.m, height 1m. A drain led off from the south corner of the chamber at floor level. The dimensions of the drain were, on average: length 4m, width 40cm, height 20cm. It was difficult without excavation to determine exactly how this drain had been constructed. The evidence as it was showed that the sides and floor of the drain had been cut into the boulder clay. The roof of the drain was of flat pieces of sandstone which were carried on the side walls. It appeared possible that a large pit had been excavated here through which the spoil from chambers 4 and 5 had been brought to the surface. The drain could then have been built into the bottom of this pit before it was backfilled from the surface. Chambers 4 and 5 were connected via a creepway in the south wall of chamber 4. This creepway measured 30cm in length. The average width and height was about 60cm.

Chamber 5: This was irregularly oval in plan. Measurements on average: length 2.3m, width 1.4m. The entrance to the souterrain at the time of the present survey was through the accidental opening in the roof of this chamber. Much of the spoil on the floor of the chamber had resulted from the roof collapse which had created this opening.

The Ahakeera souterrain consisted essentially of five chambers connected by four creepways (two of which had jambs), a stone covered drain and possibly an original entrance. The jambs created considerable difficulty in negotiating the creepways in which they occurred. This brought into question the purpose for which the souterrain was built. The jambs could certainly be considered to be effective defensive features. This souterrain, like those at Ballinacarriga, Templebryan and Cullenagh (see elsewhere this report), belongs to the type of souterrain where the chambers and creepways were tunnelled out of the clay. During the construction of the Ahakeera souterrain, the spoil excavated from the chambers was brought to the field surface through open pits at points X and Y (see plan, fig.4). Chamber 1 would have been tunnelled out from the pit at X and chambers 2 and 3 from the pit at Y. When the work had been completed the openings from the pits to the chambers were closed with dry-built stone walls and the pits then backfilled from the field surface. If, as was suggested above, the drain which led off from chamber 4 at floor level had been constructed by cutting a pit from the field surface at that point, then the clay removed from chambers 4 and 5 may have been brought to the surface through that pit before the drain was constructed. It is possible that excavation may reveal the existence of a soak-pit at the terminal end of the drain.

