

orthostats. Into the space between their outer edges and the orthostats were packed smaller stones, which also provided support for uprights. On the N., S. and E. sides the orthostats were backed by roughly built walling. That on the W. side had collapsed.

There were two structural details in the chamber which were difficult of interpretation. A little less than half-way along the northern orthostat from its W. edge a small, vertically set stone projected southwards into the chamber (Pl. II, 2). It was not set into the ground, but was balanced, partially on the northern 'buttress', and partially on a small stone resting in turn on a larger stone, which itself lay on the larger of the two paving stones. It is unlikely that this arrangement was due to collapse, but its purpose is unknown, unless it was to demarcate the NW. corner of the chamber where a human cranium had been deposited. The second anomalous feature, a thin rectangular slab, measuring 2 ft. 6 in. in height and a little over 1 ft. in breadth, was similarly supported by stones set on the paving. Its purpose is undefined as its length would have been insufficient to contribute to the support of the roof (Pl. II, 1). Fragments of human and animal bone were found at its base.

The chamber had been disturbed, particularly on the E. side where the orthostat had been broken. It is not known whether the roof collapsed as a result of this disturbance, or whether it had fallen previously. There was, therefore, little evidence of original roofing. It seems improbable that the chamber had been covered by a single capstone resting directly on the orthostats, as this would have allowed a head-room of less than 4 ft. In the uppermost levels of the chamber filling there were six flat slabs, stacked in a nearly vertical position, leaning slightly to the west (Pl. III, 1). It is probable that these originally formed part of a corbelled roof and that they fell into the chamber, perhaps when the E. orthostat was disturbed. Such corbeling would have provided additional head-room of at least 2 ft. above the orthostats in the centre of the chamber.

The collapsed corbeling lay on the filling of the chamber, in the disturbed upper levels of which were many very small fragments of unidentifiable, but probably unburnt animal, bone. In the southern part of the chamber, to the S. of the stones identified as collapsed corbeling, and in the adjacent northern part of the passage there were deposits of charcoal and mollusca. The latter mainly comprised the common land snail (*Cepaea hortensis*) and a common species of limpet (*Patella* (?) *mulgata*) and other marine mollusca.¹ These deposits had been tightly packed between small flat stones which formed the upper levels of the filling of the chamber and passage, immediately below collapsed roofing material. To the N. of the deposit of mollusca in the chamber and at the same level, there was a layer of intensely burnt, but unidentifiable, animal bone, charcoal and burnt earth. It is possible that this had been deposited while the burnt material was still hot, as the small stones on which the deposit rested were fire-red-dened. Alternatively, it is possible that these fire-red-dened stones had themselves also been brought from a hearth or fire.

The mollusca and animal bones may perhaps be interpreted as remains of food

¹ Mollusca were kindly examined and identified by Professor A. J. Cain of the Department of Zoology, in the University of Manchester.

deposits. It is not known whether the remains of a funerary feast or were intended as a form of *vitium* for the dead. The latter interpretation, however, may be preferred, as these deposits appear to have been carefully placed in position as part of the act which accompanied the final filling of the chamber and passage. Some limpet shells were found with the main human burial deposit in the lower part of the chamber and these, together with animal bones, may similarly be interpreted as food offerings. A scatter of animal bone, some of it burnt, and *Cepaea hortensis*, immediately to the E. of the northern part of the passage, probably represents part of the same or a similar deposit disturbed during the destruction of the eastern wall of the passage.

Beneath the level marked by the upper deposits of shell and animal bones the remainder of the chamber was filled with a deposit of bone, both human and animal, the limpet shells already mentioned, and layers of thin, flat stones. The deposit was approximately 1 ft. 6 in. thick and lay on the paving stones of the chamber. Although the E. side-wall of the chamber was disturbed, the actual contents of the chamber appear to have suffered a minimum of interference beyond that caused by structural collapse. The human remains were not articulated, but several long bones had been laid alongside the western orthostat of the chamber at floor level (Pl. III, 2), and part of a cranium was found in the NW. corner, also at ground level, and apparently protected by the curious stone arrangement referred to above. Part of a second cranium was found at a higher level in the chamber, mixed with other bone, both human and animal, and sandwiched between small, flat stones.

The bulk of the human remains may be attributed to two individuals, the one probably an adult male in his early thirties and the second possibly a female in her late teens. It is also certain that a fragment of mandible belonged to a third, relatively old individual. Some bones which cannot certainly be attributed to either of the first two individuals, may also belong either to this third, or even to a fourth individual, particularly as two small fragments of bone are possibly those of an infant.

It is apparent that the remains of the first two individuals referred to were the last to have been placed in the chamber. As there was no evidence of deliberate subsequent human interference, it is probable that these human remains were in an advanced state of disintegration, if not already in a skeletal state, when interred. The human remains may therefore have temporarily been stored elsewhere, perhaps in an ossuary, prior to interment in the chamber. The fragmentary remains of a third, and possibly a fourth, individual are more difficult of interpretation. They may represent fragments of previous interments, the bulk of which had previously been removed from the chamber. Alternatively, they may represent fragments of burials which had already reached an advanced state of disintegration in an ossuary, and which intentionally or unintentionally were deposited with the principal burials.

