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THE EXCAVATION OF A COURT TOMB AT CREGGANDEVESKY, COUNTY TYRONE

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The court tomb at Creggandevesky, Co Tyrone, has a trapezoidal cairn with an open court at the south-east end giving access through a lintelled portal to a gallery of three chambers. Excavations between 1979 and 1982 disclosed Early and Middle Neolithic pottery, a range of flint objects and a collection of stone beads at a primary level, implying inhumations which have not survived. Cremated bone was principally at a secondary level within the chambers and cremated bone accompanying beaker pottery was found in collapsed cairn material. Radiocarbon dates for construction and primary use of the tomb based on charcoal samples are in the range 3850 to 3000 cal BC. Evidence for peripheral activities ranging in date from the Early Neolithic to the Late Bronze Age was also disclosed.

INTRODUCTION

This court tomb (SMR Tyr 37:14) is located in central Co Tyrone 4km north-east of Carrickmore (IGR H6459 7503) at an altitude of 234m (767 feet) OD (Fig 1). It was built on a glacial esker overlooking Lough Mallon immediately to the south. The wider landscape has a number of smaller lakes to the north and north-east. The esker extends away to the south-west, forming a natural dam at the head of a peat-bound valley. A small, round cairn of indeterminate date at the south-west end of the esker was removed in land reclamation without investigation during the 1970s along with a nearby small circular lake.

Cregganconroe hill closes the near vista to the east while a local hill, Scalp, is prominent to the west before the ground falls away towards the valley of the Camowen river. This is one of the most prominent tombs in the region (others detailed below in the Discussion), visible at a distance from the east, south and west. The presence of Lough Mallon immediately to the south and of Black Lough, to the east, source of the Owenkillew River, 500m to the east, may have influenced its siting.

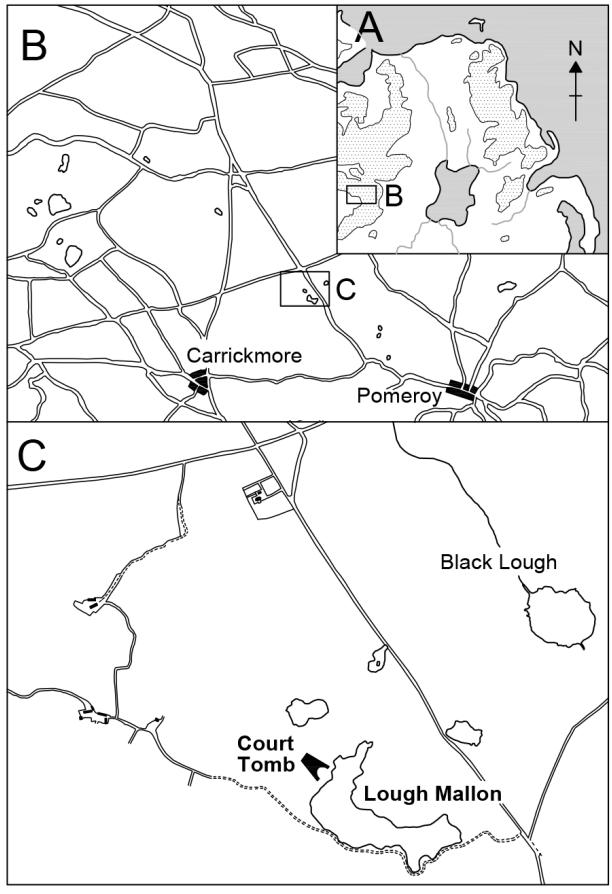


Fig 1 Site location.

D A Chart, Deputy Keeper of Records, visited the site in August 1933 with Rev Meissner and T F O Rippingham, Ministry of Finance Works Division. He recorded that it

> appears to consist of two or three chambered cairns, much rifled and confused. Mr Rippingham and I agreed that this was probably an authentic antiquity, but so confused that its protection would not be worthwhile (note on historic administrative file B2961/35).

The site was again recorded by T G F Paterson in *The Preliminary Survey of the Ancient Monuments of Northern Ireland* as 'a long cairn about 55 ft. by 40 ft'. He stated that there was

> a standing stone in the front part and perhaps a chamber in the centre but there are too many stones for the chamber to be distinct. It stands about 7ft. high (Chart 1940, 238).

The site was also visited by Ruaidhrí de Valera and Seán Ó Nualláin in 1964 (ms field notebook in the Northern Ireland Monuments and Buildings Record), who recorded it as a 'definite long cairn 19m long and between 12 and 13m wide'. They concluded that it was either a 'court cairn or a portal dolmen'. The site was not recorded in the OS memoirs and was not indicated on any OS six-inch map until 1945, when it was labelled 'Carn (reported)'. Since excavation it has been included in many guides and popular texts (Hamlin 1983, 137; Hamlin & Lynn 1988, 3–5; Killanin & Duignan 1989, 94; Harbison 1992, 318; Donnelly 1997, 15–16; Halpin & Newman 2006, 126–27; Maxwell 2009, 296–98).

The excavation was occasioned by a farm reclamation scheme intended to re-model the hill on which the site stands to fill a nearby sand quarry and therefore a total excavation to remove the cairn was planned at the outset. The work was conducted over eleven months between 1979 and 1982. With the eventual revelation of the well-preserved court tomb the owners, the McCartan family, readily agreed to spare it and it came into state care in 1984.

Before excavation the site was observed standing to a maximum of 2m above the adjacent land and was much encroached on by heather and shallow peat, with only the tops of three large stones visible at the south-east end. It was prominently sited on the top of the esker with the long axis orientated north-west/south-east.

Along the west side the collapsed cairn material extended outwards for up to 6m at an angle of about 45 degrees from the highest point of the cairn. Cairn material along the east side was of similar profile, extending 2 to 3m out from the monument (Fig 2).

The court was also filled with cairn material, sloping down from the entrance lintel to the mouth of the court at the south. Later-recognised corbels and the line of the revetment, once found, were retrospectively indicated on the overall cairn plan (Fig 3). The court tomb which emerged after careful clearing of collapse is of classic trapezoidal shape, 13.2m wide at the south-east court end and well defined by the remains of a drystone revetment along both sides and along the back by a single course of stone. It measures 20m long on the west side, 21m long on the east side and 6.80m along the back. The court after stone clearance measures 6m across the mouth and is 5m deep. The burial gallery of three chambers is 9.5m in length.

While true north is indicated on all figures within the text, the orientation of the descriptions is simplified to north, south, east and west. Layer, feature and find numbers are reported as recorded to maintain conformity with the archive. Ploughing in antiquity and in the 20th century in the area north of the tomb has confused layers here, truncating

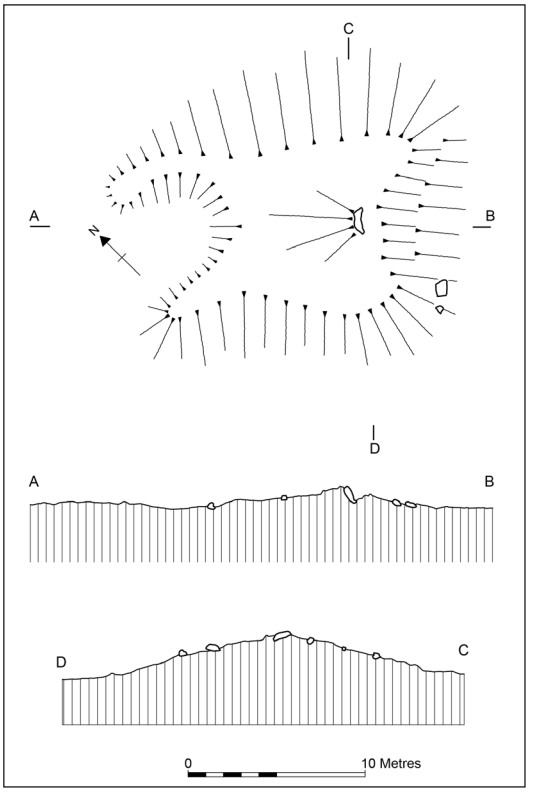


Fig 2 Survey record before excavation showing the lintel at the south-east and a peat-filled hollow at the north-west.

some features and redistributing some small finds. The excavation archive is curated by the Historic Environment Division of the Department for Communities Northern Ireland.

THE EXCAVATION

Methodology

A rectangular area 26m by 19m was laid out to enclose all of the perceptible cairn material along the long axis of the cairn. This was divided into quadrants, 1 and 3 to the north and 2 and 4 to the south with intervening baulks 0.75m wide.

The topsoil, heather and peat were removed from the entire site to examine the cairn and establish what structural elements could be observed at the outset (Fig 3). Collapsed cairn material consisting for the most part of blocks of granite, gabbro and dolerite was exposed over most of the excavation area, tailing off towards the north-west and south-east. After detailed planning of the cairn two

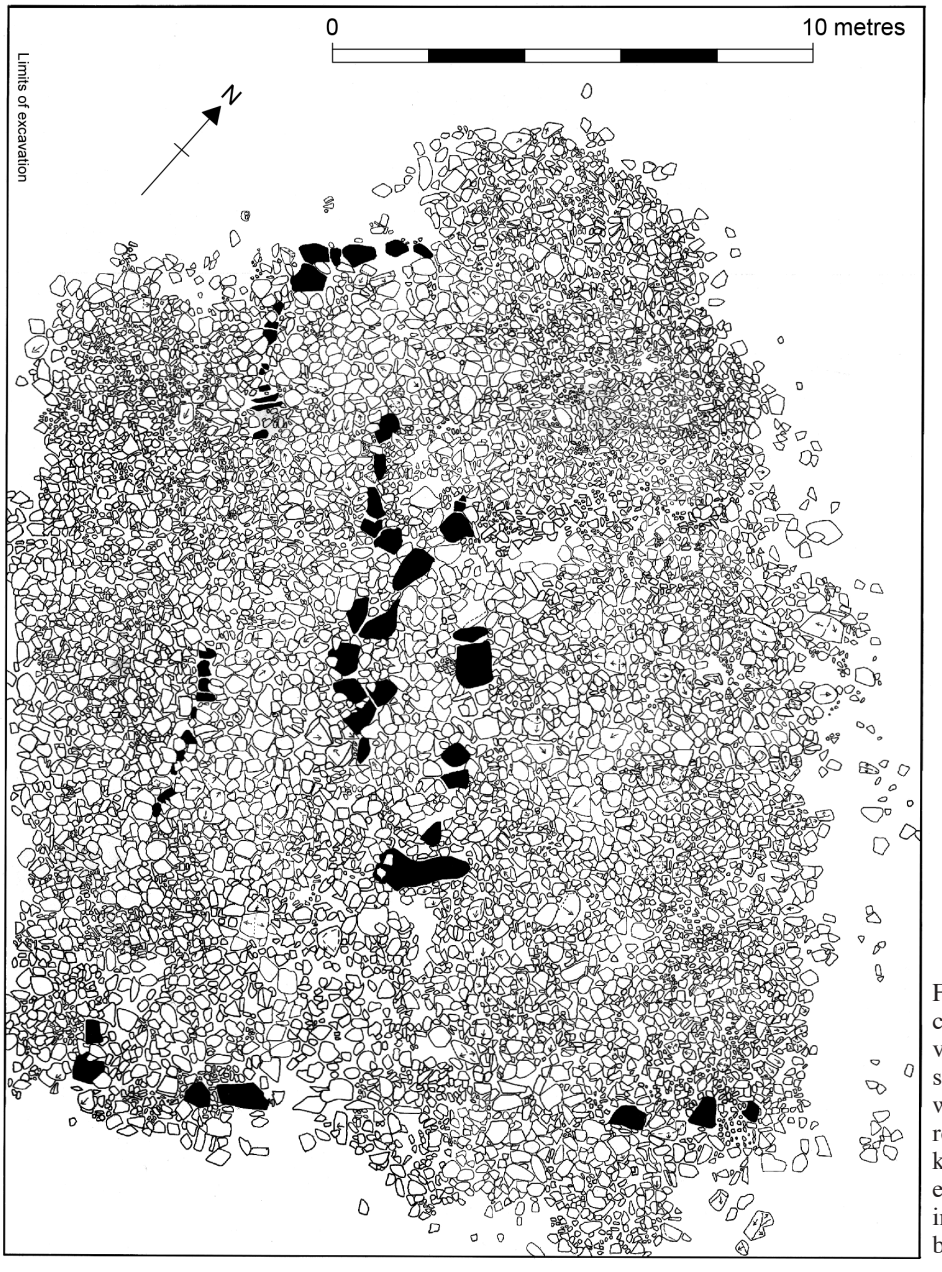


Fig 3 The cairn after vegetation stripping with later recognised key structural elements indicated in black.

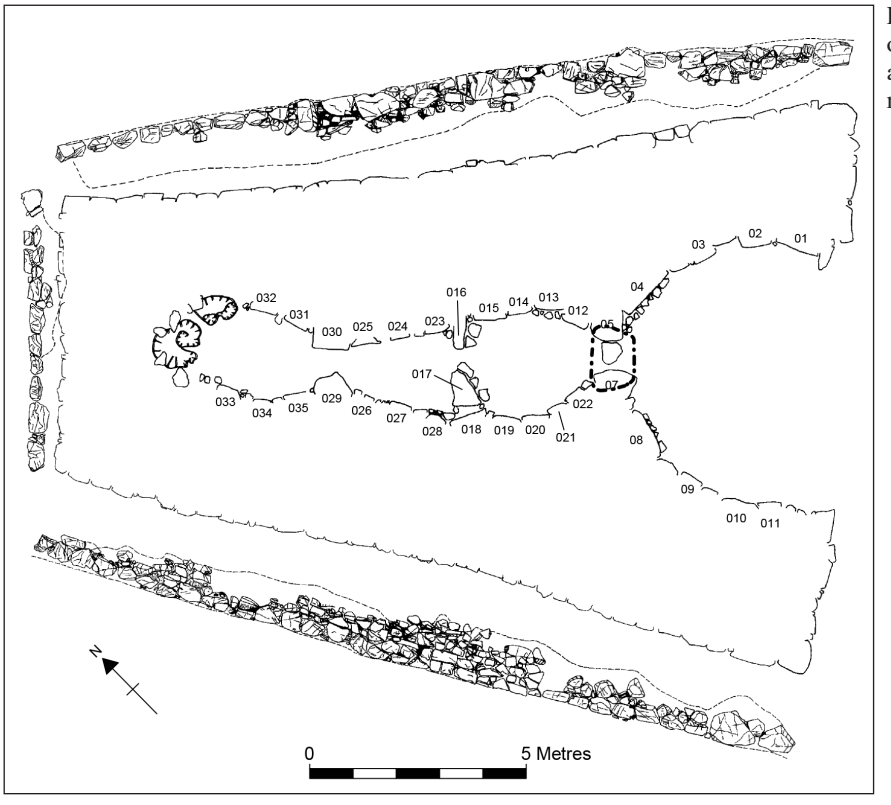


Fig 4 Plan with orthstats numbered and elevations of revetment.

strategies were devised: (i) to remove loose cairn stones from the presumed court and burial gallery and (ii) to remove cairn material from the sides of the cairn in expectation of defining the line of the possible lateral revetments.

Pre-tomb activity

As the site was built on a glacial esker, the natural subsoil consisted of a mixture of sand and gravel, varying in coarseness from fine to medium. Certain hollows in the esker material which had silted up with finer charcoal-flecked silt were thought to be caused when ice-borne boulders were removed in preparation for, or use in, building the tomb. The presence of the tomb structure made it impossible to stratigraphically relate features in the subsoil within the chambers with those in the court and around the exterior of the tomb, but there was some certain pre-

Pl 1 View of revetment along west side of cairn.

Pl 2 The court and west façade before clearance of collapsed cairn.

cairn activity in minor features (F84 and F68, Fig 6 which were superimposed by the cairn in the court area and by the south-west façade.

The revetment (Fig 4)
Removal of collapse along the west side of the cairn was conducted by trial trenching at right angles to the long axis. The lowest layer of collapse was embedded into Layer (hereafter L) 4 (Fig 9b).