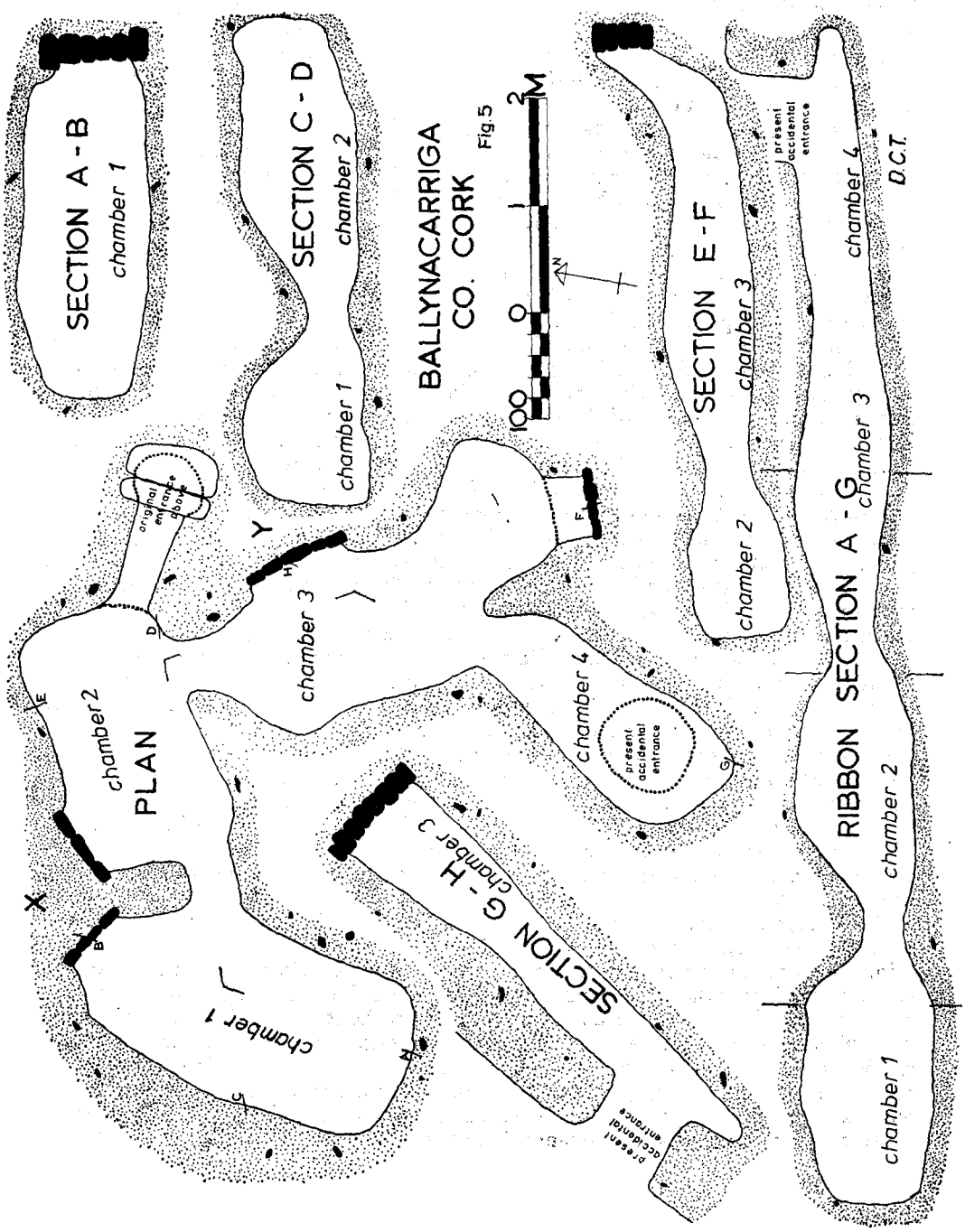
There was no visible evidence for any structure on the field surface above the souterrain and no edition of the O.S. 6 inch map indicated that any structure had existed at the time the surveys for those maps were undertaken.

Ballinacarriga

This souterrain was first discovered[5] in September 1973 when after a period of

[5] Exact location: O.S. ½" Sheet No. 24, National grid co-ordintaes W292488. O.S. 6" Sheet Co. Cork No. 121, 12.2 cm from N-margin, 38.6 cm from E-margin. Cloonkirgeen Td., Kilmeen Ph., East Carbery By. O.D. 300-400'.

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heavy rain the roof of one of the chambers collapsed. At the time of the present survey entry to the souterrain was through this accidental opening in the roof of that chamber. The souterrain consisted of four chambers and an entrance shaft. The chambers were connected to each other by short creepways. The souterrain will be described seriatim from chambers 1 to 4.

Chamber 1: This was subrectangular in plan. Measurements on average: length 3.2m, width 1.6m, height 1.2m. Part of the north wall of the chamber consisted of dry-built stone walling. This measured 70cm in width and 1m in height. The wall was one stone in thickness. Chamber 1 joined with chamber 2 via a creepway in the east wall of chamber 1. The creepway measured 50cm in length. The average width and height was 40cm.

Chamber 2: This was subrectangular in plan. Measurements on average: length 2.4m, width 1.3m, height 1.1m. Part of the north wall of the chamber was of dry-built stone walling comparable to the wall in chamber 1. Leading off the south-east corner of chamber 2 was an unlined shaft which had been tunnelled out of the boulder clay. This shaft led to the field surface above the souterrain. At the time of the present survey the mouth of the shaft where it joined with the fieldsurface was closed by two large slabs. The level of the floor of the shaft, where it joined with chamber 2, was about 30cm above the level of the floor of that chamber. It appeared probable that this shaft represented the original entrance to the souterrain. Chambers 2 and 3 were joined by a creepway which led off from the south wall of chamber 2. The creepway measured 30cm in length and 40cm in width and height.