The human remains, as already noticed, were sandwiched between layers of small, flat stones and animal bones. Most of the latter may be interpreted as remains of food offerings. They included domesticated cattle and red deer, and possibly bird and fish. The mollusca referred to also appear to have been part of a food offering.

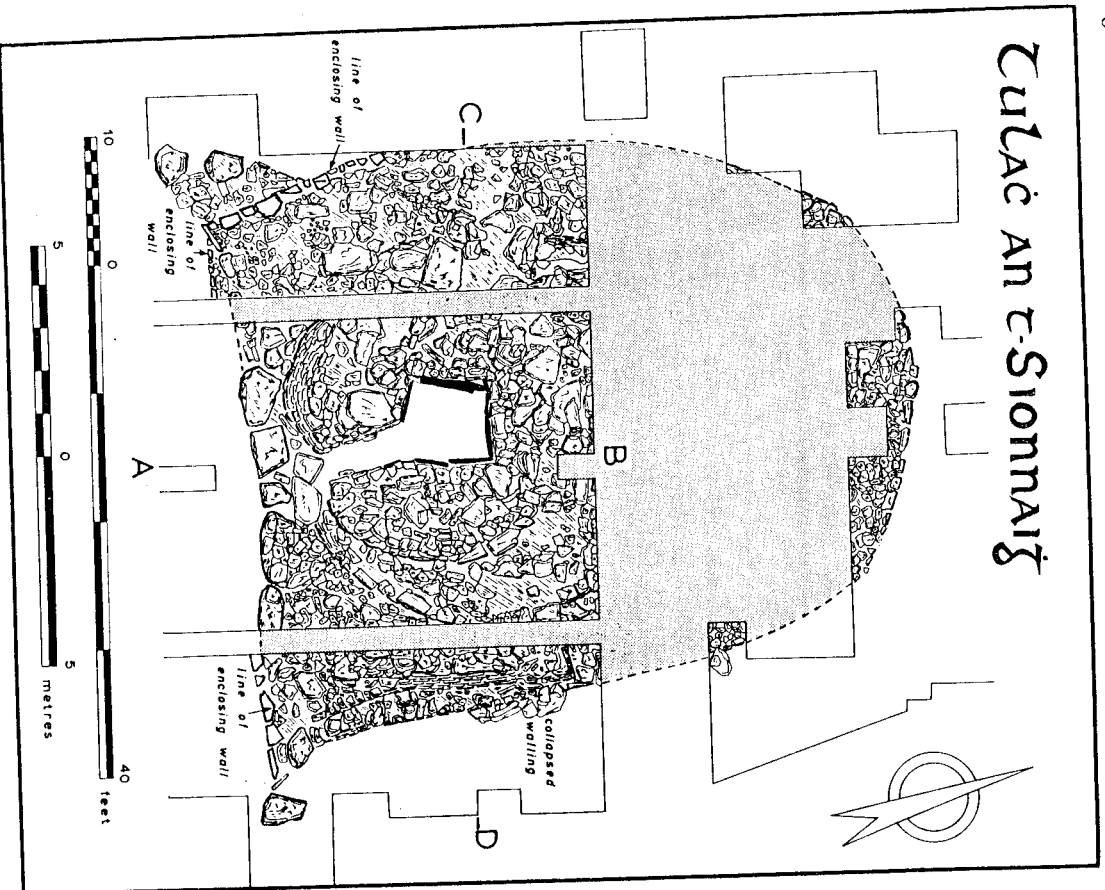


FIG. 4. *Tulach an t-Sionnaidh*: plan of heel-shaped cairn

Of greater significance, perhaps, are the remains of two dogs. The greater part of the skeleton of a mature animal was found in the middle of the main burial deposit in the chamber in a position which suggested that this animal, like the human remains, had been deposited in an ossuary and subsequently placed in the chamber. The skeleton was not articulated. There were also the remains of a young animal. These included an intact skull, found with a limpet shell and charcoal, and tightly packed into the gap between the eastern orthostat and the paving slab in the extreme SE. corner of the chamber. Unlike the remaining bones in the chamber, which were free of earth, the skull was tightly packed with earth and small stones. This may have been caused by flooding of the chamber; the skull lay at a lower level than most of the other bones in the chamber, and would therefore have been affected by flooding, which may not have risen sufficiently high to affect the rest of the deposit.

The whole deposit in the chamber was capped by a layer of mollusca, animal bone, some of it intensely burnt and unidentifiable, and charcoal. Details of animal bone are given in Appendices A and B.