The cairn was found to be revetted for its full extent by drystone walling which varies in style from section to section, using similar-sized stone to that used for the cairn with occasional larger boulders, and is often firmly embedded at a downward angle into the cairn behind to increase its stability. The surviving revetment on the west side ranges from 0.05m to 1.25m high (Pl 1). The eastern revetment survives to 1m at its highest point. Large boulders were used more frequently in its construction than in the west. Smaller stones were packed around the boulders, probably a reflection of the variety of available stone but also perhaps reflecting different skills, with several teams possibly involved in the construction.

The façades
The straight façades, the terminals of the cairn on either side of the court at the south end, are also strongly revetted. The western façade is 4m long and survives to a maximum height of 0.75m. Its

Pl 3 The court after clearance of collapse, showing 'post and panel' construction and entrance portal with the *in situ* lintel temporarily supported.

Pl 4 The entrance to the burial gallery with the *in situ* lintel over the makeshift portal jambs. Two stones under lintel at left are conservation additions to provide support.

junction with the court is marked by a block of stone 1m high. A boulder 0.50m high marks the south-west corner where it meets the west lateral revetment. Between these two larger stones the façade was built of rubble walling. The eastern façade survives for 3m in length and is a maximum of 0.60m high with a gap at the junction with the court which may originally have had an orthostat. The junction with the east lateral revetment is marked by a boulder 0.60m high. There were few smaller stones remaining *in situ* from this part of the façade. A slight spread of collapsed cairn material in front of both façades, more on the east than the west, suggested that the original façades would have been a little higher than at present.

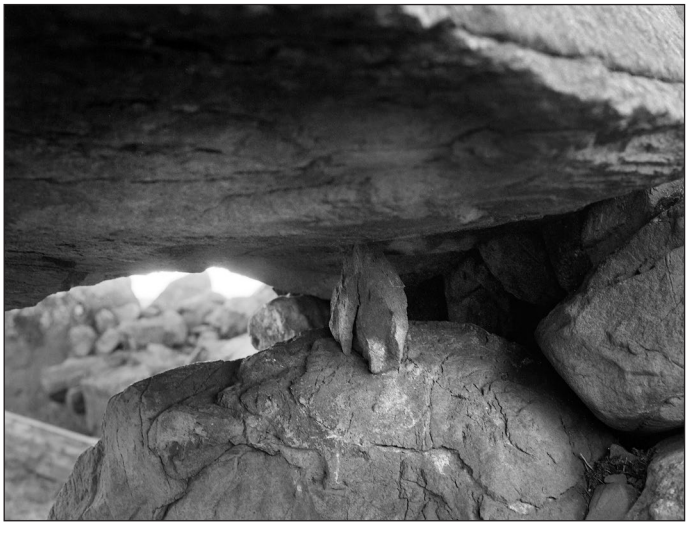
The court

The semicircular court is at the widest, south end of the cairn and it was entirely filled with collapse (Pl 2). After clearance of fallen cairn material it measures 6m across the front between the two façades, and is 5m deep. The flat-topped boulder observed at the highest part of the cairn at the outset was established as the *in situ* lintel over the gallery entrance portal. The cairn material in the court was highest near the lower edge of this lintel and sloped gradually down towards the mouth of the court.

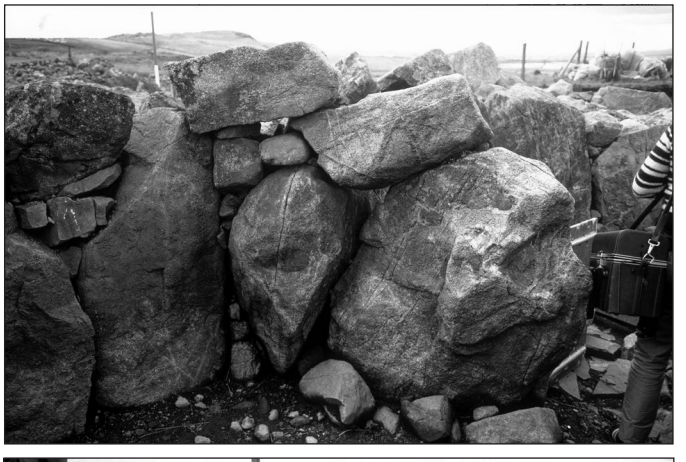
Removal of cairn material gradually revealed the 'post and panel' structure of the curved sides of the court (Pl 3). They decrease in height from the portal area to the outer ends of the court and the floor of the court slopes slightly downwards from the exterior towards the entrance to the burial gallery. During the removal of cairn material deposits of cremated bone representing a minimum of 11 individuals with scattered beaker pottery sherds were found high up among the cairn stones in front of the entrance lintel.

The portal

The portal is still extant as built but was a somewhat makeshift construction — all the more interesting that it has survived with its lintel, broadly trapezoidal in shape, 0.92m high, 1.85m wide and 1m thick, still *in situ (*Pl 4*)*. The western entrance jamb is 1.10m high, 0.56m wide and 1m thick and was placed in a socket. It is not aligned carefully with the eastern jamb but stands further into the court. A small triangular chocking stone 0.10m high is wedged between the top of the western jamb and the inside edge of the lintel (Pl 5), illustrating the difficulty of levelling the lintel and the expedient solution at the time of construction.



Pl 5 The chocking stone as found under the internal west side of the entrance lintel.



Pl 6 (top) The top of the gallery looking south-east, before clearance of collapse, showing some *in situ* corbels and the back of the lintel.

Pl 7 (middle) The north-west corner of chamber 1 showing the corbels layered over the western jamb leading to chamber 2.

Pl 8 (bottom) The north-east corner of chamber 1 with corbels rising over the eastern jamb leading to chamber 2.

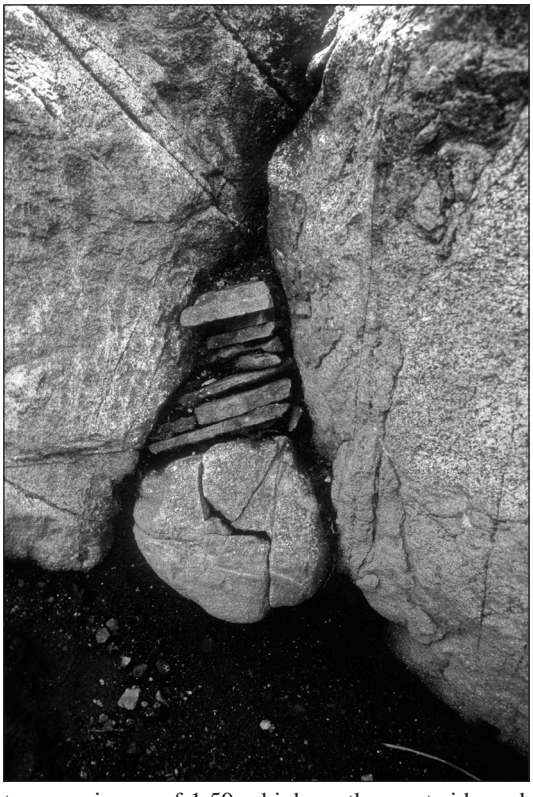
The eastern entrance jamb is 1.55m high, 0.60m wide and 0.80m thick and is composed of two superimposed boulders, the lower of which is in a socket. The entrance to the gallery through the portal is 1.20m high and 0.50m wide. It is marked at ground level by a low sill-stone 0.45m high, 0.44m wide and 0.20m deep, placed off-centre to the east.

The burial gallery

After clearance of heather and peat from the surface of the cairn a number of large granite blocks were observed along the highest part of the cairn (Pl 6). These were assumed to be *in situ* or disturbed corbels and were left in place, while the burial gallery was cleared of slipped cairn material, revealing the three chambers. Chambers 1 and 2 were filled with collapsed cairn material but chamber 3 was a peat-filled hollow following the robbing out of the backstone and of an adjacent orthostat to the east as well as much cairn material at some unknown time in the past.

The burial gallery is 9.50m in length and is divided into the three chambers by two pairs of jambs. The first two chambers are aligned along a true north-west to south-east axis which continues through the centre of the court, while the third chamber is aligned on an axis a few degrees further to the north (Fig 4).

Chamber 1 is the widest and highest of the three at 3.25m long and 2.25m wide with three orthostats forming each concave side. Including some *in situ* surviving cairn material and some corbels tilted at c 45 degrees it remains



Pl 9 Drystone infill including sandstone slivers used to fill a gap at the base of two orthostats in chamber 3.

to a maximum of 1.50m high on the west side and 1.60m along the east. Corbels remaining on the upper north-west corner of the chamber (Pl 7) and along the east side (Pl 8) illustrate the method of increasing the span of the corbels by degrees while weighing them down with cairn material to gain the desired closing height of the chamber roof which is estimated to have been about 2m. The pair of jambs between chambers 1 and 2 are separated by a gap of 0.50m, the same as the entrance portal. The western jamb is in a socket with packing stones and is, unusually, free-standing, straddling chambers 1 and 2. The eastern jamb between chambers 1 and 2 is also socketed and is well set into the cairn. Both jambs support surviving corbels.

Chamber 2 is 2.60m long and 2m wide at the south, narrowing sharply at the north towards the final set of jambs between it and chamber 3. It survives to 1.50m in height and is markedly symmetrical with three orthostats on each side, none of which is placed in a socket. Orthostat 023 is surmounted by a large stone to increase its height and is supported by two packing stones at the base. Orthostat 025 is flat bottomed, standing directly on the surface. This was observed when it fell into the chamber during the excavation and an opportunity was afforded to examine it in all dimensions. A pollen core (Appendix 5) was recorded from under it. This and orthostat 024 both have raked-back upper rear surfaces, indicating working or deliberate selection to receive corbels at c 45 degrees. On the west side of the chamber orthostat 028 supports a section of corbelling springing from a lower point than in chamber 1, illustrating the decrease in roofing height along the gallery from front to back. Slivers of sandstone packing in horizontal layers and small stones were used to fill the minor voids between neighbouring orthostats (Pl 9) illustrating an effort to create a relatively smooth surface for the chamber sides. The pair of jambs between chambers 2 and 3 are well set into the body of the cairn and are separated by a gap of 0.54m.

Chamber 3 is 2.80m long and 2m wide with three orthostats along the west side and a remaining two along the east, and it survives to 1.20m high on both east and west sides. The angle of the remaining corbels at c 45 degrees is similar to those surviving in chambers 1 and 2, continuing the downward slope of the roof along the length of the gallery, and they are well bedded into the cairn and chocked by smaller stones. The back stone and an adjacent orthostat to its east as well as a quantity of cairn material had been removed at some time in the past leaving two shallow sockets F21 and F22. F21, the socket for the missing backstone, was an irregular pit (1.04m north/south and 1.27m east/west) with an undulating base. It was 0.30m in maximum depth and filled with stony brown soil. It had been partially covered with slipped cairn material and the natural level beneath it had a layer of hard iron pan. F22, for the missing east side orthostat, was a similar irregular pit (0.94m by 0.60m) with an uneven base and the eastern edge was covered in cairn slippage. It had a similar fill to F21 and was also 0.30m in maximum depth with a layer of iron pan at the base. A post-hole, P40, was dug into redeposited material, L17, from the primary digging of this socket. At subsoil level — the interface between the natural and the accumulation of cultural layers — it was clear that only some of the orthostats were placed in sockets and those that were explored were not fully emptied to avoid destabilising them. The rectangular socket (F74, 0.45m wide) for the western portal jamb (07), was cut by F72 (0.62m by 0.75m) the socket for the eastern portal jamb (05), which was filled with sticky dark brown soil and large pieces of sandstone slabs and smaller stones. Fragments of an Early Neolithic carinated bowl (vessel 6) were found in F74 and two body sherds from the same pot were found in L25 in chamber 1.

No	Feature	Diameter	Depth	Fill
P96	Post-hole	0.15m x 0.15m	0.03	dark brown soil/charcoal inclusions
P100	Post-hole	0.12m x 0.12m	0.10	dark brown soil; much charcoal
F73	Pit	0.32m x 0.32m	0.05	sandy, fine, light brown soil, charcoal flecks
P101	Post-hole	0.08m x 0.08m	0.07	stones/sticky charcoal-flecked soil
P94	Post-hole	0.08m x 0.06m	0.08	dark brown soil/charcoal flecks
P95	Post-hole	0.07m x 0.07m	0.06	dark brown stony soil/charcoal inclusions
P99	Post-hole	0.11m x 0.11m	0.03	beige-brown stony soil/charcoal inclusions
P98	Post-hole	0.07m x 0.07m	0.05m	dark brown soil/charcoal flecks

Table 1 Dimensions (Dim) of post-holes and F73 in chamber 1.

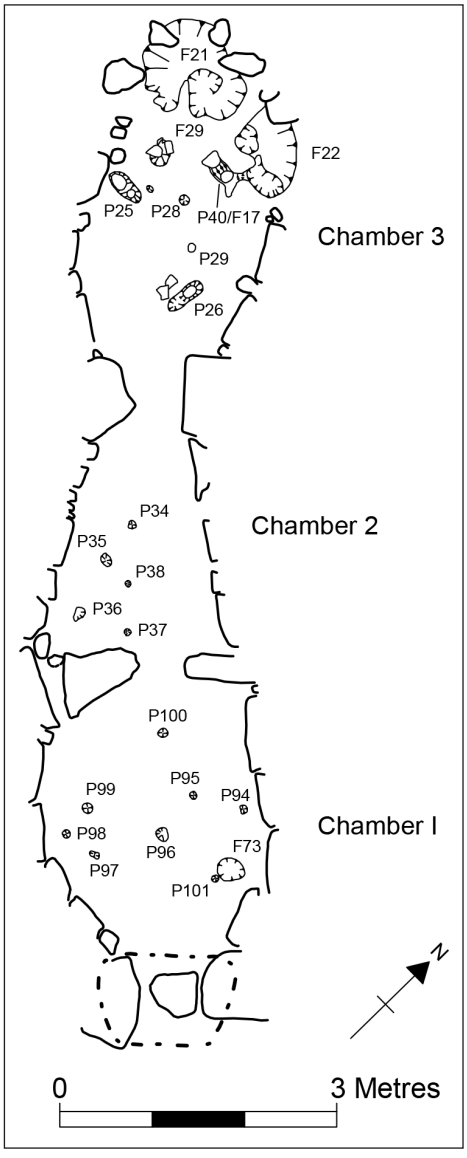


Fig 5 The possible structural support post-holes within the burial chambers.

Cremated bone fragments (1203) were found in the fill of the socket for the eastern portal jamb, F72; interestingly the accompanying soil was considered to be alien to the site (Appendix 2), implying that it was brought with the bone from elsewhere. Set on top of this combined fill is the sill-stone, which does not fully span the gap between the portal jambs, being only 0.45m long.

The socket for orthostat 013 (F71) within chamber 1 was excavated of upper fill, a dark brown soil with four packing stones wedged tightly against it. Orthostat 015 and jamb 016 (between chambers 1 and 2) shared an L-shaped socket, F69, which had a rounded top edge; this was cleared of a top fill of dark brown, sandy earth with small stones before reaching two large packing stones wedged with several smaller ones. Jammed in between these two orthostats were three sherds of vessel 1, a neck sherd of vessel 2 and a flint flake (1200). The socket for orthostat 017, F70, the western jamb between chambers 1 and 2, also had a rounded top edge and was emptied of dark brown sandy soil with many angular stones exposing three large packing stones and several smaller ones.