Chamber 3: This was irregularly linear in plan. Measurements on average: length 3.7m, width 1.4m, height 80cm. Part of the east wall of the chamber was of dry-built stone walling, comparable in all details to the walls in chambers 1 and 2. A similar type of stone wall was visible in the south wall of this chamber; however in this particular instance the wall appeared to seal off a shaft which led directly to the field surface above the souterrain. This wall was approximately 70cm in width and 60cm in height. The level of the bottom of the wall was about 70cm above the floor level of the chamber. Access from this chamber to chamber 4 was via a creepway in the west wall of the chamber. The creepway was 30cm in length. The average width and height of the creepway was 50cm.

Chamber 4: This was subrectangular in plan. Measurements on average: length 2.6m, width 1m, height 60cm. The present entrance to the souterrain was through the accidental opening in the roof of this chamber. The spoil on the floor of this chamber had resulted from the roof collapse which had created the accidental opening. There was no evidence to suggest that another chamber lay beyond the southern end of this chamber.

The Ballynacarriga souterrain consisted essentially of four chambers connected by short creepways and what was probably the original entrance shaft to the souterrain. It seemed possible that the two stone slabs which blocked the mouth of the entrance shaft may have been put in position when the souterrain went out of use. The visible surfaces of these slabs were examined without success for traces of ogham inscriptions. This entrance shaft compares well with those in souterrains at Ballyrisode, Co. Cork (Twohig 1973) and at Templebryan, Co. Cork (see below). The Ballynacarriga souterrain belongs to that type of souterrain where the chambers, creepways and entrance shaft were tunnelled out of the boulder clay. In this particular souterrain two large pits were opened from the field surface at points X and Y (see

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plan, fig.5). The spoil excavated from chambers 1 and 2 would have been brought to the surface through the pit at X. The spoil excavated from chambers 3 and 4 would have been brought to the surface through the pit at Y with some amount of it removed through the shaft which led off from the south end of chamber 3. When the souterrian was completed the openings from the pits to the chambers were closed with dry-built stone walling and the pits then backfilled from the field surface.

There was no evidence of any structure on the field surface above the souterrain and no edition of the O.S. 6 inch map indicated that any structure had existed at the time the surveys for those maps were undertaken.

Templebryan

This souterrain was first discovered[6] in April 1974, when after a period of heavy rain the roof of one of the chambers collapsed. Entrance to the souterrain at the time of the present survey was through this accidental opening in the roof of chamber 3. This souterrain was of particular interest in that it was situated within the early christian period monastic enclosure of Templebryan. The 1905 edition of the O.S. 6 inch map shows the existence of another souterrain within the Templebryan enclosure; this souterrain, however, was not visible on the ground surface at the time of the present survey. Two souterrains therefore are now known to exist within the Templebryan enclosure and it is possible that other souterrains are yet to be found within this enclosure. The souterrain with which this report is concerned consisted of three chambers connected by short creepways. These will now be described seriatim from chambers 1 to 3.