The passage was 7 ft. long and was lined by dry-stone walling, built partially on the ground level and partially supported on upright stones (Pl. III, 3). The basal courses only of the E. wall survive, but the W. side of the passage adjacent to the chamber survived to a height of 3 ft. 6 in., and had been protected by a large slab which had probably been chosen as seating for roofing stones. It is probable that this was the original height of the passage, and its width of 2 ft. at the entrance, widening to 3 ft. at the inner end, could have been spanned by stone available locally. Roofing had not survived *in situ*, although two large slabs overlying the southern and more disturbed area towards the entrance of the passage may have formed part of the roof at that point. In addition to the heavy sill-stone at the entrance to the chamber, there was discontinuous paving in the passage and a second sill at its entrance. Across the entrance to the passage proper there was a carefully laid blocking of flat stones of varying size, surmounted by a large slab, chosen probably for the stability it would have offered.

On account of disturbance and robbing, precise details of the contents of the passage are unknown. A small part of the main burial deposit appears to have slipped from the chamber into the adjacent northern part of the passage. There was no evidence of a deliberate filling elsewhere in the passage, and the very few fragments of bone found probably represent pieces dropped during either the filling or the clearance of the chamber. The few finds from chamber and passage are discussed below (p. 14f.).

Cairn (figs. 4 and 5)

The outer ends of the walls of the passage were bonded into a revetment wall, which originally was probably circular in plan, and which enclosed the whole of the central area of this part of the cairn. This revetment was best preserved to the W. of the entrance, but it could also be traced on the E. side for a distance of 18 ft. Sufficient remained to suggest that its original diameter was approximately 35 ft.,

assuming that it was circular. Between the E. side of the chamber and passage and the revetment wall was an inner wall, rather roughly built, but quite stable. At its S. extremity this wall was bonded into the rear of the E. side of the passage. Thence its line could be traced for a distance of 18 ft. until it was lost in disturbed cairn material. It survived to within a few inches of the humus, and was curved in plan. On the W. side there was no trace of similar walling, but there had been considerable disturbance in that area of the cairn. This inner wall was probably oval in plan, and was intended both to bear some of the thrust from the chamber area, and to consolidate the walling built against the orthostats of the chamber. Between the outer revetment wall and the inner wall, to the E. of the chamber, two large flat slabs were set at an angle of 45° towards the chamber. They, too, were probably intended to support structural thrust from the chamber area. Elsewhere within the circular revetment the cairn was built of small, flat, horizontally set flagstones.

Immediately to the S. of the entrance there was a slightly curved setting of five large stones, considerably larger than the average stones of the body of the cairn, and forming part of the basal layer of a concave façade. The latter was built across the entrance to the passage, and almost touched the circular revetment wall at each side. The original height of the façade is unknown, due to disturbance, but it is unlikely to have exceeded three or four courses in thickness above the massive basal course. Between the façade and outer revetment wall cairn material was so built that it masked the lower courses of the revetment wall. This was best preserved in the area to the E. of the entrance (Pl. I).

Owing to disturbance, both prehistoric and recent, it was not possible to recover either the complete plan of the façade or the side walls of the heel-shaped cairn. On the E. side of the cairn two lines of well-built dry-stone walling converged and met at a large vertical buttress stone, set at right angles to the walls some 24 ft. from the S. end of the cairn (Pl. IV, 1). The two walls were approximately in alignment with the passage, splaying slightly outwards in plan towards the SE. limit of the cairn. The inner wall stood in places to a height of 2 ft. and the outer to a height of 1 ft. Both walls abutted on to a large flat slab, the shape and position of which continued the outward splay of the walls. The original junction of façade and side wall at the SE. corner was apparently disturbed in prehistoric times by the construction of the wall which incorporated the heel-shaped cairn into the long cairn. It is therefore unknown whether an upright stone had originally stood here and at the SW. corner, a common feature in heel-shaped cairns. Near both corners, however, large stones, which may once have stood upright, were lying on the former ground surface. Sockets for them could not be identified, but it would have been possible for them to have been set upright, as at least one of their sides would have provided a stable base. It is also possible that any such upright stones would have been deliberately thrown down when the later enclosing wall was built.

The W. side of the heel-shaped cairn was disturbed and robbed, so that very little survived and the exact position of the side wall could not be identified. Assuming that the heel-shaped cairn was symmetrically planned, comparison with the position of the E. wall in relation to the passage and diameter of the circular revetment wall,



FIG. 5. Tulach an I-Sionnach: plan of passage and chamber

suggests that the W. wall should in part have lain in approximately the position occupied by the later enclosing wall. Part of the original wall of the heel-shaped cairn may have been incorporated into the later revetment wall. A short stretch of the foundation course for the former was identified, protruding from under the later enclosing wall at the point where the former splayed in plan towards its SW. extremity (Pl. IV, 2). At this point, as on the E. side, the wall was aligned on a recumbent slab.