Possible structural supports

The sand and gravel subsoil in the burial gallery was overlain by a yellow, stony, charcoal-flecked deposit (L21) in chambers 1 and 2. In chamber 1, about 1m in from the portal jambs the floor of the chamber sloped slightly downwards to the north. There were eight post-holes (P96, P101, P94, P95, P100, P98 and P97) and a circular pit (F73) cut into the surface of L21 (Fig 5; Table 1). Two post-holes, P100 and the widest example, P96, which may have been truncated, were centrally placed in the chamber along the main north/south axis of the gallery. A sample of charcoal from P100 was processed for radiocarbon dating

No	Feature	Diameter	Depth	Fill
P37	Post-hole	0.45m	0.12m	grey/yellow silt
P38	Post-hole	0.06m	0.06m	grey silt/charcoal flecks
P34	Post-hole	0.10m	0.17m	grey silt/charcoal flecks
P35	Post-hole	0.14m	0.10m	grey/yellow silt
P36	Post-hole	0.10m	0.13m	brown silt

Table 2 Dimensions of post-holes in chamber 2.

No	Feature	Diameter	Depth	Fill
P40/F17	Post-hole	0.23 x 0.18	0.10	pink, grey, sandy with small stones
P25	Post-hole	0.41 x 0.15	0.15	orange, grey, stony silt
P26	Post-hole	0.46 x 0.22	0.19	grey, stony silt with charcoal
P28	Post-hole	0.12 x 0.14	0.14	grey silt with charcoal
P29	Post-hole	0.10 x 0.10	0.14	grey silt with charcoal

Table 3 Dimensions of post-holes in chamber 3.

No	Diameter	Depth	Fill
F84	0.60m x 0.40m	0.10m	grey, brown, silty soil
F68	0.10m x 0.15m	0.10m	sandy grey soil
F63	1.80m x 0.44m	0.10m	soft, sandy soil
P90	0.30m x 0.23m	0.30m	yellow, sandy soil
F62	0.62m x 0.45m	0.21m	grey sand with charcoal
F83	0.30m x 0.38m	0.10m	soft brown clay
F60	1.50m x 0.30m	0.10m	sandy, grey soil

Table 4 Features cut into layer 28.

and is in the range 3690–3380 cal BC (UB-7300). A circular, wedge-sectioned, pit (F73) and a small post-hole (P101) occurred on the south-eastern side of the chamber. Three other post-holes may form a coherent arc across the centre of the chamber, P94, P95 and P99. Two further post-holes, P98 and P97, were close to the west side of the gallery.

In chamber 2 the yellow, stony, sand and gravel subsoil (L21) had five post-holes (details in Table 2) cut into it similar in character to those in chamber 1 but confined to the south and west sides. Three of these, P37, P38 and P34, formed a roughly equally spaced line on the north/south axis of the gallery; P34 was placed in the centre of the chamber and was the deepest of these posts. Two slightly larger examples, P35, with its base inclined towards the west and P36, with a pointed base, occurred on the west side.

In chamber 3 there were five post-holes as well as two shallow features dug into the subsoil (Table 3). F17 and P40 form a complex post-hole with two hollows and a bridge between them dug into the upcast for socket F22. There were two other complex post-holes in this chamber; P25 in the western and P26, the deepest post-hole in the gallery, in the south-eastern area. A sample of charcoal from P26 was processed for radiocarbon dating and returned a date in the range 3740–3430 cal BC (UB-7301). Post-hole P28 was centrally placed and similar to P29.

Limited stratigraphic evidence — the cutting of post-hole F17/P40 into the upcast for socket F22 — suggests that the features in the gallery floor post-dated the erection of the orthostats. The two radiocarbon dates for post-holes 100 and 26 (see above), if these are indeed construction features, suggest that this activity was carried out between 3740 and 3380 BC. The location of these features, principally post-holes and post-pits, within the central part of the chambers may indicate the use

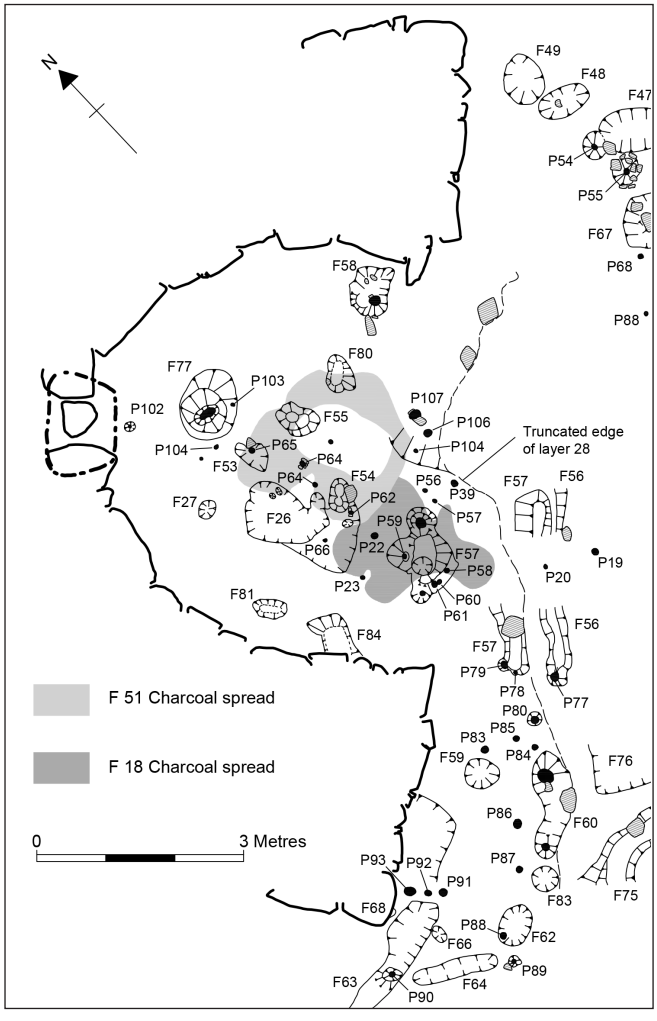


Fig 6 Features found in court area and beyond.

of a temporary framework to support the erection of the corbelled roof. These may have been braced using cross-ties, possibly also wedged against the orthostats, and two angled postholes, P35 and P29, may have served to further buttress the framework.

The court area (Fig 6)

The layer above the natural esker surface in the court, L28, was recorded to the mouth of the court and westwards in front of the south-west façade. It was a fine, silty material varying in colour from grey to pale yellow, relatively stone free and with flecks of charcoal. It was sharply truncated in an irregular line across the mouth of the court. Several features (details in Table 4 below) were cut into L28 with two of them underlying the tomb — F84, a shallow scoop ran underneath the western arm of the court, while F68 was a small pit overlain by the south-west façade. Also in L28, F63 was a linear gully with a post-hole, P90, cut into the fill from L13 above.

To the south of the west façade a number of features are difficult to interpret. F64 (in L13) may be an animal burrow. F62 was an oval hollow with a stake-hole, P88, along its northern edge. F83, between F62 and F60, is a shallow depression. This group of features is punctuated by stake-holes dug from L13 above. F60, positioned along the edge of the truncated layer, appears to have more structural potential. A post-hole (not numbered) at its east end was 0.22m deep, while one at the west end (not numbered) was 0.20m deep. As these features were dug into L28 it is possible that more extensive and related features underlie the cairn. South of the clear edge of L28 features F75 and F76 were dug into gravel, L10/29, and filled with loose stony material with some charcoal. Two features, F11 and F12 (not illustrated), at a higher level in this area were certainly animal burrows; therefore it seems that F75 and F76 may be considered to be part of this disturbance. Features F56 and F57 in the disturbed area south of L28 had similar characteristics, although a post-hole, P77, punctuated the western end of F56, but this could have been dug from above and later truncated by ploughing.

L13 overlay L28 in the court area and in the south-west area of the excavation. It was absent in the area south of the court. This was a yellow, sandy material overlain by L14 (see below) in the inner area of the court. Fragments of two Early Neolithic carinated bowls (vessels 15 and 16) and a lump and flake of quartz were found on the surface of L13. As the sockets for the entrance jambs to the gallery appeared to have been cut into L13 it is thought that this is the layer onto which the tomb was built. There were two significant features cut into this layer. The first, F50, was an oval pit placed along the chord of the court just west of centre. It measured 0.70m east/west by 0.65m north/south, was 0.34m in maximum depth at centre and was filled with a mixture of gravel and sand. There were hollows at west (0.12m deep), east (0.15m deep) and north (0.13m deep) which may have supported

No	Diameter	Depth	Fill
P63	0.05 x 0.05m	0.10m	dark with charcoal and packing stones
P64	0.07m x 0.07m	0.08m	dark with packing stones
P65	0.08m x 0.08m	0.08m	soft, light soil
P58	0.07m x 0.07m	0.11m	
P59	0.07m x 0.07m	0.13	
P22	0.10m x 0.09m	0.15m	grey, brown silt, charcoal
P62	0.08m x 0.08m	0.10m	dark with charcoal

Table 5 Stake-holes cut into layer 13 and large features in court.

No	Diameter	Depth	Fill
P79	0.10m x 0.10m	0.17m	disturbed
P78	0.08m x 0.08m	0.12m	disturbed
P77	0.20m x 0.20m	0.17m	disturbed
P80	0.12m x 0.12m	0.23m	silty, brown soil
P83	0.13m x 0.12m	0.15m	sandy pink soil
P84	0.10m x 0.10m	0.08m	sandy pink soil
P85	0.08m x 0.08m	0.08m	soft brown soil
P86	0.10m x 0.10m	0.09m	dark brown soil, charcoal
P87	0.08m x 0.08m	0.10m	light brown soil
P88	0.07m x 0.07m	0.09m	light brown soil, charcoal
P91	0.13m x 0.13m	0.13m	light brown soil, charcoal
P92	0.09m x 0.09m	0.09m	silty grey soil
P93	0.16m x 0.16m	0.11m	silty grey soil
P90	0.23m x 0.23m	0.30m	sandy and brown soil
P89	0.18m x 0.18m	0.24m	brown soil, charcoal

Table 6 Details of stake- and post-holes south of the tomb.

posts. Three minor stake-holes, P58, P60 and P61 (0.11m, 0.12m and 0.12m deep respectively), were dug through its south-western edge. As with all the stake-holes in the court, it was not clear whether or not they related to the features they were cut into and may have been later intrusions from above. This feature was largely covered by F18, an irregular lens of charcoal 0.72m x 0.70m in extent (Fig 6). The second significant feature here, F77, lay along the central axis of the court 1m from the entrance to the gallery. It was cut from L13 which had spilled slightly into the top of it, penetrating L28 and the natural esker surface below. It originally showed as a thin lens of charcoal which overlay a sterile fill in its upper part with a further charcoal lens below and was found to be a post-pit 0.60m x 0.66m wide at the top, with a post-hole 0.43m x 0.22m within it, narrowing to a flat base at a depth of 0.32m. This pit may have supported a rectangular plank or planks with the broad sides facing east/west. It was later covered by L14 (below) which contained sherds of an Early Neolithic carinated bowl (vessel 26), so whatever it supported had been removed by the time of this deposit.

West and south-west of F77 two post-pits, F27 and F53, were each 0.15m in depth and between 0.15m and 0.20m in diameter. Continuing their arc eastwards was a further steep-sided pit, F55,

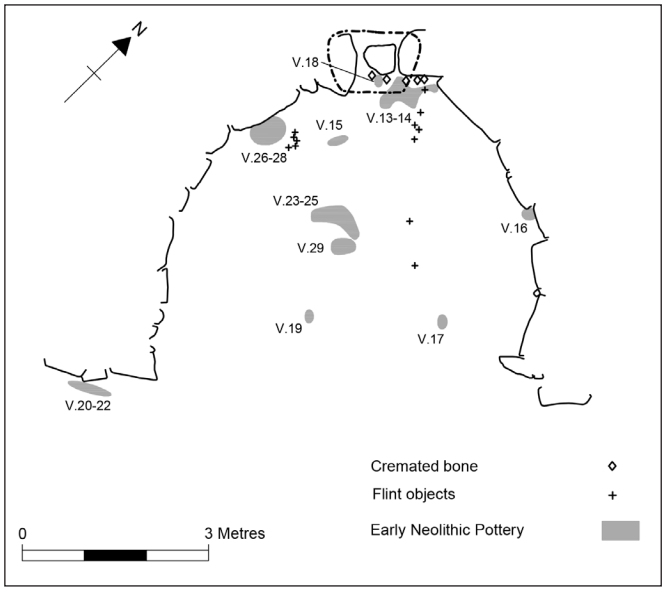


Fig 7 Disposition of Neolithic pottery, flint objects and cremated bone on the floor of the court relating to the primary use of the tomb.

0.40m by 0.60m in diameter and 0.20m deep, and a larger oval pit, F58, 0.80m by 0.70m in diameter, containing a post-pipe 0.26m deep. These features together with F77 seem certainly structural and, while it could be suggested that they represent a pre-cairn structure, this is not clear and they are at least likely to be related to the earliest activity in the court. East of the centre of the court a shallow hollow F80, 0.53m by 0.39m and 0.05m deep, had a silty fill and much charcoal. F26 in the western part of the court was a sub-rectangular pit 0.60m by 0.70m in diameter with a depth varying from 0.12m to 0.20m and the base was flat. This pit was later expanded to south west and may have supported a post at its south-east corner. F81, an oval post-pit, 0.22m by 0.40m in diameter and 0.13m deep, in the western part of the court had a charcoal-flecked fill which had spread out over L13, which may indicate that it was deliberately decommissioned and back-filled. In addition to the features described above, several stake-holes were recorded punctuating L13 (details in Table 5). It was not always clear whether they were cut from this layer or from above and a possible arc of stake-holes (P62, P63, P64 and P65) intersects F26. It is possible to suggest a straight line of stake-holes (P58, P59 and P22) running through F50 and intruding into F26. L13 had been partially truncated at the mouth of the court but it remained in the area south of the south west façade.

Area south of tomb (Fig 6 above)

Features F56 and F57 are two parallel gullies 2.75m long cut into L13 with the central portions missing. While they may be animal burrows, a post-hole P79, and a stake-hole P78 were cut into the western edge of F 57 (dimensions of smaller features here in Table 6). At the west end of F56 a post-hole, P77, terminated in a flat stone which may have been used to provide support for a wooden post. West of F56 and F57 three post-holes, P83, P84, P85, form a little arc. Post-hole P80 to the east of this arc may relate to P77 and P79 further east. P88 penetrated the north-western edge of F62 (in L28) and may form an arc with P86 and P87. Three very distinctly related post-holes run in a line north to south at the east end of F63: P91, P92 and P93. A larger post-hole, P90, was cut through F63 and is similar to post-hole P89 1.90m to its south. It has proved impossible to provide definitive interpretation for the patterns formed by these stake- and post-holes. At best they are evidence of a flimsy structure or structures which, as they are largely cut into L13, may be contemporary with the tomb building and early activity in the court.

Lying on L13, slightly off-centre to west in the court and covering F26, F50, F53, F54, F55 and the western part of F80, were two spreads of dense charcoal — F18 and F51 (Fig 6). F18 was an irregularly shaped deposit at the mouth of the court spreading slightly beyond it and overlying F50. It measured 0.72m x 0.70m and was at most 0.03m thick. F51, partly overlay F18, was also irregular in outline, measured 2.50m by 2.20m and varied in thickness from 0.05m to 0.15m. An oval area at its centre, 1.40m by 0.80m, was quite clear of charcoal, which suggests that it was deposited on top of something which obstructed the deposit. These charcoal spreads represent two separate episodes of deposition and, as there was no burnt earth below them, they must have derived from elsewhere. Finds (Fig 7) from F51 were three pieces of an incomplete burnt flint plano-convex knife (1107–1109) and fragments of three Early Neolithic carinated bowls (vessels 23, 24 and 25). The southern lens of charcoal, F18, was covered over by the redeposited L10 (see below).