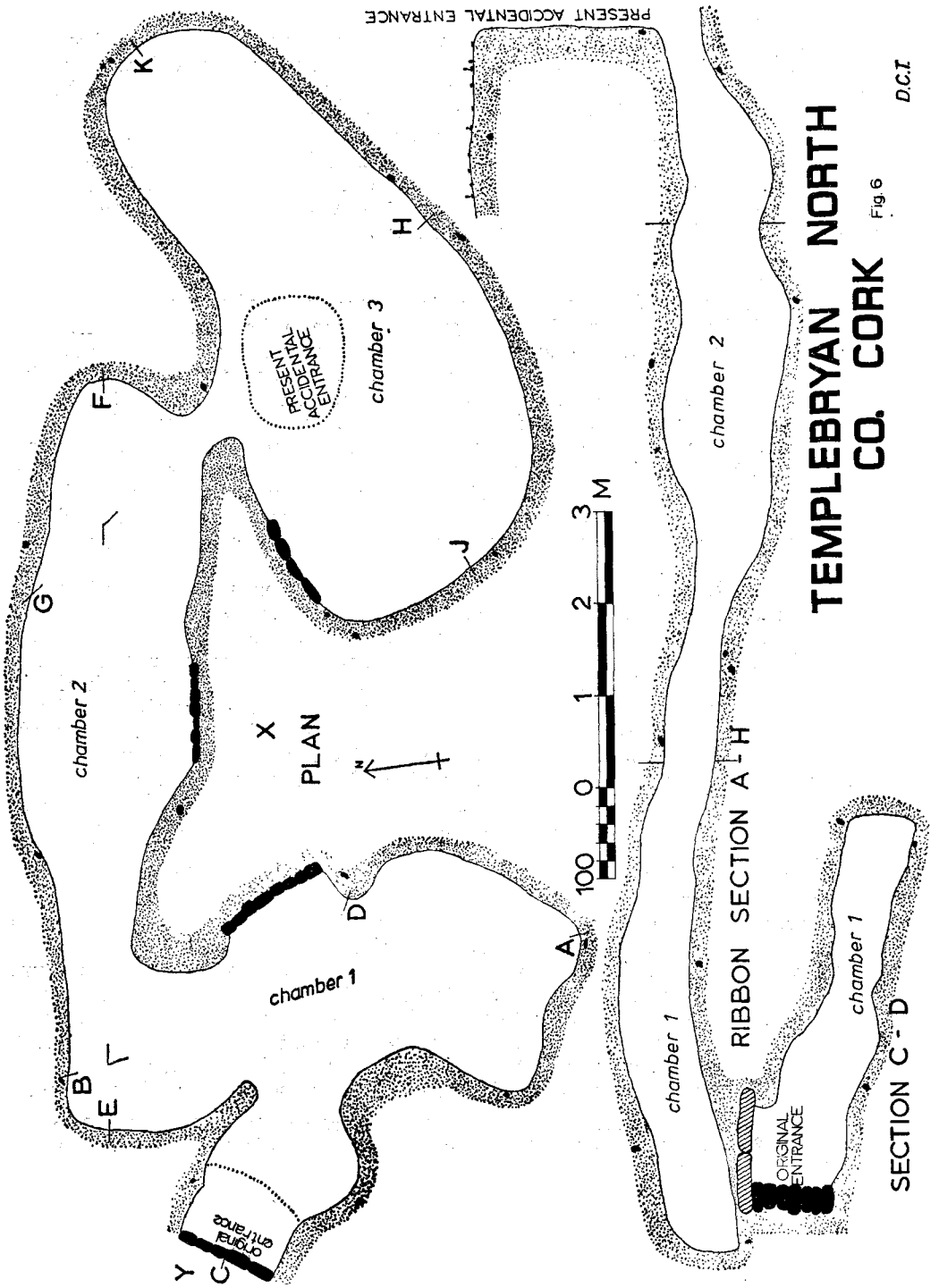
Chamber 1: This was irregular in plan. Measurements on average: length 5.7m, width 2.2m, height 80cm. Part of the east wall of the chamber was of dry-built stone walling. This wall measured 1.2m in width and 90cm in height. A creepway which led off from the west wall of the chamber joined with a vertically cut shaft which had originally joined with the field surface above the souterrain. The mouth of this shaft was closed by two large stone slabs. It seemed probable that this may have been the original entrance to the souterrain. The west wall of the vertically cut shaft was of dry-built stone walling which was comparable to the wall in chamber 1.