Although there had been considerable disturbance and robbing on the W. side of the heel-shaped cairn, it was possible to identify some internal structural details. Many stones of the basal layer of the cairn were of considerable size, some measuring more than 4 ft. in length. One of these stones appeared to have formed part of a roughly built internal wall, aligned on the S. wall of the chamber, and presumably intended to absorb some of the stress from the chamber.

The N. limits of the heel-shaped cairn were identified in the area of the so-called 'trench', where the disturbed remains of dry-stone walling, approximately 18 in. high, were identified. The walling was slightly curved in plan and was aligned approximately at right angles to the longitudinal axis of the composite long cairn. Although it was not possible to trace the outer wall of the heel-shaped cairn through-out its perimeter, sufficient was identified to allow a reconstruction of the original plan, and was supplemented by traces of the line of the wall visible on the ground surface.

The heel-shaped cairn measured approximately 51 ft. in width, along a line drawn from the SW. to the SE. corners, and 53 ft. in length, measured from the centre of the façade to the rear of the cairn.

Secondary Cremation Burial

A cremation deposit was inserted into slip from the heel-shaped cairn, approximately 10 ft. SSE. of the blocking of the entrance, and approximately 1 ft. 6 in. S. of the later enclosing wall built over slip from the heel-shaped cairn (cf. p. 18). The remains are apparently those of a single individual, possibly an adult female. A single animal bone, probably of pig, was identified among the human remains. Details of the cremation are given in Appendix C.

When first discovered it was believed that the cremation had been enclosed in a container of some perishable substance.¹ It was subsequently recognised that the container was a pot which had been so inadequately fired that, on discovery in the relatively moist conditions obtaining in the southern part of the cairn, it was quite plastic. As much of the deposit as possible was removed in a matrix from the fore-court area. When fully dried, the true nature of the container was recognised. The outer surface of the pot, however, was completely abraded and morphological details are unknown. It was probably an urn in the Bronze Age tradition, inserted upright into a small pit dug into cairn slip, carefully packed round with small flat stones and covered by similar stones. A thumb-nail scraper of flint and two unworked fragments of flint were found inside the deposit (cf. p. 15).

¹ Corcoran, *Arch. News Letter*, VII (1962), 156.

It is suggested below that the secondary cremation post-dates the building of the northern structure, and therefore the deposit was made in the SE. part of what, in effect, was a long cairn. In this it may be compared with a group of cremations in urns found in the SE. part of a long cairn in Wigtownshire.¹

¹ For a full and recent discussion see Henshall, A. S., *The Chambered Tombs of Scotland*, 1, Edinburgh (1969), 135-53 (hereinafter abbreviated to Henshall, C. T. S.). See also Calder, C. S. T., *P. S. A. S.*, xcvi (1962-3), 58-67.