Immediately to the north of the pit at the north of the court (F77) an area of redeposited clay 1.20m in diameter, L30, lying on L13 may have been the upcast from the socket for the entrance sill and eastern entrance jamb. L14 was a spread

No	Diameter	Depth	Fill
F49	0.75m x 0.55m	0.10m	sandy loam
F48	0.78m x 0.42m	0.06m	brown soil, stones
F47	0.78m x 0.62m	0.22m	brown soil stones and charcoal
P54	0.40m x 0.28m	0.26m	brown soil, stones and charcoal
P55	0.40m x 0.40m	0.13m	silty soil
F67	0.80m x 0.30m	0.25m	brown soil, stones
P68	0.09m x 0.09m	0.13m	brown soil, charcoal
P88	0.07m x 0.07m	0.09m	light brown soil, charcoal

Table 7 Details of features and post-holes south of the south-east façade.

of grey sandy soil heavily flecked with charcoal which overlay L30 and L13 in front of the entrance portal. It spread out in an arc extending for 2.10m as far as the edge of orthostat 08 at the west of the court and as far as orthostat 04 at the east. A little cremated bone was found within it (1055, 1078), as well as fragments of six Early Neolithic carinated bowls (vessels 13, 18, 22, 26, 27 and 28). Several flint tools, mostly classified as borers or scrapers, were found in this layer too, six of them showing extensive handling wear; there were three blades (608, 783, 1086), three scraper/borers (801, 803, 1067) two scrapers (1075, 1076), four flakes (802, 1076, 1088, 1093), and nine quartz flakes (1074, 1087, 1090, 1111, 1115, 1126). As this was directly in front of the entrance to the tomb, with a complex group of flint tools and parts of Early Neolithic carinated bowls, it may have been the focus of a particular activity, possibly ritual related. It is also reasonable to suppose that some objects including the little cremated bone previously deposited in the chambers may have been moved and redeposited in tidying out the tomb from time to time in preparation for further burials or rituals. However, the pot sherds in this layer were not part of any pots deposited in the chambers. Evidence for the movement of inhumed and cremated bone was recorded at Parknabinnia court tomb, Co Clare (Waddell, 2010, 92–93), and at Poulnabrone portal tomb in the same county there was evidence for the commingling of bone and manipulation of skeletal material around the chamber which was considered to be a tidying activity (Lynch 2014, 181).

South of the mouth of the court extensive disturbance was perceptible, possibly caused by animal burrowing; L10, possibly the equivalent of L6 elsewhere, was a loose, yellow, stony material up to 0.10m thick with many animal burrows extending across the area south of the court underlying the cairn spill. A pit, F12 (1.12m x 1.32m and 0.45m deep) (not illustrated), was cut into it in the south-west area of the excavation and a gully, F11 (2.50m long and 0.30m at the widest point and 0.23m deep) (not illustrated), which may be an animal burrow, was also cut into L10 above F12. Several sherds of Neolithic carinated bowls (vessels 17 and 22), a burnt flint fragment (1032) and three flakes of quartz (955, 1066, 1168) were recovered from L10.

Two post-holes were cut from layer L10; P20 (diameter 0.06m, depth 0.09m) was filled with grey brown silt with small packing stones, and P19 (0.10m in diameter and 0.07m deep) was filled with charcoal. If related, they cut across the line of the parallel linear features F56 and F57, considered to be animal burrows. South of the south-east façade and also cut into L10 was a discrete group of shallow pits arranged in a slight arc (details in Table 7); two of these continued beyond the southern edge of the excavation. F49 was a shallow pit. F48 was a shallow, oval pit. F47 was a linear feature which continued under the southern baulk with a post-hole, P54, just outside it to north and a second post-hole, P55, to the west. F67 was truncated by the southern baulk and may have contained a post against its west side and there were two small post-holes P68 and P88 further west, close to the southern baulk. These features form a discrete group which may relate to activity beyond the limits of the excavation and as a group they curve slightly towards the court.

The sandy brown, leached soil, L4, present throughout the site, was an old sod layer with a lens of iron pan, L5, separating it from L6 in the northern part of the site and from L10 south of the court. Orthostat 01 in the south-east corner of the court was positioned on this layer, suggesting that it had been replaced or repositioned sometime after the construction of the court.

A collapsed field wall, F3 (not illustrated), was found lying on L4 extending south from the eastern façade immediately below the peat. This was a spread of stone 2m wide, 2.7m in length and 0.22m high which ran under the southern edge of the excavation above the arc of features in L10 described above.

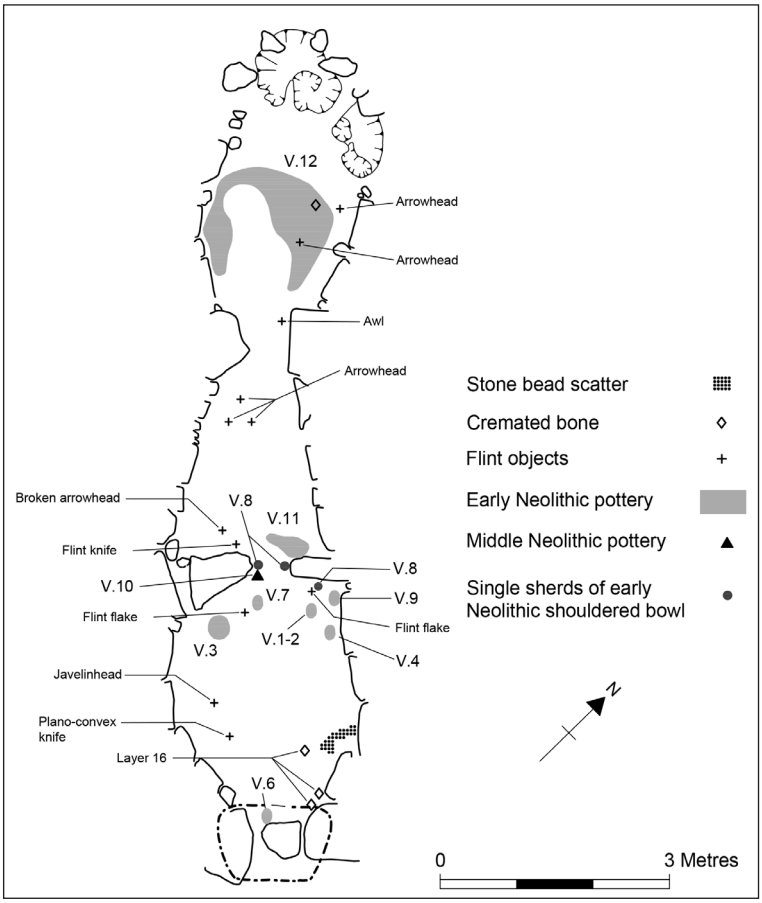


Fig 8 Finds recovered at primary level in the burial gallery which may indicate the former presence of inhumed burials; layer 16 cremation positions in chamber 1 also indicated.

From the mouth of the court and all around the rest of the site the collapsed cairn material lay on and was embedded into L4, with a dark silt, L7, percolated from the peat above, accumulating between the stones. Cairn material in the court area lay on and was variously embedded into L14, L4 and L10. Few finds were recovered from the main body of the cairn outside the court area: from quadrant 1 a flint flake (217) and two quartz flakes (290, 293); from quadrant 2 a flint flake (261) came from under the sod in cairn material; from quadrant 3 a single flint flake was recovered (224); in quadrant 4 in cairn material were found a burnt flint flake (262), a chert fragment (263) and a clay pipe stem (264). A weathered stone axe of porphyritic andesite (308) (Fig 23) was found in topsoil on the eastern part of the cairn.

On the collapsed cairn material, the dark base of the peat, L3, overlay most of the site. Above this was a fibrous layer of peat, L2. The topsoil, L1, which surrounded the site and had grown over the cairn was cultivated in the surrounding field in the 20th century.

Burial deposits in the gallery (Fig 8)

Chamber 1

In the western part of chamber 1 a greenish sticky silty material, L24, was identified lying directly on the natural surface. Within this layer was found a single sherd of an Early Neolithic carinated bowl (vessel 3), a flint javelin head (1188), a flint plano-convex knife (1193) a flint flake (1187) and quartz pieces (1101, 1102, 1178–1181, 1184, 1185, 1189, 1190, 1192), three of which may be struck flakes. Partly overlapping L24 and extending east to west across the chamber L25 was a black, sticky charcoal-rich material. A sample of charcoal from this layer (sample 150) was submitted for radiocarbon dating, and returned a date in the range 3850–3150 cal BC (UB-2540). Many sherds of two Early Neolithic carinated bowls (vessels 1 and 2) were found in this layer scattered in the northern area of the chamber near the jambs between chambers 1 and 2. Also from this layer were many quartz fragments (1085, 1144, 1145, 1151–1155, 1175–1177) one of which (1152) is a small flake and two flint flakes (1146, 1174). The most remarkable find from this layer

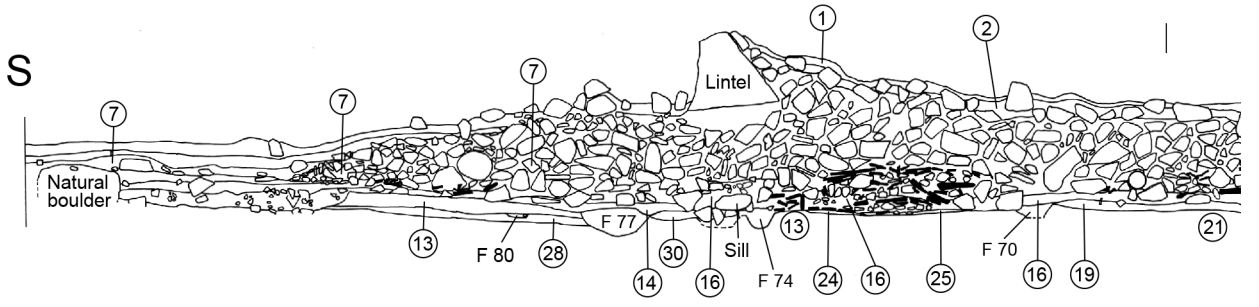
Pl 10 Chamber 3 from north-west with sandstone slabs cracked *in situ* above primary burial level.

was a collection of 123 small round beads of schist (1157) (Fig 15), presumed to have been formerly threaded together. They were found in chamber 1 scattered in an area 0.5m by 0.10m between orthostats 012 and 013 (Fig 4). There was no human bone found at this level in this chamber but the disposition of objects may imply that one or more inhumations was interred which have not survived the acidic soil conditions (Appendix 2). Overlying L24 and L25 a brown silty clay, L16, was recorded which also extended into chamber 2. In chamber 1 many cremated bone fragments were found in L16, above L25, just inside the entrance representing an estimated nine burials: 1 male, 3 female and five indeterminate (Appendix 4). Also recovered here were three stone beads (1049, 1050, 1053) which appear to be outliers of the group found in L25, below, three quartz flakes (990, 1052, 1083), a flint flake (1051) one neck sherd and five body sherds of an Early Neolithic carinated bowl (vessel 3). Between chambers 1 and 2 an arrangement of stones found collapsed but which would have stood to two to three courses may have worked as a sill between the chambers or may be the remains of a former blocking wall.

Chamber 2

In chamber 2, L19, a grey, slightly sticky, sandy soil lay directly on the subsoil with pottery and flint objects pressed into its surface; seven sherds of an Early Neolithic carinated bowl (vessel 11), one flint lozenge-shaped arrowhead (926) and one flint leaf-shaped arrowhead (927), a broken flint arrowhead (953) and a flint blade (957) were recovered here. As in chamber 1, L16 occurred above those primary deposits and produced a sherd of a Middle Neolithic bowl (vessel 10), a sherd of an Early Neolithic carinated bowl (vessel 11), the bulk of which was found in the primary L19 (see above), a flint blade (1182) and a fine chert leaf-shaped arrowhead (921). There were no human remains found in chamber 2 but the disposition of objects may again reflect the layout of one or more inhumations which have not survived the acidic soil conditions. Phosphate

Pl 11 Sandstone roofing slabs fallen at various angles along the west side of chamber 1.


S
Natural boulder
Lintel
F 77
F 80
Sill
F 74
F 70

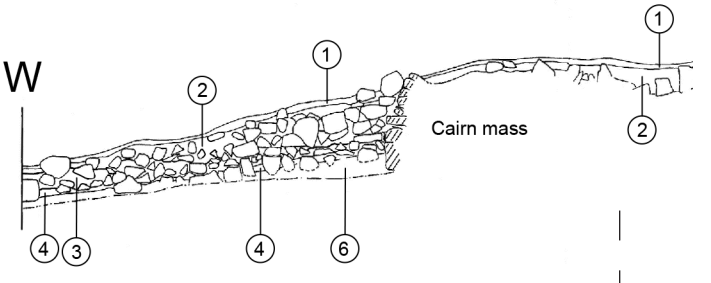
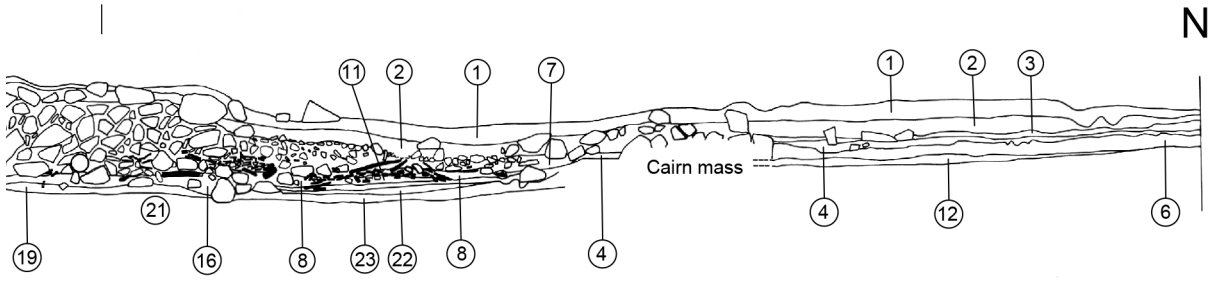

W
Cairn mass

Fig 9a North/south section through the centre of the cairn with sandstone slabs emphasised in black.



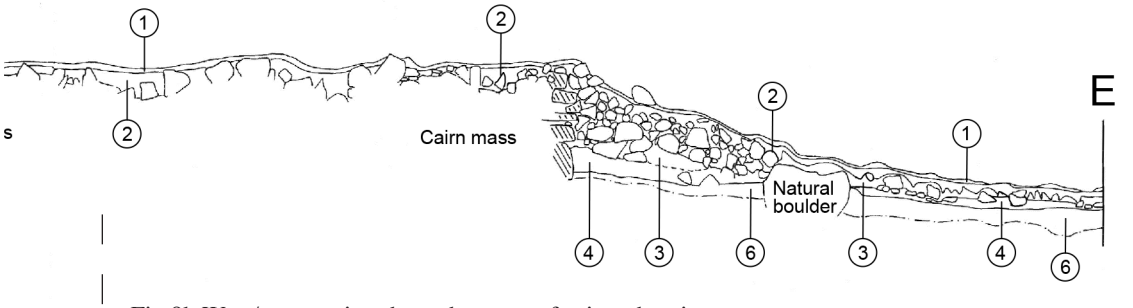


Fig 9b West/east section through centre of cairn, showing slipped cairn material concealing the revetment on each side.

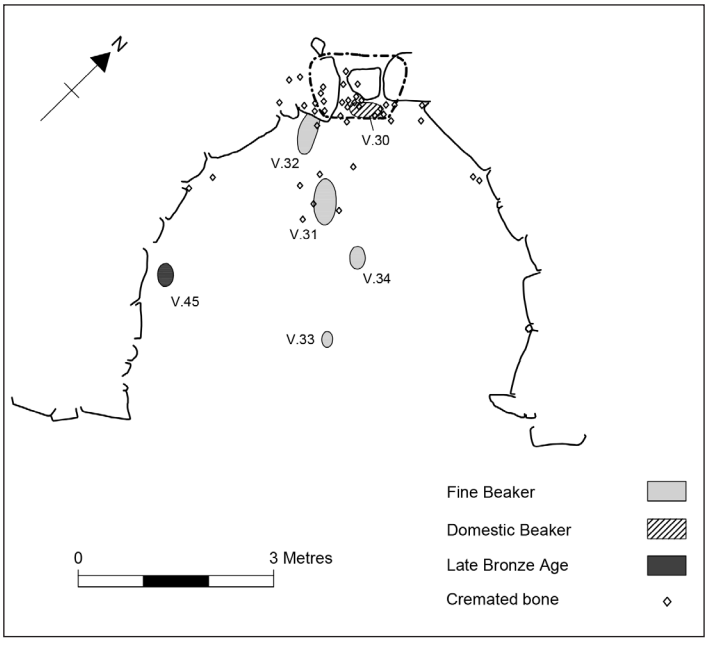


Fig 10 Disposition of Bronze Age burial deposits on top of cairn material in the court area.

analysis to test this across the chamber floors was not conclusive. However, soil analysis from beneath a fallen orthostat, 025, on the east side of this chamber had a high organic matter between 30 and 50% more than the local natural values, which may indicate leaching of burial remains into this socket (Appendix 2).