Chamber 2: This was irregularly linear in plan. Measurements on average: length 6m, width 1.7m, height 1.1.m. This chamber joined with chamber 1 via a creepway which led off from the west wall of chamber 2. The creepway was 60cm in length. The average width and height of the creepway was 70cm. About midway along the south wall of this chamber was a run of dry-built stone walling which was comparable in all details to the wall in chamber 1. Chamber 2 joined with chamber 3 via a creepway which led off from the southeast corner of chamber 2. This creepway was 80cm in length. The average width and height of the creepway was 60cm.

Chamber 3: This was irregular in plan. Measurements on average: length 6.5m, width 2.5m, height 60cm. The entrance to the souterrain at the time of the present survey was through the accidental opening in the roof of this chamber. The large quantity of spoil on the floor of this chamber was a result of the roof collapse which created the accidental opening in the roof of the chamber. There was sufficient evidence to show that a short run of dry-built stone walling also existed in the north-west

[6] Exact location: O.S. ½″ Sheet No. 25, National grid co-ordinates W385438. O.S. 6″ Sheet Co. Cork No. 122, 4.1 cm from S-margin, 42.3 cm from E-margin. Templebryan North Td., Templebryan Ph., East Carbery By. O.D. 200-300′.

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corner of this chamber.

The Templebryan souterrain therefore consisted essentially of three chambers connected by short creepways. The vertically-cut shaft which led off from the west wall of chamber 1 was taken to represent the original entrance to the souterrain. There was no evidence elsewhere in the souterrain for an original entrance. What was considered to be the original entrance shaft was comparable to the entrance shafts to souterrains at Ballyrisode (Twohig 1973) and Ballynacarriga, Co. Cork (see above). The Templebryan souterrain is one of a type where the chambers and creepways were tunnelled out of the clay. At Templebryan two pits were opened from the then field surface through which the spoil excavated from the chambers and creepways was brought to the surface (at X and Y on plan fig.6). The spoil from chambers 2 and 3 was brought to the surface through the pit at X as well as some of the spoil from chamber 1. The remainder of the spoil from chamber 1 was brought to the surface through the pit at Y. When the souterrain was completed the openings from these pits to the chambers were closed with dry-built stone work and the pits were then backfilled from the field surface. The two stones which had been used to close the mouth of the entrance shaft were examined without success for traces of ogham inscriptions.

There was no evidence for any structure on the surface of the monastic enclosure directly over the souterrain. No edition of the O.S. 6 inch map showed any evidence for such a structure.

Cullenagh

This souterrain was first discovered[7] in July 1974 when the wheel of a silage harvester caused part of the roof of one of the souterrain chambers to collapse. Entry to the souterrain at the time of the present survey was through this accidental opening in the roof of chamber 1. The souterrain consisted of two chambers connected by a creepway.

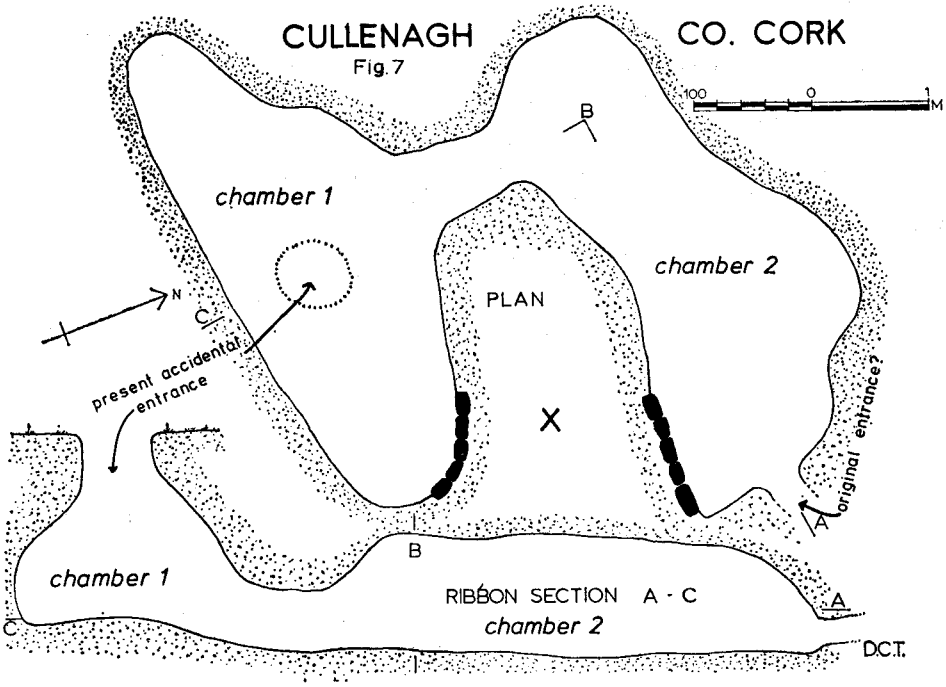
Chamber 1: This was subrectangular in plan. Measurements on average: length 4.5m, width 1.3m, height 1m. The north-east corner of the chamber was of dry-built stone walling. This wall measured 90cm in width and 90cm in height. Chamber 1 joined with chamber 2 via a creepway which led off from the north wall of chamber 1. This creepway was 90cm in length. The average width and height of the creepway was about 50cm.