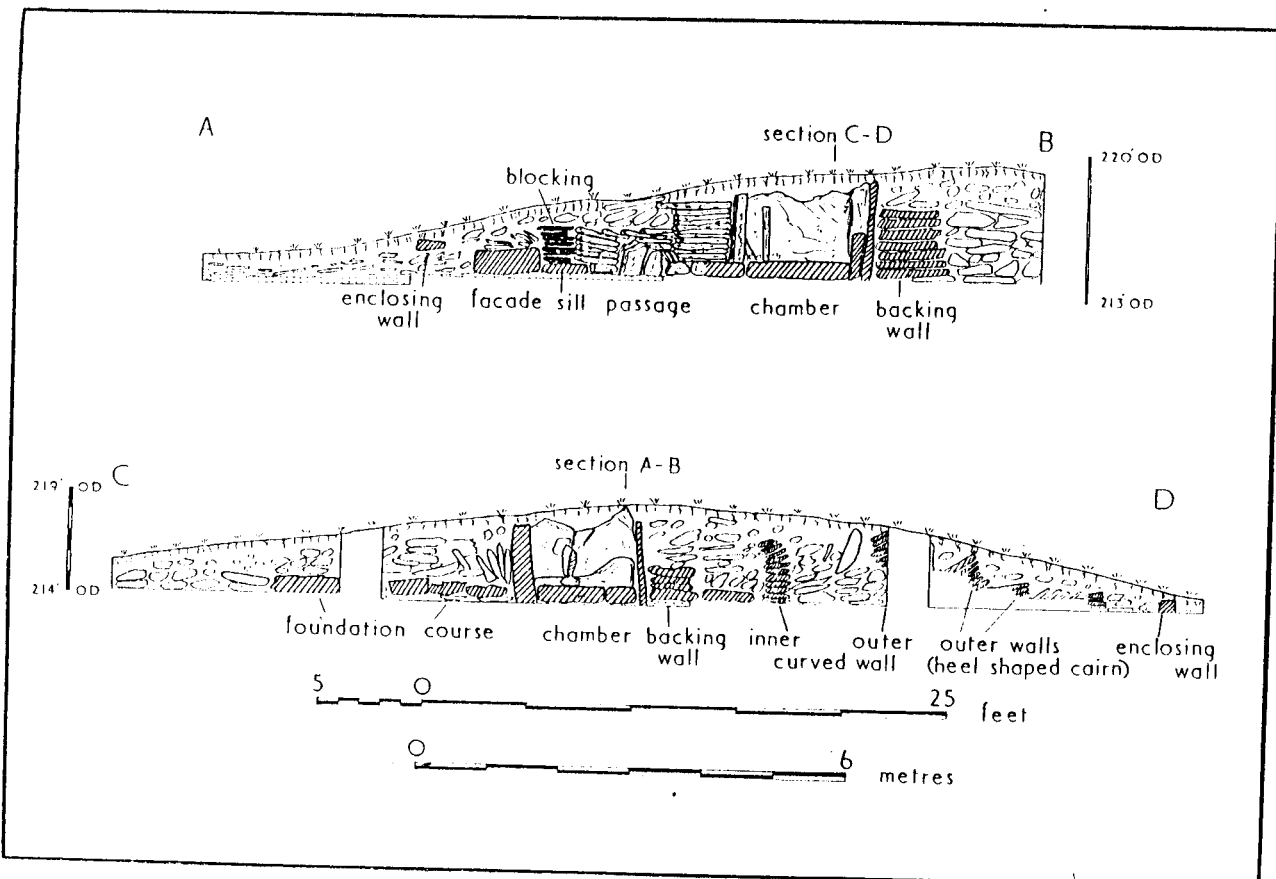


FIG. 6. Tulach an t-Sionnach: sections through heel-shaped cairn

Some of the structural features in the S. part of *Tulach an t-Sionnach* may be paralleled among the heel-shaped cairns of Shetland,¹ although there are variations, both in overall size and proportions and in the construction of the chamber. There are similarities, for example, in cairn construction between *Tulach an t-Sionnach* and Vementry (see 45),¹ despite differences in dimensions and in the plans of the respective chambers. At both sites a circular cairn surrounding the chamber was enclosed by a heel-shaped structure. At Vementry the circular cairn apparently rises from within a heel-shaped platform. Allowing for differences in building materials, *Tulach an t-Sionnach* may originally have presented a similar appearance, the base of a central, circular dome surrounded by a heel-shaped structure, defined by a revetment of dry-stone walling. It is probable that the maximum height of the latter was 3 ft.

In both cairns, and possibly in other cairns of similar type in Shetland, the façade was built across the entrance to the passage. Miss Henshall has suggested that access was by means of a 'drop-entry' behind the façade.² Had a heel-shaped cairn with an unbroken façade been built as a unit, this would have been the only possible means of access. There is nothing to suggest, however, that the heel-shaped structure at *Tulach an t-Sionnach* was not added to a circular cairn after the latter had already enjoyed an independent, although possibly short, existence. Without the heel-shaped structure the latter is a simple Passage Grave set in a circular cairn, the entrance of which was carefully blocked independently of the façade.

A typological sequence has been proposed for heel-shaped cairns in Shetland's and, according to this, *Tulach an t-Sionnach* should be early in the sequence. It is one of the 'narrow' group in which the overall length from the chord across the façade to the back of the cairn equals or exceeds the maximum width. In the present state of knowledge neither the origins of the heel-shaped cairn may be defined, nor may the relationship of *Tulach an t-Sionnach* to the Shetland group be established. It cannot be assumed, for example, that the Caithness cairn was ancestral to those of Shetland, although the rejection of such a hypothesis poses the problem as to the means by which a cairn of a type at present identified only in Shetland, came to be built in Caithness.

In the almost complete absence of datable finds from the heel-shaped cairns of Shetland, it is all the more unfortunate that *Tulach an t-Sionnach* yielded so little. The similarity of the small featureless sherd from the chamber to the undecorated Neolithic pottery from Tulloch of Assery B is insufficient of itself to allow the assumption that the final deposit in the chamber of *Tulach an t-Sionnach* dates from the *formid* of that type of pottery in Caithness. A single sherd might have easily survived from an earlier use of the chamber, or have accidentally been included in the burial deposit long after the remainder of the pot, from which the surviving sherd came, was destroyed.

¹ In this discussion each cairn of the Shetland group is followed by the abbreviation *shf* (for Shetland) and a number. The latter refers to the numbering in Miss Henshall's *Catalogue* (Henshall, C.T.S., 156-82), where full references may be found. A similar method is used elsewhere in this paper to refer to other cairns catalogued by Miss Henshall, abbreviations for counties being as follows:

CAE - Caithness
ORK - Orkney
SR - Sutherland.

² Henshall, C.T.S., 143-6.

³ *ibid.*, 145-7.

The sherds from immediately in front of the façade and apparently belonging to a single pot may also be compared with undecorated Neolithic pottery from Tulloch of Assery B. This suggests that the sherds were deposited in front of the façade of *Tulach an t-Sionnach* before slip had accumulated in that area, and some time before the later enclosing wall was built. If so, then it might be suggested that the pottery and the cairn were at least in part in contemporary use.