Chamber 3

In chamber 3 several layers were identified overlying the natural surface, only one of which (L11 below) contained cultural material. L23 was a dark orangey stony layer with charcoal flecks; above this L22 was similar but less stony and with patches of grey silt; L17 was a hard, bright, yellow clay in the area of F21 and F22, the sockets for missing orthostats, and considered to be the redeposited natural from the original digging of those sockets; L18, a bright orange gritty soil mainly in the west of the chamber, was streaked with grey silt. L11, immediately above these, was a fine grey damp soil and contained the majority of finds from chamber 3. A flint javelin head (294) was recovered from the surface of L11, as was a flint awl (925) found between the jambs separating chambers 2 and 3. Over 25 sherds of an Early Neolithic uncarinated bowl (vessel 12) were recovered, widely scattered across L11, as well as a leaf-shaped flint arrowhead (908), a broken flint arrow head (910), a quartz flake (913), five burnt flint fragments (476, 518, 526–528) and 2g of cremated bone. A sample of charcoal from L11 (sample no 69) returned a date in the range 3700–2950 cal BC (UB-2539), which was broadly similar but slightly earlier in its upper range to the date returned for L25 in chamber 1 (above).

Sealing and roofing

L16, the brown silty clay above L24 and L25 in chamber 1 and above L19 in chamber 2, had also spilled over the entrance sill (Fig 9a). It varied in depth from 0.30m in the entrance area to 0.10m in chamber 2. A substantial layer, 0.55m deep, of sandstone slabs, ranging in diameter from 0.50m to 0.20m across was found within L16 in chamber 1, well pressed into its upper surface. This may have been a sealing layer added after the deposition towards the south end of the chamber of a minimum of 9 cremated remains (Appendix 4). A layer of sandstone slabs higher up within the cairn collapse, L7, in chamber 1 was as much as 0.40m deep. In chamber 2 a similar layer of sandstone slabs was found only in the southern part, possibly sealing L16, although less extensively than in chamber 1, and in chamber 3 sandstone slabs were found within and over L11. A charcoal-flecked orange layer, L8/9, found between these slabs in chamber 3 produced many sherds of an Early Neolithic uncarinated bowl (vessel 12) and three flint flakes, two of which were burnt (291, 513, 516). These slabs were many layers thick and disposed at various angles from horizontal to 60 degrees. The larger slabs were often cracked *in situ* (Pl 10) and while the lower sandstone slab layers may be sealing layers for final burials in the tomb as in chamber 3, the presence of slabs higher

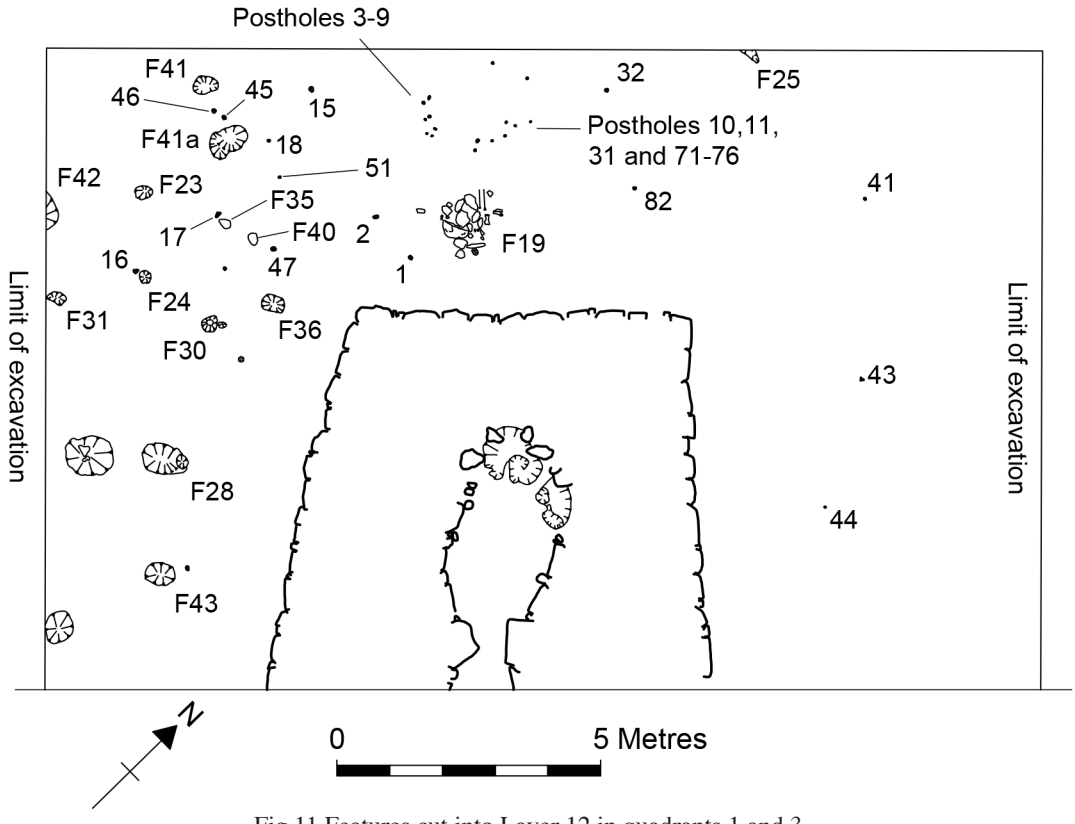


Fig 11 Features cut into Layer 12 in quadrants 1 and 3.

up within the collapse, L7, in chamber 1 suggests that some of them fell from a height in a single collapse episode and may have been used as a final roofing layer to bridge between the upper corbels. In support of this interpretation some of them were found at steeply pitched angles along the west side of chamber 1 (Pl 11).

Chambers 1 and 2 had filled up with cairn stones and a few fallen corbels and the black silty material, L7, had accumulated between them in the upper levels, probably washed down by percolation from the layer of peat above. A thin layer of topsoil eventually sealed the site. Only the top of the entrance lintel and the tops of two blocks of the south-western façade were clear of vegetation at the outset of the excavation.

Bronze Age burial deposits (Fig 10)
In the Early Bronze Age when the tomb had already collapsed the cairn material which had slipped into the court was re-used and quite possibly reconfigured for Beaker period burials. Fragments of cremated human bone representing a minimum of eleven individuals were recovered from L7 high up in the collapse, some on the surface and engulfed by later peat growth. Other fragments of bone had filtered further down among the stones and it was concentrated around the lintel area of the burial gallery. As with the cremated bone found within chamber 1, only token parts of cremated individuals were deposited. In the same context over 100 sherds of beaker pottery (vessels 30–35) were found, indicating at least one phase of re-use of the tomb for burial at this period. Cairn collapse in the area of the entrance lintel also produced a flint scraper (426), a flint knife (126), two flint flakes (1056, 420), a burnt flint flake (515) and five quartz flakes (131, 184, 280, 284).

Areas surrounding the tomb at west, north and east
There were many minor features recorded in these areas which had no recoverable relationship to the tomb, but the pottery found here does suggest a sequence of activity from Early, through Middle Neolithic to Bronze Age, illustrating a sustained interest in this place whether continuous or sporadic for domestic or ritual purposes. There was a marked concentration of features and small finds in the

north-western quadrant 3 and some minor features cut by the excavation limits suggest that the area of archaeological interest extends further north and west on the slope of the esker.

Layer 12

Above the esker surface in this area was a dry sandy soil, L12, into which a number of features and post-holes had been cut (Fig 11). There were many objects found at this level, particularly from quadrant 3 in the north-west area of the excavation: sherds of Early Neolithic carinated bowls (vessels 36, 37) as well as sherds of Middle Neolithic bowls (vessels 10, 42 and 43), eight quartz flakes (932, 987, 988, 995, 1038, 1039, 1061), four flint flakes including one burnt (934, 935, 947, 948), a flint scraper (996) and a quartz core (975). By contrast, in the same layer in neighbouring quadrant 1 at north-east, only ten quartz flakes (956, 989, 1063, 1064, 1098, 1099, 1100) and a few pot sherds of an Early Neolithic carinated bowl (vessel 35) were recovered.

Two features, F43 and F28, cut into L12, were probably also hearth bowls, as they have the characteristic reddened earth base with little remaining charcoal. At a distance of 2.50m from the west side of the tomb a hollow, F43 (0.52m by 0.42m was 0.08m deep), was filled with compact reddish soil and a stake-hole 0.30m to east, P50 (diameter 0.07m, depth 0.10m), had a brown sandy fill and was possibly associated. An oval depression, F28 (0.45m by 0.75m and 0.08m deep), 2.20m to the north, may have been a second hearth. It too was filled with a pinkish-red soil with some charcoal flecks and at the eastern edge a small hollow 0.06m deep was filled with a dark silty soil with some charcoal flecks.

Further features and post-holes in the north-west area of the excavation have been described objectively below as they defy more collective interpretation. The first is a small depression F36 (0.48m by 0.38m and 0.11m deep) filled with stony soil. Further west, F30, had two elements: a smaller hollow to the east (0.13m by 0.10m and was 0.03m deep), and a larger hollow to the west (0.30m by 0.29m and 0.09m deep), filled with dark soil with charcoal in the upper fill. The next feature, F24 (0.26m in diameter and 0.12m deep), was filled with soft brown clay. West of the latter a post-hole, P16 (0.08m in diameter and 0.13m deep), was filled with a pinkish-grey sandy soil. Further west of this group of features, against the limit of the excavation, a lens of grey soil, F31 (0.35m by 0.23m and 0.04m deep), was recorded. To north, a shallow cut, F23 (0.23m by 0.45m and 0.06m deep), was filled with fine silt.

Context no	Diameter	Depth
P70	0.07m	0.14m
P31	0.04m	0.10m
P73	0.05m	0.07m
P74	0.05m	0.08m
P72	0.05m	0.10m
P71	0.05m	0.08m
P69	0.09m	0.15m
P10	0.12m	0.09m
P11	0.08m	0.15m
P3	0.05m	0.06m
P4	0.07m x 0.04m	0.11m
P5	0.08m x 0.05m	0.11m
P6	0.05m x 0.04m	0.09m
P7	0.09m x 0.08m	0.10m
P8	0.04m	0.09m
P9	0.07m x 0.04m	0.06m
P75	0.05m x 0.06m	0.06m
P76	0.06m	0.11m

Table 8 Dimensions of post-holes of possible small structure forming an arc north of the tomb.

Three closely spaced post-holes P17, P33/F35 and P47 and a small feature F40, which was probably also a post-hole, formed a slight arc with the concave facing north-east. Post-hole P17 (0.12m x 0.08m and 0.07m deep) had a pinkish-grey sandy fill. To its east, F35 (0.18m by 0.22m and 0.18m deep) was a more substantial post-hole, oval in shape, filled with loose sandy gravel. Post-hole P47 (0.12m in diameter and 0.10m deep) was filled with a pinkish sandy soil. The next, F40 (0.23m by 0.18m and 0.10m deep), a small, oval depression, was filled with soft orange sandy silt. Towards the north-west, cut by the edge of the excavation, a shallow pit F42 (0.73m long and 0.12m deep) extended 0.35m in from the edge of the excavation and was filled with a black soil with stone and charcoal inclusions.

To the north of the above group of features two hollows, F41 and F41a, were set either side of two post-holes P45 and P46. The southern hollow, F41a, was oval in shape and measured approximately 0.40m by 0.60m (depth unrecorded). F41 (0.46m by 0.33m and 0.12m deep), was filled with orangey brown soil with stone inclusions, in which a flint flake (1079) was found. Post-hole P45 (0.10m in diameter and 0.08m deep) was filled with silty

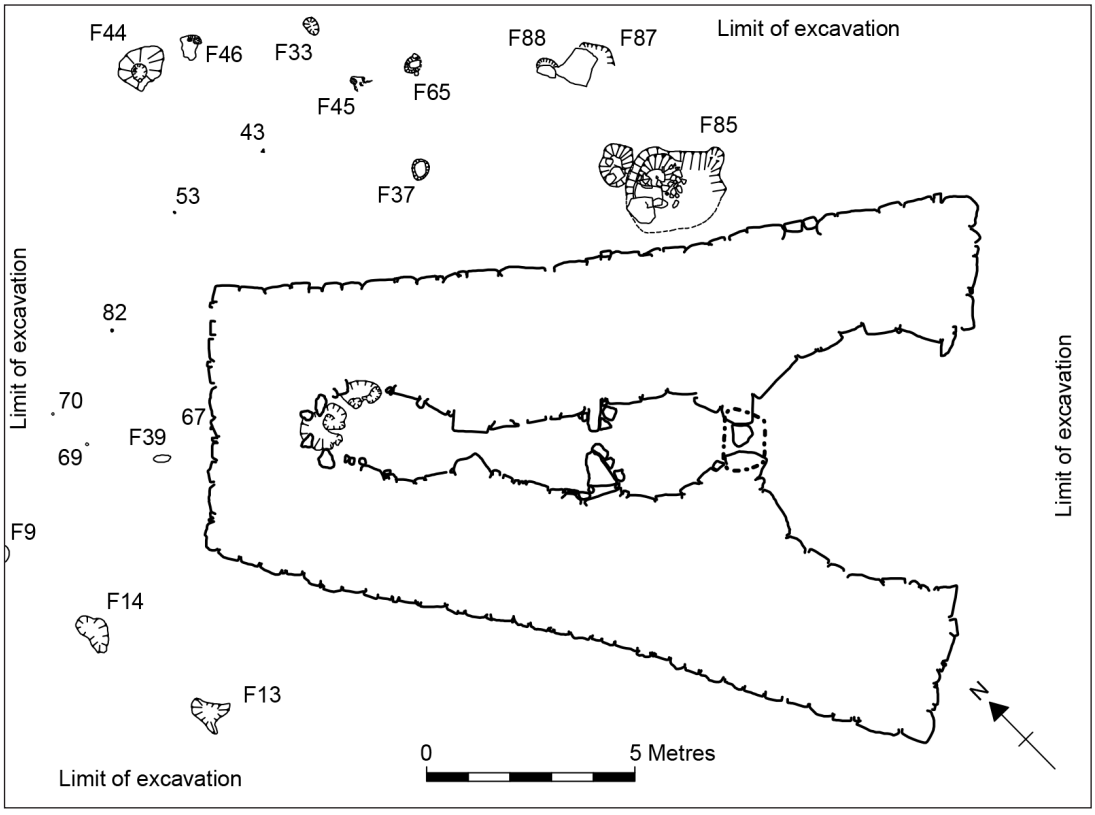


Fig 12 Features cut into layer 6 to north and east of tomb.

brown soil and P46 (0.11m in diameter and 0.09m deep), was filled with buff coloured sandy soil.

Possible small structure

At a distance of 3.20m north of the back of the tomb a concentration of 16 stake-holes, seemingly cut into L12, provides the only evidence for a small structure or screen in this area (P70, P31, P74, P73, P72, P71, P69, P10, P11, P3, P4, P5, P6, P7, P8 and P9) (see Table 8 for dimensions). They formed a distinct arc measuring 1.90m north-east to south-west and 1.40m north-west to south-east. In six cases the stake-holes seem to be paired, defining an inner and outer edge to the enclosed space. Two further stake-holes, P75 and P76, were positioned to the north of the arc and were possibly associated with it. A gap in the middle of the arc, 0.70m wide, defined by four stake-holes (P4, P5, P10 and P11), may have been the entrance-way, with nine stake-holes forming the eastern arc and seven stake-holes to the west. Two of these (P70 and P69) were cut from L6 above, suggesting that if they did belong to this structure, then the other post-holes may have been truncated and all may have been originally cut from L6. Ploughing may account for the disappearance of tops of features at higher levels.