Chamber 2: This was subrectangular in plan. Measurements on average: length 4.3m, width 1.8m, height 1m. In the south-east corner was a dry-built wall comparable to the wall in chamber 1. In the east wall of this chamber was a creepway which measured about 30cm in width and height. At the time of the present survey this creepway was impenetrably blocked. It did however appear as if this creepway was sloping upwards towards the field surface above the souterrain and it could be therefore that this may have been the original entrance to the souterrain. In the absence of excavation there was no way of proving this and it is equally possible that this creepway was leading to another chamber as yet undiscovered.

The Cullenagh souterrain was of the rock and clay cut type in that the chambers and creepways had been tunnelled out. The spoil excavated from chambers 1 and

[7] Exact location: O.S. ½″ Sheet No. 24, National grid co-ordinates W146353. O.S. 6″ Sheet Co. Cork No. 142, 16.8 cm from N-margin, 14.4 cm from W-margin, Cullenagh Td., Castlehaven Ph., West Carbery By. O.D. 100-200′.

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2 was brought to the field surface through an open pit at point X (see plan, fig.7) When construction had been completed the openings from the pit to the chambers were closed with dry-built stone walling and the pit was then backfilled from the field surface. There was no visible evidence for any structure on the field surface above the souterrain and no edition of the O.S. 6 inch map indicated that any structure had existed at the time the surveys for those maps were undertaken. Nothing was found during the survey which would suggest for what purpose the souterrain was built and used.

DISCUSSION

This discussion, which is based on the writer's limited experience of Irish souterrains, has been written in order to correlate the evidence from the souterrains described above and elsewhere (Twohig 1971a, 1971b, 1973, 1974) which have been investigated by the writer since 1969. Although thirteen souterrains were surveyed only one of these (Castlemagner) was excavated. This was in the main due to commitments elsewhere at the time the souterrains were discovered, in addition to the difficulty of obtaining the necessary finance to undertake an excavation. In the absence of more excavations therefore, many questions remain unanswered. However when taken

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together, the surveys of these souterrains provide a composite picture which allows some general statements to be made about the modes of construction and the various structural details found in Irish souterrains. In the second part of this discussion, Irish souterrains are discussed in a European context in an attempt to compare and contrast the Irish examples with those souterrains which exist outside of Ireland.