Two sherds of Beaker were found in a disturbed area immediately to the north of the chamber at the level of collapsed roofing material. As the bulk of the burial deposit in the chamber was undisturbed below the level of collapsed corbelling, it is possible that the Beaker sherds post-date the final use of the chamber. Taken together, these facts might suggest that the main use of the heel-shaped cairn of *Tulach an t-Sionnach* in fact took place during the *formid* of undecorated Neolithic pottery and prior to the local arrival of Beakers.

Northern Structure

Until the rear of the heel-shaped cairn had been identified, it had been assumed that the entire structure of *Tulach an t-Sionnach* had been built as a unit, although during the early stages of excavation the alignment of the passage and side walls in the S. part of the cairn appeared to be anomalous. Once the heel-shaped cairn had been recognised it was necessary to establish its relationship with the remainder of the cairn (fig. 3).

The S. limit of the northern structure appeared to be defined by a straight façade of low, upright stones set at right angles to its longitudinal axis, at a distance of approximately 13 ft. from the rear of the heel-shaped cairn (Pl. V, 1). As similar arrangements of low, upright stones, in a similar alignment, were identified in other cuttings elsewhere in the northern structure, it is doubtful whether this façade-like feature was visible after the building of the northern structure was completed. All the evidence from the other cuttings in this area suggests that the intention of the builders was to incorporate the heel-shaped cairn into a long, composite structure. This was most clearly demonstrated by the remains of a low wall, mostly surviving only in its foundation course, which joined the northern and southern structures, and which extended southwards to enclose the heel-shaped cairn.

It has been shown that this later enclosing wall probably overlies part of the W. wall of the heel-shaped cairn. The builders of the northern structure chose an orientation some 15° to the E. of that of the heel-shaped cairn, probably in order to take advantage of a low ridge which gave the illusion of greater height to the final appearance of the composite structure. The position of the heel-shaped cairn close to an inlet of the loch on its W. side would also have prevented the alignment of the northern with the earlier structure. On account of this change of alignment, the S. sector of the later enclosing wall on the W. side was obliged to depart from the smooth alignment which was possible on the E., and the final plan was therefore slightly asymmetrical. To reduce this asymmetry to a minimum, the later enclosing wall did not take in the SW. corner of the heel-shaped cairn. On the E. side the later enclosing wall was built at a distance of approximately 7 ft. from the E. edge

of the heel-shaped cairn. The intervening area was found to be filled with loose stone, possibly slip from the latter. There also appears to have been a low dry-stone wall, probably built to stabilise this loose material before the later enclosing wall was built. Immediately to the NE. of the heel-shaped cairn there was a short stretch of subsidiary dry-stone walling which extended westwards from a small vertical stone set in the line of the enclosing wall. This may similarly have been necessary to stabilise the rear of the heel-shaped cairn, which perhaps had become unstable by the time the northern structure was built (Pl. V, 4).

The suggestion that there had been slip from the heel-shaped cairn prior to the construction of the enclosing wall is reinforced by evidence from the area in front of the façade. Dry-stone walling extended in a straight line across the shallow forecourt and overlay cairn slip, which had accumulated at this point to a thickness of about 1 ft. The wall was built of no more than three courses, although one large slab used near the centre was more than 1 ft. thick. At each end this wall abutted on to a small, thin vertical slab which marked the junction of the former with the long sides of the enclosing wall.

Although several cuttings were made in the northern structure particularly in areas where surface indications had suggested the existence of a chamber, neither chambers nor cists were identified. In several of these cuttings various cist-like arrangements of stone, such as that at the N. end of the cairn, were shown to be part of the cairn's structure. The latter differed from that of the heel-shaped cairn in being less carefully constructed. Whereas the predominant arrangement of flagstone forming the body of the heel-shaped cairn was horizontal and with little earth, that of the northern structure was vertical with many earth-filled gaps. This vertical arrangement in several places suggested the appearance of disturbed chambers or cists, particularly where two or more stones were in alignment or at right angles to each other. In particular, there were a number of rough alignments, lying at right angles to the longitudinal axis, and they resembled the pseudo-façade which marked the S. limit of the northern structure (Pl. V, 2).

Roughly built dry-stone walling, rarely surviving to more than four courses in thickness, enclosed the northern structure (Pl. V, 3). The latter was straight-sided and tapered slightly from a width of 34 ft. at the pseudo-façade to 26 ft. at the slightly convex N. end. The distance between the two was 127 ft.; the average height of this structure was 2 ft., and did not exceed 3 ft. at any point. An illusion of greater height was given by building the cairn along the crest of a low ridge. Neither artefacts nor bone were found in this northern structure.

Discussion

Two important facts emerge from the excavation of *Tulach an t-Sionnach*. One is the identification of the first heel-shaped cairn to be recognised on the mainland of Scotland. The second is the recognition of a later structural addition to a chambered cairn, already complete in itself, which altered the external appearance of the original cairn.