In quadrant 1, against the northern edge of the excavation, a shallow gully, F25, extended beyond the limits of the excavation and 0.44m into it. It was 0.24m at the widest point, and 0.10m deep, filled with light brown silty clay. North and east of the back revetment were four isolated post-holes; P32 was 0.08m in diameter and 0.12m deep. P41 measured 0.05m in diameter and 0.07m deep, P43 measured 0.10m in diameter and 0.12m deep and P44 was 0.06m in diameter and 0.11m deep.

Layer 6 (Fig 12)

L6, overlying L12, manifested as a sandy soil which extended across the whole of quadrants 1, 2, 3 and 4 and was found against the revetments of the tomb, giving the impression of post-dating its construction. However, this could be the result of the tomb sinking into the ground over time. The soil and pollen analyses (Appendices 2, 5) suggest that a natural layer is missing here, possibly removed by animal activity or deliberately to prepare a working surface. Features noted in this layer were fewer than in L12.

Within 1.50m of the back of the tomb a spread

of flat stones, F19, was c 1m in diameter and 0.20m deep and had a small hollow, F39 (0.13m x 0.15m and 0.07m deep), on its southern edge filled with soft black soil with large inclusions of charcoal. This is a significant feature and may have been a working platform for some activity although there were no artefacts or debitage on or near it. Further isolated post-holes in quadrant 3 (P1, P2, P51, P18 and P15) could not be reasonably related to any pattern. The first, P1 (0.08m in diameter, 0.18m deep) was filled with a brown silty soil. P2 (0.08m x 0.06m in diameter and 0.09m deep) had a brown, silty soil fill. P51 (0.05m in diameter and 0.07m deep), to the east was filled with light brown sandy soil. To north-east of this, P18 (0.05m in diameter and 0.07m deep) was filled with grey-brown sandy soil. P15, 1.80m from the north edge of the excavation, was 0.10m in diameter and 0.09m deep and was filled with brown stony clay. P32 (0.06m in diameter and 0.12m deep) was also within 1.80m of the north edge of the excavation but the fill was not recorded. A lens of ash (F5) was also recorded in L6.

Close to the eastern limit of the excavation, 6m from the eastern revetment, an oval hollow, F33 (0.33m x 0.42m, and 0.12m deep) was filled with a dark brown soil on its east side and along the base of the hollow, and with a light brown deposit and a large stone filling the rest of the feature. South west of this feature an oval pit, F45 (0.30m x 0.60m and 0.45m deep) had three circular depressions at the bottom, possibly the bases of stake-holes, which were filled with charcoal and were each 0.05m in diameter. F65 to south of F45 was a possible post-pit but a large sloping stone at its base may preclude this. This was 0.30m deep and otherwise loosely filled with brown-black stony soil. F37 lay 2.10m west of F 45 and was a steep-sided pit 0.38m by 0.50m and 0.28m deep.

Most of the finds from L6, as for L12, were concentrated in quadrant 3 where sherds of five Early Neolithic carinated bowls were found (vessels 36, 37, 38, 39, 40) and sherds of three Middle Neolithic bowls (vessels 41, 42, 43). In the case of vessels 37 and 43 some of the sherds were found in L12, below, probably distributed by ploughing. The most surprising pottery find here is many sherds of an Early Bronze Age encrusted urn (vessel 44), two rim sherds, one rib sherd and 43 body sherds, two of which were found in L4 above, and three were found at the base of plough grooves cut into L6. In quadrant 1 L6 had sherds of an Early Neolithic carinated bowl (vessel 35) with a related rim sherd found in L12. Flint tools found in quadrant 3, L6, were an end scraper (310), a flint knife (916) and a flint blade (997). There were also nine flint flakes (306, 307, 313, 429, 517, 790, 917), including one burnt fragment (456) and one fragment recovered from the surface of L6 (292).

Minor flint flakes were also abundant here, suggesting *in situ* working (171, 172, 176, 177, 180, 182, 187, 189, 190, 192-195, 197, 198, 200–205, 207, 222, 249, 258, 259, 285–288, 295–297, 305, 311, 371-374, 377, 379, 380, 381, 397, 400, 403, 405, 407, 417, 432, 437, 449, 451, 453, 454, 460, 465, 466, 479, 488, 490 , 493, 495, 504, 541, 785, 786, 794, 819–821, 826, 827, 906, 1119, 1205), and there were 22 burnt flakes (316, 343, 375, 376, 378, 389, 395, 396, 404, 412, 459, 467, 469, 473, 478, 484, 489, 501, 505, 248).

Quartz lumps, flakes and fragments also occurred in great numbers to the north of the tomb in L6; 124 quartz fragments (309, 788, 789, 918, 959, 960, 962, 998, 999, 1001–1003, 1005–1008, 1010–1014, 1016, 1018, 1020, 1022–1030, 1040–1048, 1156) and seven quartz cores (961, 1000, 1009, 1015, 1017, 1019, 1021), were concentrated along the back and north-west side of the revetment of the tomb.

Features and finds in L6, as for L12, were less numerous in quadrant 1. North-east of the north-eastern corner of the back revetment, cut into L6, a post-hole, P53 (0.09m x 0.10m and 0.10m deep), was filled with grey silt with charcoal specks. North-east of this a shallow hollow, F44 (1.20m x 1.00m and 0.10m deep), was filled with pinkish-buff soil with charcoal inclusions and may have been a hearth. Immediately to the east of this feature a deeper hollow, F46 (0.40m in diameter and 0.27m deep), had a post-hole at the south-east edge and animal burrow at the north-west edge. It was filled with yellow, grey silt. South of this feature a circular hollow, F37 (0.40m wide and 0.30m deep), had been covered by collapsed cairn and was filled with brown clay. Near the north-eastern limits of excavation an oval feature, F33, measured 0.42m by 0.33m and 0.12m deep. It was filled with a light brown soil on top, changing to dark brown at the bottom, and was probably an animal burrow. In the same area a steep-sided hollow, F65 (0.42m long x 0.38m wide and 0.30m deep), had a flint flake (1199) in its brownish-black soil fill.

To the south of F65, a curving, steep-sided, narrow trench, F88 (0.58m x 0.15m wide and 0.20m deep), was filled with brown soil. Its proximity to three burrows nearby suggests that this may also be due to animal activity. Less than a metre away a similar feature, F87 was cut by an animal burrow. A pit, F85, next to the north-east revetment was 0.45m deep and contained some sandstone slabs. It was roughly 2m square and a quartz flake (1227) was found in its compact grey fill. It appeared to

be a natural hollow and may have been the result of a large boulder being moved for the construction of the tomb. This feature cut into a smaller hollow to its north, F86 (0.75m by 0.9m, and 0.25m deep), which was filled by a grey, leached soil at the top, with a layer of iron pan and then yellow soil at the base. Further south along the eastern limits of the excavation a small pit, F10 (2.00m by 1.70m and 0.40m deep), was filled with dark brown stony soil with charcoal flecks and may be an animal burrow.

In quadrant 1, F8 was cut into L6 above the shallow hollow F44. This was a linear feature 3m long and measured between 0.15m to 0.40m in width and 0.20m deep. It was filled with a dark brown sandy soil, in which a quartz flake was found (no find number), and was probably an animal burrow. Three further post-holes were found in removing the baulk between quadrant 1 and quadrant 3. P67 (0.08m in diameter, 0.10m deep) with pinkish buff silty soil was uncovered against the back revetment; P70 (0.07m in diameter and 0.14m deep) was found to north of this as was P69 (0.09m in diameter and 0.15m deep) which was inclined southwards. A further post-hole P82 (0.08m in diameter and 0.11m deep) first appeared as a charcoal spread and also inclined to the south. In quadrant 3, stratified above earlier features in the western area of the site were two amorphous hollows (F13 and F14) (not illustrated). The first, F13, measured 0.97m by 0.83m and was 0.12m deep, filled with hard homogenous soil containing a piece of flint (no find number). The second amorphous hollow F14 was similar in size, 0.9m by 0.50m and 0.09m deep. It was filled with dark brown soft soil, and contained a piece of burnt flint (no find number). Against the north-west limit of the excavation, also in quadrant 3, was a red area of burnt clay or ash, F9, measuring 0.45m by 0.20m and 0.06m deep. L6 continued southwards from quadrant 3 into quadrant 2 and was recorded as far as the south-west façade. Within it were sherds from a number of fragments of Early Neolithic carinated bowls found together in front of that façade (vessels 20, 21, 22). One body sherd of vessel 22 was found in L14 at the tomb entrance, suggesting a deliberate placing there. L6 in quadrant 2 also produced eight flint flakes (295–297, 386, 523, 1103, 1106), including three burnt ones (461, 462, 1104), and two quartz fragments (1105, 1118).

Evidence for ploughing north of the tomb

Stratified above F13 and F14 (see above) a set of plough marks, F6, crossed quadrants 3 and 1 in slight curves diagonally from the south-west to north-east. Another set of short plough marks was also recorded in quadrant 1, running at right angles to the first. The plough marks presented as grey streaks at first on the surface of L6 and appeared to be cut from L4, the old sod layer. They were unevenly spaced and averaged c 0.30m apart. The majority displayed a U-shaped profile with a few tending towards V-shaped. A decorated spindle whorl (418) (Fig 21) was found lying on the surface of L6 between two of the plough marks and three pieces of the Early Bronze Age encrusted urn (vessel 44) were found in separate grooves, suggesting they had been disturbed by the ploughing and had fallen in while the grooves were fresh.

The old sod layer, L4, was present all around the site and over the disturbed layers south of the mouth of the court. It had an average thickness of 0.07m and was quite compact with stone inclusions. The cairn had collapsed onto its surface all around the tomb and the lower layer of collapse had sunk into it. A probable cultivation gully, F2, was cut into it in quadrant 1 running parallel with the ploughmarks on the surface of L6 below. It was 9.60m in length, 0.70m wide and 0.10m deep, filled with L4, indicating that it was open when the sod layer developed. Many finds were recovered from L4 in all quadrants. In quadrant 1 there were fifteen flint flakes (9, 34, 35, 37, 39–42, 73, 82, 83, 108, 219, 370, 383), a flint scraper (327) and a flint blade (342) as well as seven quartz fragments (36, 81, 91–93, 363, 364), and a chert fragment (38).

The largest concentration of finds from L4 was from quadrant 3: fragments of a Middle Neolithic bowl (vessel 42), a flint scraper (336) and two flint thumbnail scrapers (17, 330), 43 flint flakes (10, 15, 19, 23, 27, 30, 31, 32, 123–125, 145, 147, 152, 154–156, 158, 163, 273–275, 277, 303, 304, 317, 319, 320, 324–326, 329, 333–335, 337, 339–341, 367, 368, 382, 1062), including three burnt ones (318, 321 and 322), one trimming flake (24), 91 quartz flakes (1–8, 13, 14, 18, 25, 26, 28, 29, 31a, 139, 157, 276, 298, 328, 331, 332, 941) one water-rolled quartz pebble (20), and 21 chert flakes (11, 12, 16, 21, 22, 137, 138, 140–144, 146, 153, 159-162, 164, 165). Found in quadrant 4, L4 (outside the court area to the east), were seven flint flakes (96, 103, 114, 323, 922, 939, 940), one worked flake (365), 42 quartz flakes (71, 72, 84–90, 95, 97, 98, 102, 104–107, 115, 1194–1197, 1228) and one quartz core (71). Found in quadrant 2 at the interface between L4 and L7 were sherds of a beaker vessel (vessel 31) and within L4 itself, a flint scraper (419), four flint flakes (116, 369, 431, 958) and 16 quartz flakes (33, 43–45, 94, 110–113, 115, 117, 118, 253–256). From L4 at the mouth of the court two small fragments of an Early Neolithic carinated bowl were recovered (951, no vessel number assigned), a possible flint adze (1170) and two flint fragments (914, 952).

As recently as 1,000 years ago (Appendix 5)

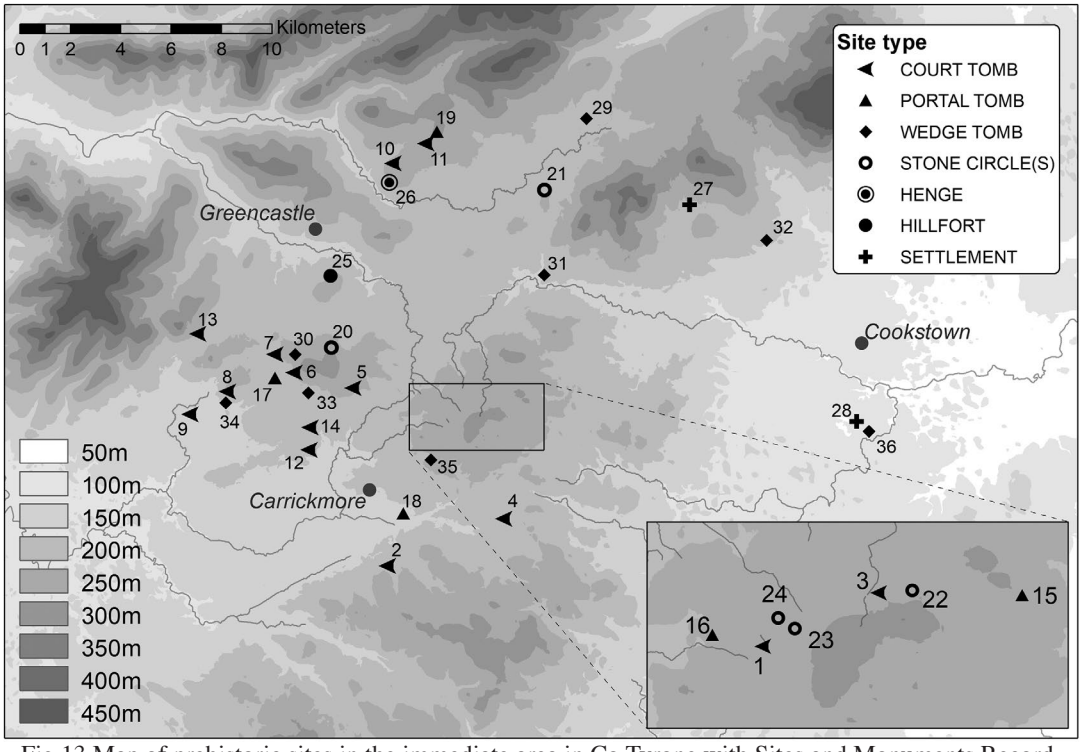


Fig 13 Map of prehistoric sites in the immediate area in Co Tyrone with Sites and Monuments Record numbers. *Court tombs*: 1 Creggandevesky (Tyr 37:14), 2 Altanagh (Tyr 44:45; Williams 1986), 3 Cregganconroe (Tyr 37:12), 4 Gortnagarn (Tyr 37:22), 5 Granagh (Tyr 36:28), 6 Loughmacrory (Tyr 27:14), 7 Loughmacrory 'Carnanbane' (Tyr 27:22), 8 Market Cross (Tyr 36:32), 9 Streefe Glebe (Tyr 36:11),10 Carnanransy (Tyr 19:5), 11 Keeran (Tyr 20:8),12 Clare (Tyr 36:9),13 Aghalane (Tyr 27:6), 14 Aghnagreggan (Tyr 36:20). *Portal tombs*: 15 Murnells (Tyr 37:10), 16 Creggandevesky (Tyr 37:16), 17 Altdrumman (Tyr 27:12), 18 Athenree (Tyr 36:2), 19 Keeran (Tyr 20:8). *Stone circles*: 20 Copney (Tyr 27:33; Foley 1983), 21 Beaghmore (Tyr 020:004; Burl 1995, 200-03), 22 Cregganconroe (Tyr 37:11), 23 Cregganconroe (Tyr 37:13), 24 Cregganconroe (Tyr 37:36). *Hillfort*: 25 Cashel (Tyr 27:2). *Henge*: 26 Crouck, 'Dun Ruadh' (Tyr 019:004; Simpson 1992). *Neolithic settlement*: 27 Ballynagilly (Tyr 21:9; ApSimon 1969), 28 Tullywiggan (Tyr 38:34). *Wedge tombs*: 29 Davagh Lower (Tyr 20:1), 30 Loughmacrory (Tyr 27:16), 31 Dunnamore (Tyr 28:9) 32 Feegarron (Tyr 29:14), 33 Mullan More (Tyr 36:8), 34 Altdrumman (Tyr 36:26), 35 Aghagogan (Tyr 37:18), 36 Loughry (Tyr 38:20).

peat formed on top of L4 and the collapsed cairn material and it has been divided for descriptive purposes into a black silty L3, and a more fibrous top growth, L2. A sample of L2 was submitted for radiocarbon dating, returning a date in the range cal AD 900–1220 (UB-2529). A sample of the black silty L3 at the base of the peat was also submitted (sample no 16) and returned a date in the range cal AD 1530–present (UB-2433). These dates seem inverted in their date ranges so some contamination must be suspected, probably by modern ploughing.