In their mode of construction, Irish souterrains can be divided into two types: (1) souterrains of dry-built stone work, and (2) rock and clay cut souterrains. In the type 1 souterrain, a large pit was excavated in the field surface to accommodate the souterrain structure which was constructed of dry-built stone walls and was usually roofed with large stone slabs which were carried on the tops of the side walls. Excavation of one such example at Castlemagner, Co. Cork (see above) showed that the souterrain's structural features (i.e. chamber, creepway and entrance shaft) had been built as free-standing entities within the large pit which had been excavated to accommodate them. When the construction of this type of souterrain was completed the space which remained between the sides of the pit and the souterrain was backfilled with soil from the field surface and the roof of the chamber was likewise covered so that nothing of the souterrain was visible on the field surface. In the type 2 souterrain, the chambers, creepways and entrance shaft of the souterrain were tunnelled out of the rock and clay (e.g. Ballinacarriga, Templebryan etc.). This was usually achieved by opening up a pit or pits in the field surface through which the clay and rock debris which had been removed in the tunnelling of the chambers and creepways could be brought to the surface. When the required chambers, creepways etc., had been completed, the openings from the chambers to the pits were built up with dry-built stone work and the pits were then backfilled from the field surface. The dry-built stone walls which are to be found in the chambers were functional in that they prevented the loose backfill in the pits from spilling into the chambers. While type 1 souterrains could be constructed in all parts of the country, except perhaps where the bedrock was too hard to be readily quarried or where the water table was close to the surface, the type 2 souterrain could only be constructed where the consistency of the subsoil was such that it was sufficiently resistant to collapse to maintain the roofs and sides of the chambers and creepways intact without further supports. A combination of the construction techniques used in types 1 and 2 souterrain can sometimes be found together in the same souterrain as for example at Dromkeen East, Co. Kerry (Twohig 1974).

Many of the type 1 souterrains in the south of Ireland are rectangular or wedge-shaped in plan (e.g. Oughtihery, Sheepwalk — Twohig 1971a, 1973, Kilmaclenine, Kilpadder — see above). These consist of one chamber (about 4m in length), and an entrance shaft which joins with the chamber by way of a short creepway. In that area approximately north of a line from Dublin to Galway, the type 1 souterrain is frequently of greater overall length (up to 8m) and they are sometimes provided with 'bee-hive' chambers (e.g. Riverstown, Co. Louth, Twohig 1971b). The type 2 souterrain can have from 1 to 6 or more chambers which are frequently oval or sub-rectangular in plan. Chamber length varies from about 2m to 7m. These chambers are connected by short creepways (about 50cm in length). The creepways are approximately circular in section with diameters of about 50cm.

Structural features found in souterrains of types 1 and 2 include drains (Ahakeera —see above), ventilation shafts (Keelnameela, Twohig 1971b, Castlemagner — see above), wall recesses (Dromkeen East, Twohig 1974), 'beehive' chambers (Rivers-

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town, Twohig 1971a, Dromkeen East, Twohig 1974). Chimneys and hearths have also been recorded (Ó Ríordáin 1942). Defensive features such as sills (Riverstown, Twohig 1971b), jambs (Ahakeera — see above) and false floors (Riverstown, Twohig 1971b) are also known.

The total number of souterrains in Ireland may be in the order of about 30,000 (Clark 1961, Thomas 1972) and their distribution though widespread does show concentrations in certain parts of the country (see distribution map in Lucas 1971-73) In so far as can be determined souterrains occur with the greatest frequency in ringfort enclosures. However some examples have been shown to be associated with unenclosed houses (e.g. Craig Hill, Co. Antrim, Waterman 1956). Some souterrains are apparently unassociated with any surface features (e.g. Oughtihery, Co. Cork, Twohig 1971a); however excavation would be necessary to prove this. Souterrains can also be associated with stone-forts, promontory forts, monastic enclosures, etc. On the basis of evidence from excavated souterrains one of the interesting patterns which is beginning to emerge is the fact that many souterrains were directly associated with house sites. In the cases of Craig Hill, Co. Antrim (Waterman 1956) and Raheennamadra, Co. Limerick (Stenberger 1966) the actual entrance to the souterrain was from within a house which stood more or less above the souterrain. There was sufficient evidence from two of the sites investigated by the writer (Castlemagner —see above and Dromkeen East, Twohig 1974) to suggest that the original entrances to these souterrains was from within a house which had stood within a ring-fort enclosure. The documentary evidence, which has recently been admirably discussed by Dr. A. T. Lucas (1971-73), would tend to support the evidence which can be observed on the ground.