Any interpretation of the northern structure at *Tulach an t-Sionnach* is inhibited

by lack of comparable data. It has been shown that in none of the cuttings made was there evidence of chamber or cist. Without complete excavation, which was impossible in the time available, it cannot be assumed that remains of some structures did not exist somewhere in the unexcavated part of the cairn. The low elevation of the structure, however, was unsuitable for the concealment of such structures, and cuttings were made wherever surface indications had suggested their existence.

This complex structure has posed a new problem in megalithic studies. The purpose of the northern structure, if indeed it lacked either burial or chamber, is elusive. Newcomers to Loch Calder perhaps wished to be associated with ritual centred on the heel-shaped cairn. Having deposited their dead in the chamber, they may have wished to add to the architectural complexity, and possible ritual efficacy, by adding the northern structure. In so doing, they produced a long cairn. Such a suggestion is inadequate, but so will be any alternative hypothesis until more detailed knowledge has been acquired of chambered cairns in the north of Scotland. *Tulach an t-Sionnach* is of particular interest, and perhaps of added complexity, as the heel-shaped cairn has not previously been recognised on the Scottish mainland.

The only excavated site in Britain which offers any basis for comparison with the structure as a whole is the chambered cairn of *Bryn yr Hen Boll* in Anglesey,¹ although, even here, the similarities are superficial. At *Bryn yr Hen Boll* there is a large circular cairn with an apparently rectangular chamber opening from a deep, funnel-shaped forecourt which faces east. Attached to the cairn is what the excavator termed a 'terrace', consisting of a long mound, approximately 325 ft. long, 40 ft. wide, but not more than 3 ft. high. It lies to the S. of the circular cairn and, in the excavator's opinion, its construction preceded that of the chambered cairn, perhaps only by days or even hours. Evidence for this is not clear, and the chambered cairn itself may be of rather more complicated construction, possibly of more than one period. This is suggested by a change in the method of construction in its upper levels. The core of the 'terrace' was built of a mass of stones pitched on end, compacted with smaller stones and earth and enclosed by walling which was poorly built in places. At the S. limit the wall was slightly convex in plan. In those parts of the 'terrace' excavated, neither chambers nor cists were found, but a cremation under a cinerary urn and other cremations were found immediately S. of the structure. Beneath the 'terrace' were Neolithic artefacts and traces of occupational debris. The excavator was unable to offer any suggestion as to the purpose of the 'terrace', and the theory that it might have been used as a bank for the transport of building material during the construction of the cairn is as inadequate as it is improbable.

There are certain similarities of construction between the long structures of both *Bryn yr Hen Boll* and *Tulach an t-Sionnach*, such as the enclosing walls attached to the chambered cairn, the make up of the long structures, and inferiority of their construction when compared with that of the cairns proper. There are also differences, particularly in length, but this may be a difference of degree rather than of kind, as the heights of both are comparable. Of greater importance, perhaps, is the apparent absence of a chamber or a cist. Even if these similarities are accepted to

¹ Hemp, W. J., *Archaeologia*, LXXXV (1935), 251-92.

the extent of regarding both structures as belonging to the same generic type, it removes none of the problems of interpretation and lack of comparable data. As the excavator of *Bryn yr Hen Bobl* remarked, features such as his 'terrace', if attached to chambered cairns, may well have disappeared in cultivated land. Piggott has commented on the possibility of some connection between the 'terrace' at *Bryn yr Hen Bobl* and the long, low ridge, apparently linking a circular cairn with a smaller cairn at Long Low, Werton, Derbyshire.¹ This 'ridge' was found to contain cremations, but without re-examination of the whole complex no valid conclusions may be drawn. It does not suggest a close parallel with the northern structure of *Tulach an t-Sionnach*, which differs both from the 'terrace' of *Bryn yr Hen Bobl* and the ridge of Long Low in that both the former's proportions and dimensions are closer to those of a more conventional long cairn.

Excavation of *Tulach an t-Sionnach* has revealed the existence of a chambered cairn of two structural periods, separated by some undefined period of time. It has been assumed that the enclosure of the heel-shaped cairn was contemporary with the construction of the northern structure. There is no conclusive evidence of this, apart from the alignment of the side-walls of the latter with the later walls enclosing the heel-shaped cairn, and the absence of any break in this alignment. The importance rests on the identification of two distinct periods of construction within a cairn which, prior to excavation, had appeared to have been of unitary construction.