Finds from the base of the peat

From the black silty layer of peat, L3, several fragments of cremated bone (209, 210, 212), sherds of domestic beaker (vessel 30) and two flint flakes (167, 214) were found in the court area on top of collapsed cairn material. A flint flake (218) came from quadrant 3 and three burnt bone fragments (250) were recovered from quadrant 4. There were no finds from L2, the upper layer of peat, and few finds from the thin layer of topsoil L1; a clay pipe and a weathered stone axe of porphyritic andesite (308) (Fig 23) (Jackson & Meighan below) which may have been found in later cultivation and placed on top of the cairn.

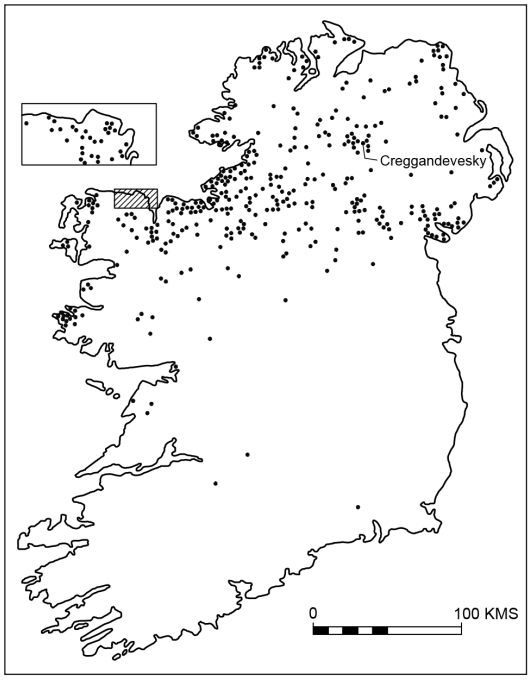


Fig 14 Distribution of court tombs in Ireland (after Waddell 2000).

DISCUSSION

Creggandevesky court tomb is one of 428 court tombs presently known in Ireland (Paul Walsh, pers comm). It is more or less central to the principal distribution of court tombs which is in the northern part of the island and far from the seaboard concentrations in Mayo, Sligo, Leitrim, Donegal, Antrim and Down but in a relatively dense cluster in central Co Tyrone (Fig 14).

Forty-nine court tombs, including this one, have been excavated in Ireland, largely since the 1930s, and they are now firmly dated to the earliest Irish Neolithic (Schulting *et al* 2012) along with the 90 or so presently known Irish rectangular houses (Smyth 2014, 27; McSparron 2008, 18-21) and the Poulnabrone, Co Clare, portal tomb (Lynch 2014, 172; Waddell 2000, 92) with implications for the dating of other portal tombs.

Regional context

Central Tyrone is rich in monuments of both Neolithic and Bronze Age date, many of which were uncovered in peat cutting over the past 150 years or so. This tomb is part of a particularly rich cluster, largely sited on land over 200m above sea level (Fig 13).

This cluster of prehistoric sites indicates a relatively dense occupation of this upland landscape from the Early Neolithic from about 3800 BC to well into the Bronze Age. Indeed a pattern of continual use of this wider landscape from Neolithic through to Bronze Age has already been noted (Foley 2000, figs 1.1, 1.2) The pottery found on site reflects this general continuity and indicates a Bronze Age presence in the area from the Beaker period to 1000 BC or later. There are questions about the possible contemporary usage of nearby tombs and this has implications for the 'parochial' nature of tombs in general with individual communities possibly building their own tombs in relatively close proximity to others. Pollen analysis (below and Appendix 5) indicates tree clearance in the Early Neolithic but little cultivation, which may imply largely pastoral activity at that time.

Geoarchaeological context

Ian Meighan

Geologically, the Creggandevesky court tomb comprises interesting and diverse lithologies, none of which poses a problem in terms of general sourcing. However, precise sourcing to specific outcrops or locations is another matter. The rock types will be considered under two major groupings, namely (1) igneous and (2) sedimentary.

1. Igneous rocks. The large stones of the tomb and the smaller ones of its cairn are mainly granitic and basic rocks (basalt/dolerite/gabbro); in the remaining parts of the cairn the two are in roughly equal proportions, ie red, white and dark lithologies. These rocks can all be sourced to the Lower Palaeozoic Tyrone Igneous Complex, being glacially transported fragments; this complex's gabbro constitutes the (unexposed) bedrock at Creggandevesky. Two jambs are of particular interest in that they appear to be ultramafic, ie a rock much richer in dark materials than gabbro. Their possible source is geologically important. The Tyrone Igneous Complex includes an association of mostly basic igneous rocks known as an ophiolite, ie a fragment of obducted (as opposed to subducted) oceanic lithosphere. Where well preserved in full vertical sequence, ophiolites display, in descending order, basalt lavas, dolerite dykes, gabbros and ultramafic rocks; however, in Tyrone the latter have not been observed. There is thus the fascinating possibility that Creggandevesky includes glacially transported blocks of the hitherto unseen

ultramafic component of the ophiolite. A stone axehead of porphyritic andesite found at Creggandevesky has been discussed elsewhere in this report (Lithics catalogue).

2. Sedimentary rocks. Fragments of thinly bedded sandstone contrast with the igneous rocks in that they are not glacial erratics; this lithology does not outcrop at or in the vicinity of Creggandevesky, so the material must have been transported there by the tomb builders (not implausible given the volume of sandstone involved). The sandstone is a somewhat fine-grained, feldspathic and micaceous variety; it may be from the Shanmaghery Sandstone Formation of Devonian Age (Dr W I Mitchell, GSNI, pers comm) in which case transport over only a few kilometres may have been involved. In thin section the rock is seen to comprise angular quartz grains, plagioclase feldspar, microcline feldspar and muscovite; it clearly represents an immature sediment derived from a granitic terrain.

   Finally, it must be noted that the rocks of Creggandevesky do include some white vein quartz (although this is not abundant). Its source is again glacially transported fragments, possibly from veins in the granites of the Tyrone Igneous Complex.

Palaeoecological context (based on Appendix 5)
A total of nine places were sampled for pollen (Fig 29). While the results from each location vary there is a general trend. The earliest pollen evidence suggests that before the tomb was built the area was wooded principally with hazel but with some alder and birch and a little oak, pine and willow. There were some open areas nearby with grasses and ferns. As the tree cover declined, probably by human action, plantain and other weeds appear. No cereal pollen was found but it can be difficult to distinguish this from grasses. Early Neolithic pottery and associated lithics were found in the spectrum related to the early decline in tree pollen. Later, at the interface with the growth of peat in Goddard site 1, there is a sharp fall in tree pollen, grasses and weeds and a rise in alder and heathy vegetation reflecting more acidic conditions, open landscape and peat formation. In contrast, Goddard's site 2 shows a more gradual rise in heath taxa. The development of iron pan within the mineral soil following tree clearance will have encouraged the growth of peat. The radiocarbon date (UB-2529) of 975±45 BP obtained for the start of peat at Site 1 seems between 1,300 and 2,000 years later than the date of peat initiation in the wider area: c 1000 BC at Ballynagilly (Pilcher & Smith 1979) and c 300 BC at Beaghmore (Pilcher 1969). This age determination, along with the abruptness of the transition, may signify the removal of a surface layer or its damage due to grazing or human activity. Cruickshank (Appendix 2) also noted the absence of an eluvial layer in the soil profile adjacent to the site. The use of land for agriculture above 200m OD in the fourth millennium BC is well documented (Waddell 2010, 29–30) and the relative density of court tombs with some portal tombs in this immediate area suggests a vibrant Early Neolithic community and strong continuity into the Bronze Age as evidenced by several local wedge tombs and complexes of stone circles. The attraction of this upland area of Tyrone for Neolithic settlers was due to the free-draining nature of the Gilbert type glacial delta (Ian Enlander, pers comm) and whatever mineral rich soils had developed on it by c 6,000 years ago, providing relatively easy grazing and tillage opportunities before the later development of hill peat. Extensive survey in Co Tyrone to examine pre-peat landscapes in the 1990s (Plunkett & Foley 2006; Michael MacDonagh, field reports in NISMR) found some evidence for enclosure in the way of collapsed stone walls but not enough to suggest extensive organisation of the landscape in this way, suggesting that pastoralism may have been the dominant practice in the region.

Dating
The radiocarbon dates (Appendix 3) obtained from charcoal at the primary levels for chambers 1 and 3 indicate broadly similar dates for probable single burial events sometime between the Early to Late Neolithic between 3850 and 3000 BC. Dates for the fill of two structural post-holes in chambers 1 and 3 ranging from 3700 to 3400 BC are slightly tighter in time within the Early to Middle Neolithic and may reflect the date range for the construction of the tomb. These dates accord generally with dates for other court tombs across Ireland, with some exceptions, although many of them are also from charcoal with its attendant uncertainties (Schulting *et al* 2012, fig 9). The absence of developed hollow scrapers and Late Neolithic pottery may indicate activity at this site in the earlier part of this date range (Eoin Grogan, pers comm).

Morphology
The morphology of Irish court tombs and their particular characteristics are well understood (de Valera 1960, 13; de Valera & Ó Nualláin 1961, xxi); a long cairn tending to trapezoidal with a straight-sided revetment; an orthostatically defined court varying in shape from full to shallow, circular to

oval or occasionally funnelled; and a burial gallery of two or more chambers, separated by jambs or jambs and sills, placed longitudinally within the cairn. That there is a recognised 'template' to which the design of all court tombs appears to conform to one degree or another indicates sophisticated intent and understanding of the engineering required as well as the imperative, driven by whatever reason, to continue this tradition across the whole distribution of such sites in Ireland. This tomb is one in a select group of 18 three-chambered tombs presently known (Cody 2002, 264–65) which occur mainly in south Ulster and north Connacht, with the nearest examples at Clady Haliday in north Tyrone (SMR Tyr 017:023; Davies & Radford 1936) and Cornacully in Fermanagh (SMR Ferm 209:005; Foley & McHugh 2014, 154–55, fig 47). A good parallel in terms of size and general shape (without the slightly deeper court and additional subsidiaries) is at Annaghmare in south Armagh (SMR Arm 027:007; Waterman 1965). As there are larger tombs with four chambers and also dual versions we might best see the three-chambered type as easing towards the larger tomb size from the more common two chambered module, and it may reflect available resources of manpower, status and/or anticipated need in a growing Neolithic population.

While the tomb was unimpressive, even somewhat ambiguous at the outset, the well-preserved architecture beneath the collapse, requiring only minor conservation, is instructive in the examination of such sites in the field. This is a classic court tomb with many of the expected characteristics but with better than average, well-preserved detail. The orientation towards the south-east is less common than the general range of the majority of single court tombs which face east-north-east (de Valera 1960, pls xxxv, xxxvi) and if orientation were a desire to face towards the rising sun, the choice of orientation may have been influenced by the time of year in which the place was chosen, perhaps mid-winter in this case.

The available structural material was largely gathered from local glacial deposits (Meighan, above); gabbro and dolerite boulders were split, spalled and used mainly for orthostatic construction; granite blocks, worked from glacial boulders were used for the lower layers of corbelling; sandstone slabs from the Shanmaghery Sandstone Formation, available from 3km to south-west, were used for the upper layers of corbelling and filling gaps at ground level between some orthostats as well as possibly covering some burial deposits. For cairn material, smaller fragments of granite and basic igneous rocks (gabbro/dolerite/basalt) were used in about equal quantities.

The trapezoidal cairn, at 18m long, is a little short of average for court tombs in general, for example Browndod (Ant 044:037; Evans & Davies 1935) at 25m or Ballymarlagh (Ant 038:022; Davies 1949) at 30m in Co Antrim, but others are over 50m in length, such as Creevykeel, Co Sligo (Hencken 1939) at 52m and Antynanam (SMR Ant 029:092), Co Antrim, at 60m is the longest so far recorded (Seán Ó Nualláin, pers comm). Cairn length probably reflects the amount of stone available from field clearance in the area, and may be a tillage indicator. The cairn neatly contains the three chambers with just 3m to spare before the back revetment. Apart from the removal at some distant time, of the gallery back stone and one adjacent orthostat to east and related cairn material, the tomb was not extensively robbed in the millennia since construction. The extensive collapse removed in excavation probably represented 90% of the original material and enables a conservative estimate for the original height of the cairn over chamber 1 of about 3m and considerably less at the north end. It is notable that the size of cairn stones diminished considerably towards the back end of the cairn (Fig 3), which perhaps reflects the order in which the cairn was constructed with the smaller stones deployed last.

The revetment

Once a court tomb was confirmed, a revetment was predictable but invisible at the outset, requiring careful clearing of fallen cairn stones by working inwards at right angles to the long sides. A carefully built drystone wall survived along both long sides and a single course of stone remained at the back. Some informality or slight failure of construction may be detected along the east revetment in a curve towards the back end. Overall however, it did its work of maintaining the loose cairn in place until time and weather intervened and it slipped away to an angle of repose of about 45 degrees, burying the lower part of the revetment at a maximum of 1.25m along the west side and 1.10m along the east side.

The revetment is clearly an important part of the structure in providing resistance to the cairn edge to prevent slippage, as the body of the cairn was used to counterweight the corbels over each chamber. It was also important in providing a formal, visually impressive definition to the monument and reflects care in the planning of the construction. It is estimated that the internal height of chamber 1 was about 2m, so the cairn over this would have been higher by as much as an estimated 1m, to judge from collapse, thus influencing the height of the revetment to hold it all in place. As

the cairn decreased in height from front to back the requirement for retention was less at the back end, perhaps accounting for the narrowing into the trapezoidal shape and also for the smaller grade of stone recorded in the cairn at the north end. While an orthostatic revetment would have provided optimal support, the scarcity of large enough boulders here, as illustrated by the compromises made in the court and chamber structures, made a drystone construction inevitable. Revetments have not been extensively studied and have received little excavation attention but they were probably an integral part of all court tomb constructions and many other drystone examples are known from excavations, for instance at Aghnaglack, Co Fermanagh (Davies 1939), and Audleystown, Co Down (Collins *et al* 1954). Clearly defined back revetments have been found among other places at Clady Haliday, Co Tyrone (Davies & Radford 1936), Tamnyrankin, Co Londonderry (Herring 1941; Flanagan 1990), and Browndod, Co Antrim (Evans & Davies 1935), providing good parallels for the terminus at Creggandevesky.

The court

The court at Creggandevesky is a little deeper than a half circle — the widest part at 7.50m diameter is 1.50m in from the mouth of the court and the symmetry of the court and façades is more precise than many other court tombs, for example Clady Haliday (SMR Tyr 017:023) or Mourne Park (SMR Down 055:022; Davies 1938), where one arm of the court may be asymmetrically extended or curve more tightly than the other. The overall design at Creggandevesky was well conceived and great control was exercised in its construction. The 'post-and-panel' design of the court (Pl 3) probably reflects the local scarcity of larger boulders. The decline in height of each arm towards the mouth of the court appears to be quite a common design feature (de Valera 1960, 17; Waterman 1965) and the small amount of collapse recorded in front of the east and west façades supports this.