In England souterrains are found in Cornwall where they are known as *fogous*. In Scotland souterrains are known as *earth-houses*, *weems* or *wags* and they occur principally in Angus and Aberdeenshire with some examples occurring in Sutherland, Caithness, the Orkneys and Shetland (Clark 1961, Wainwright 1963, Thomas 1972). In France large concentrations of souterrains are found in Brittany. Although the souterrains in all these regions hold certain attributes in common, the degree of similarity in overall size, mode of construction and structural features varies considerably. Some of the souterrains in Cornwall and Scotland appear to have been semi-subterranean structures in that their roofs would have projected above the then ground level. Stenberger (1966) made a similar suggestion for a souterrain situated within a ringfort enclosure at Raheennamadra, Co. Limerick. Excavation of the Carn Euny souterrain (*Current Archaeology*, 44, May 1974) demonstrates that the 'bee-hive' chamber of that souterrain had been constructed as a free-standing structure within the large pit which had been excavated to accommodate it. A similar method of construction had been used, as was shown by excavation, in the building of a souterrain at Castlemagner, Co. Cork (see above).

Taken on the basis of morphology and mode of construction, the best parallels for the Irish type 2 souterrain (rock and clay cut type) are to be found in Brittany. The overall size of the Brittany examples compares well with the Irish type 2 souterrain. The large open pits through which the spoil excavated in the tunnelling of the chambers and creepways was brought to the surface are also to be found in the Brittany examples. For example at Rocher-Martin, part of the wall of one of the chambers was of dry-built stone work and comparable to the walls in such Irish souterrains as Ahakeera and Ballinacarriga (see above). At Rocher-Martin the wall

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was interpreted as closing off an entrance shaft or a creepway to another chamber; however it seems more probable, when one considers the location of the wall with respect to the other chambers, that this wall does in fact seal off the pit through which the spoil excavated in the tunnelling of the chambers was brought to the surface (for plan and discussion of the Rocher-Martin souterrain see Giot 1970).

The range of radiocarbon dates for the Brittany souterrains runs from about 500 B.C. to 120 A.D. (e.g. Freche 500 B.C., Kersulvez 260 B.C., Kermeno 80 B.C., Bel-Air 120 A.D.). It has however been suggested that the later dates for such sites as Bel-Air are due to contamination of the radiocarbon samples, and that dates such as the one from Freche are the more correct order of date for the Brittany souterrains (for full discussion of the Brittany radiocarbon dates see Giot 1971). The souterrains of Cornwall appear to date to the first and second centuries B.C., with some continuation perhaps into the late Roman period (Thomas 1972; *Current Archaeology*, 44, May 1974). Wainwright (1963) would suggest a date of between 50-250 A.D. for the souterrains of Angus. However the souterrains of Jarlshof (Shetland) can be dated to as early as about 500 B.C. (Hamilton 1953). The majority of the Irish souterrains can be considered as belonging to the period c. 500-1000 A.D.

Thomas (1972) suggested that the construction of souterrains began in Brittany and spread from there to Cornwall. They may have come to Ireland from Cornwall or perhaps direct from Brittany. The souterrain idea then spread to Scotland. On the basis of the available evidence this appears a reasonable working hypothesis. For example there is certainly a considerable body of evidence to suggest a relationship between the Brittany souterrains and the Irish rock-and-clay cut examples and it seems probable that the souterrain idea came direct from Brittany to the south of Ireland. However the range of dates for souterrains in Brittany, Cornwall, Scotland and Ireland do not, as yet, provide a sufficient overlap of dates to enable one to consider the souterrains in all of these regions in terms of one souterrain building tradition and it could well be that the possibility of independent invention may yet have to be considered for the souterrains of some of these regions.

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