Before excavation what may now be seen to have been a gap between the two main cairn masses had the appearance of 'a trench . . . excavated right across at about 50' from the ESE. end'.² There are similar surface indications in other long cairns in Caintness, such as the long cairn at Camster (CAR 12). Published plans of this cairn tend to obscure some possible structural features. In profile there are two depressions running across the width of the cairn. The N. end of the cairn is both considerably higher and broader and has the appearance of having been an independent cairn. The depressions have not been caused in recent years, as they may be identified in a woodcut accompanying Anderson's paper, published in 1870,³ on the horned cairns of Caintness. While not suggesting that the cairn had three periods of construction, although this is not improbable, it does seem possible that the N. chamber, a Passage Grave, was once enclosed in its own circular cairn. To this may have been added a chamber of Camster type, apparently within its own circular cairn, and the whole complex was ultimately enclosed in a long-horned cairn, either simultaneously with the construction of the Camster-type chamber or subsequently. In doing so, it compelled the builders to produce a laterally chambered cairn, having a forecourt from which there was no access to a chamber. The sequence of chamber construction might have been reversed, but this seems less likely. This must remain merely a hypothesis until the site is fully excavated.

Elsewhere in the country there are other long cairns which have similar surface features. The long-horned cairn on Onoc Freiceadain (CAR 18), a little over four

¹ Piggott, S., *Neolithic Cultures of the British Isles*, Cambridge (1954), 268-9. Bateman, T., *Ten Years' Digging*, . . ., London (1861), 144-7, 182-3.

² R.C.A.H.M. (Scotland), *Caintness*, No. 135 (p. 30).

³ Anderson, J., *P.S.A.S.*, vii (1867-8), 462. See also Henshall, C.T.S., plate 10.

miles to the NW. of *Tulach an t-Sionnach*, has a prominent southern end 'which rises almost like a separate cairn'. To the N. is 'a slight depression or trench across the body' which the Royal Commission's *Inventory* believed may have been secondary.¹ A second long-horned cairn, *Na Tri Shean* (CAR 41), situated a little over 100 yds. to the south of Onoc Freiceadain, has a similar 'trench' and the appearance of a large circular cairn incorporated into a long structure. Miss Henshall has grouped together long cairns of this type, some of which are horned, and refers to them as the *Na Tri Shean* type, drawing parallels between them and long mounds of her Balnagowan group.² Long cairns of the *Na Tri Shean* type have a large and distinct circular mound at the more easterly end. The body of the cairn is much lower, rarely more than a few feet high, compared with a height of 8 to 12 ft. for the mound at the E. end. The long-horned cairn at Head of Work (ORK 18) in Orkney is similar. Without excavation it is unknown whether or not these are cairns of more than one period of construction. Such a hypothesis would nevertheless account for the alignment of the E. chamber at *Tulach Buaille Assey* (CAR 59) which differs by about 45° from the longitudinal axis of the cairn as a whole. In several cairns of this type, such as *Brawlin Long* (CAR 6), *Onoc Freiceadain* (CAR 18) and *Tulach Buaille Assey* (CAR 59), the tops of thin upright slabs, set at right angles to the longitudinal axis, are visible and they resemble similar settings at *Tulach an t-Sionnach*.

Excavation has since revealed the existence elsewhere in Britain of multi-period cairns.³ At Wayland's Smithy in Berkshire a megalithic chamber was added to a long barrow and the composite structure enclosed in a long trapezoidal mound.⁴ Surface indications, in the form of so-called 'trenches', have been recognised in some long cairns in the Cotswolds, and may indicate the existence of multi-period cairns within the Cotswold-Severn group.⁵ The particular importance of *Tulach an t-Sionnach* and other known cairns of more than one period of construction is that the recognition that such cairns exist may contribute to a clearer understanding of the means by which some well-defined types of chambered long cairns may have evolved within Britain.

It is not possible to date the northern structure of *Tulach an t-Sionnach* by associated finds. It is obvious, however, that it post-dates the heel-shaped cairn which it has been suggested, may date from the use of undecorated Neolithic pottery in Caintness. The position of the secondary cremation outside the later enclosing wall suggests that the cremation was deposited after the enclosing wall was built. Had the cremation and the wall been contemporary, it might be supposed that the cremation would have been deposited within, and not outside, the area enclosed by the wall. These two factors suggest both a *terminus post quem* and a *terminus ante quem* for the building of the northern structure and the associated wall surrounding the heel-shaped cairn, a period between the *foynit* of undecorated Neolithic pottery and Bronze Age cinerary urns. A date at the beginning of the local Early Bronze Age might be appropriate, and it may tentatively be suggested that the presence of Beaker in the upper levels of the heel-shaped cairn is in some way associated with this event. Such a hypothesis would not contradict the generally accepted view that the use of chambered long cairns came to an end in Britain with the local arrival of Beakers.

¹ R.C.A.H.M. (Scotland), *Caintness*, No. 370 (p. 102).

² Cf. Duffin Ardubuy, *Merioneth* (Powell, T. G. E., *Antiquity*, xxxvii (1963), 19-24); Mid Gleniron (1964), 90-110 and forthcoming.

³ Atkinson, K. J. C., *Antiquity*, xxxix (1965), 126-33.

⁴ Corcoran, J. X. W. P., in Powell, T. G. E., et al., *Megalithic Enquiries in the West of Britain* (forthcoming).

⁵ Henshall, C.T.S., 75.