The use of large 'flankers' and the carefully selected lintel to frame the gallery entrance is a pattern observed at court tombs in general (eg Bavan: Flanagan & Flanagan 1966, 21; Seán Ó Nualláin, pers comm). Difficulty in finding enough large boulders to use in construction meant having to double up in some cases to achieve the desired heights. For example, the eastern portal jamb (05) (Pl 4), one of the key architectural features, is actually composed of two stones. The disposition of collapsed stone in the court area was similar to that along the sides of the cairn. There was a gap in the stone material just in front of the entrance which could have been caused by relatively recent clearance with upcast of stone to south, as an iron animal trap was found directly under the lintel. The cairn otherwise sloped down at an angle of about 45 degrees from the underside of the lintel to the outer part of the court. There was no appreciable difference between the nature of the collapse here and that around the sides of the tomb to indicate that it had been deliberately placed as blocking. This contrasts with Annaghmare, where it was found that a blocking of horizontally placed flagstones was very different in character to the general nature of the cairn material (Waterman 1965, 11, fig 6a). However, the finding of sherds of beaker pottery and the remains of a minimum of eleven cremations scattered on top of and within the cairn material needs to be considered. Clearly the tomb was regarded as a suitable depository for these remains at one or more times in the Early Bronze Age. No formal burial structure was perceived in the way in which this cremated bone was deposited, but it was clearly focused on the area of the entrance lintel and within 2m of it. By contrast, a Bronze Age cairn was formally superimposed on the court tomb at Knockoneill, Co Londonderry (Flanagan 1980, 10), illustrating the continuing recognition of that burial site but re-forming it in a new way.

Roofing

The preservation of so much stone at or near its original position in the collapsed structure enables a good review of the roofing structure. The *in situ* entrance lintel is an important feature signalling the boundary between the interior and exterior. The rather inelegant portal jambs carry the nearly trapezoidal lintel in its original position and the engineering difficulties of levelling it were overcome by the insertion of a small chocking stone of dolerite under the interior edge at west (Pl 5). The only remaining measurable head height is the entrance-way which is 1.20m in height between the underside of the lintel and the lower edge of the sill, which would have required most people to stoop under to enter.

The original height of chamber 1 is estimated from the arrangement of corbels in the north-east corner of this chamber (Pl 8). Orthostat 015 is supplemented on top by a smaller boulder to a height of 1.10m. Above this three granite corbels are well bedded into the cairn behind and extend upwards at an angle of c 45 degrees. Projecting these upwards, and taking account of the space to be spanned, would indicate a possible central height for this chamber of about 2m.

Sandstone slabs were transported from at least 3km to the south-west, probably by a team of

hauliers and a system of slipes (Case 1969, 5; Evans 1978, 95, fig 47) and pre-split into slabs up to 1m in diameter and between 0.02m and 0.10m thick. The large quantity of sandstone slabs found in the upper levels of chamber 1 provides the clearest idea of the variety of uses of this material; they appear to have been used as a final layer of roofing to span this widest chamber and part of chamber 2 but they have also been found overlying layers with burial deposits. A group of apparently fallen slabs was found on edge in the western part of chamber 1 and others were found lying at various angles across the chamber, prompting the idea that they fell here in one episode of collapse. Lower down in chamber 1 smaller slabs were laid relatively horizontally over L24 and L25, which could be said to have sealed these burial layers. In chamber 2 there was only a small zone of such slabs towards the north end and they were well above the finds-bearing L19. As chamber 3 had been robbed of the backstone and an orthostat in the past, the upper fill of this chamber had already been reduced leaving a peat-bound hollow. The sandstone slabs which were found under this could have been a combination of roof collapse or covering for burials. Here the spread of sandstone slabs covered the entire chamber in many layers; some were cracked, either through later pressure from above or the effect of falling from a height and were covered and interleaved with a sandy orange L8/9 which was also found in chamber 1 and thought to be a possible sealing layer placed on and between them at roof level. Their use entirely as a sealing layer for burials has also to be considered, but quite a lot of rough stone lay beneath them in chamber 3, which would seem to rule out the careful covering of cremated remains.

The use of relatively thin slabs used in multiple layers as corbels ranging from 0.05m to 0.35m in thickness has also been recorded at Aillemore and Sralagagh, Co Mayo (de Valera & Ó Nualláin 1964, 10, 80), and it may be that at Creggandevesky, once the lower granite corbels were in place, the roofing was continued in this less robust but lighter slab material. The absence of many fallen granite corbels in the well-sealed chambers 1 and 2 would seem to suggest this and sandstone slabs may have proved easier to handle at height. The post-holes in the chamber floors (Fig 5) if not relict from pre-cairn activity (which is possible but not established), may be an indication of supports deployed in construction. The dating of fill from one post-hole each from chambers 1 and 3 (Appendix 3) implies general contemporaneity with the earliest burial deposits so they may be an indication of supports employed in construction. They were relatively slight averaging 0.10m in diameter and, while some are deep enough to have usefully supported horizontal beams or struts overhead, their depth varied from a robust 0.22m in chamber 3 (P25) to 0.03m in chamber 1 (P96). The deepest were in chambers 2 and 3 with the least deep in chamber 1, possibly indicating later truncation in this outer chamber. Perhaps surprisingly, timber construction supports do not appear to have been identified at other megalithic tombs in Ireland.

Great care was taken to fill the interstices between the lower edges of orthostats with smaller stones or stacks of sandstone slivers (Pl 9). This has been noted at other court tombs too, for instance at Annaghmare (Waterman 1965, pl IV) and Corracloona, Co Leitrim (Kilbride-Jones 1974, pl XLIX:1).

Disposition of burial deposits

Cremated bone from the site was extremely fragmented, leading to the general conclusion that much of it had been crushed or pulverised prior to deposition (Appendix 4). Remains of a minimum of 22 cremated individuals were recovered overall, divided between those found in the gallery and those found on top of and filtered through the cairn material near the entrance, as well as a deposit in the east portal jamb socket. The only human remains found at primary level in the gallery were in chamber 3, where 2g of very disintegrated cremated bone was recovered, apparently representing one individual of indeterminate sex. In chambers 1 and 2 the recovery of fine objects which are likely to have been grave goods indicates that there were probably inhumations at that level which have not survived the acidic soil conditions (Appendix 2). One pocket of cremated long bones in the socket of the eastern portal jamb (F72) was unusual and gave the impression of a dedication rather than a burial *per se*. Unless this were accidentally incorporated it would represent a cremation at primary level and should be counted cautiously as one extra to the Wilkinson count, bringing the overall minimum number of cremations to potentially 22. The finding of parts of a carinated pot (vessel 6) in the socket for the western portal jamb may echo the bone deposit in the eastern portal jamb socket as a dedication marking the building of the tomb. Cremated remains were recovered in the south-east corner of chamber 1 in L16, above the primary level accompanied by an Early Neolithic pot fragment (vessel 3), and the estimated number of individuals represented here is nine with one male, three female and five others where sex could not be determined. It seems that only a token representation of each individual was brought to the tomb from wherever the cremation(s) took place, echoing the fragmentary pottery remains on site. Cremation

evidence from 26 court tombs has been collated (Herity 1987, 111–15) and it is clear that the amount of bone recovered in many cases 'shows a divergence of attitudes' where mere spicules are present in some cases and considerable remains in others. In chamber 2, although there was no cremated bone recovered, a sherd of a Middle Neolithic bowl (vessel 10) and the fine chert arrowhead (921) were found in L16, indicating either a movement of these objects from the primary layer below or the possible former presence of one or more inhumations.

To sum up — a minimum of nine cremated individuals is accounted for above the primary levels in chamber 1, one at floor level in chamber 3 and a deposit of bone in the socket of the eastern portal jamb brings this total to 11. However, as former inhumations may be inferred from the presence of groups of grave goods accompanying dissolved inhumations at primary level, a phenomenon noted elsewhere particularly at Annaghmare and Audleystown (Herity 1987, 117–21), it is possible to suggest at least two inhumations in chamber 1, two in chamber 2 and three in chamber 3, a possible eight inhumations altogether — bringing the potential minimum number of burials of both rites to a possible 18 during the Early Neolithic period.

During the Beaker period (c 2450–2200 BC) the cremated remains of a minimum of eleven individuals were placed here; high up on the collapsed cairn in the general area of the lintel, one male, one female, one adolescent and one of indeterminate sex were identified; lower down within the loose cairn near the lintel were the scattered remains of three males, three females and one of indeterminate sex. These suggest that the tomb was re-used informally on one or more occasions by Early Bronze Age people long after the cairn had slipped into the court, blocking the burial gallery. These were associated with sherds of both fine and domestic beaker (Roche & Grogan below) and may indicate an Early Bronze Age community with possibly ancestral links to the site still recognising it as an appropriate burial place, a pattern increasingly noted elsewhere (Herity 1987, 153–54). There are now 28 court tombs in Ireland with recorded Early Bronze Age material (Katherine McCormack, pers comm).

Lithics

The flint assemblage from this site has been studied in detail within a wider study of the lithics of the Northern Ireland Neolithic (Nelis 2004). In addition the data structure report (Bell & Foley 2006) worked out a number of phases for the site within which the flint objects were further analysed (Sloan 2006). However, that phasing was not used for the present report. Flint was the dominant stone used for tool making and there was also much quartz both in lump and coarse flake form which would repay further study. One fine chert arrowhead found in the secondary burial level, L16, in chamber 2 was the only object of this stone. This arrowhead, the largest from the site, may have been brought or traded to the area and it has been noted that leaf arrowheads of chert are more common in the west of Ireland (Herity 1987, 146), chert being more available there.

The flint objects and flakes are, with the exception of those found in L14, generally fresh with little obvious wear. The nearest source of flint is high up on the face of Slieve Gallion (Collins 1966, 66) at the east end of the Sperrin range. However, as the flint on site is variable in colour, glacially derived flint may also have been used, although it is not common in Co Tyrone. Quartz is available locally as veins in the nearby granite hills of Cregganconroe and Scalp but as many of the larger pieces seem water-rolled these may also have been picked up in glacial deposits. It was found in abundance on site in rough and flaked form but only a handful of flakes exhibit possible secondary working.

The range of flint objects found in the chambers (Figs 15–17) was as expected for a court tomb. A group of flint objects associated with Early Neolithic carinated bowls from L14 (Fig 18) is of particular interest. It must be significant that a collection of nine, sometimes complex, flint tools was found here and that six of them exhibited considerable handling wear. They had the appearance of a tool-kit. This layer being right in front of the entrance to the tomb could be considered in several ways; it may have been created or added to by sweeping out the tomb from time to time, or it may be a special deposit dedicating the entrance to the tomb as a special threshold. It may also have been an area for a particular activity — perhaps preparation of certain materials associated with burial or other practices. The stone beads from chamber 1 are remarkable, with few parallels (O'Keeffe below), and probably accompanied an inhumation, though if they were deposited as a strung unit they were somewhat scattered between L 25 and L16 by later footfall or animal activity.

Pottery

Sherds of 46 pottery vessels dating from the Early and Middle Neolithic, Beaker period and Late Bronze Age have been identified (Roche & Grogan below) from the burial gallery, the court and beyond it and the area to the north of the tomb. The pottery was generally very fragmented and, while ploughing could explain this outside the tomb structure, the small numbers of sherds recovered

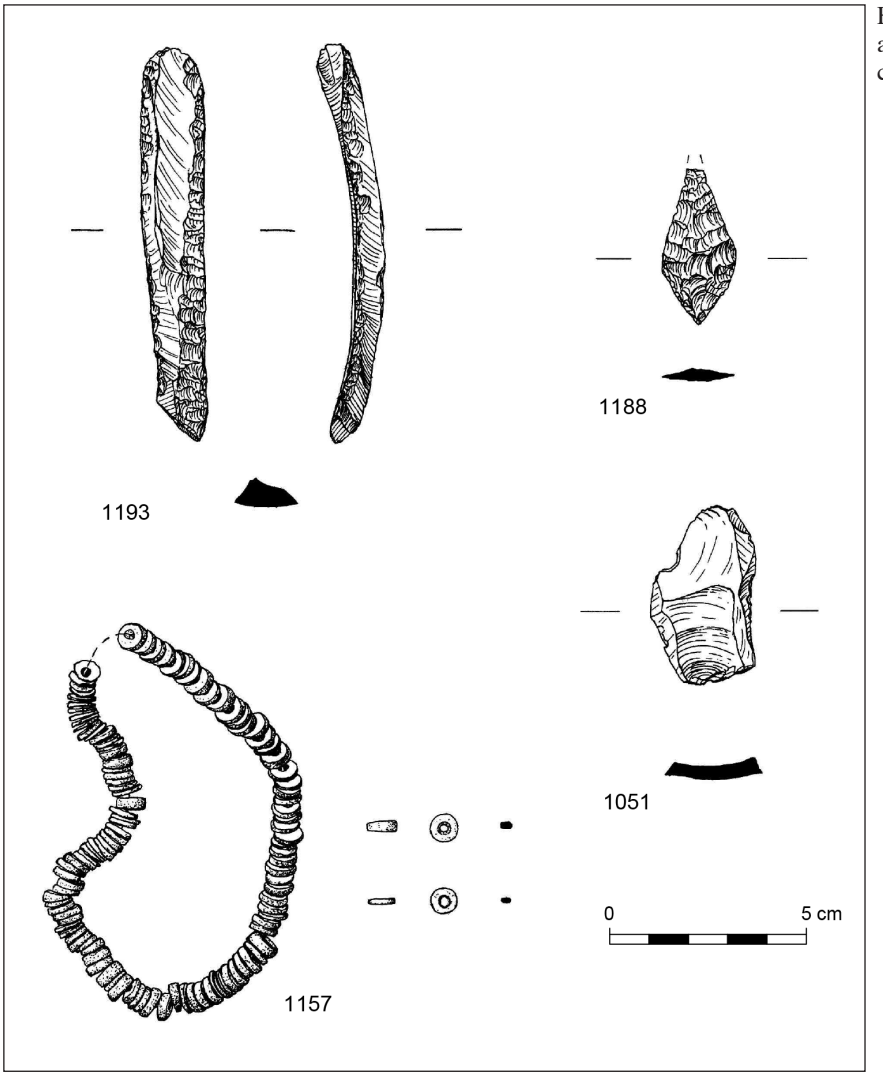


Fig 15 Objects found at primary level in chamber 1.

from the well-sealed gallery and court suggest that pots were deliberately broken before deposition. This is also noted for the beaker pottery found on the cairn collapse in the court. Most of the vessels were identified by relatively small groups of sherds representing only parts of each vessel, suggesting a holding back of parts or a token collection from, say, a habitation site, although the pottery report (Roche & Grogan below) noted the absence of sooting or burnt food residue, indicating that these pots had never been used domestically. The pottery manufacture suggests great skill in sourcing materials and suitable inclusions, and there is nothing in these to suggest that it was other than locally made, as already suggested in petrological and chemical analyses of other Neolithic pottery (Sheridan 1989, 126–29; 1991, 328–29). In general, the remains of vessels were found relatively close together. One anomaly is the finding of a single sherd of a Middle Neolithic bowl (vessel 10) placed beside a jamb between chambers 1 and 2, the remainder of which, in small fragments, was found to the north of the tomb. This separation is difficult to explain but its placement must be deliberate and illustrates that the tomb remained open until the Middle Neolithic. This sherd was from the same layer which produced the cremated bone in chamber 1, but there did seem to be some admixture between it and the primary layers, as some stray beads from the necklace were also found within it. Pottery found to the north of the tomb, although somewhat disturbed by ploughing, indicates Early Neolithic activity, probably associated with the building of the tomb. The presence of a small number of Middle

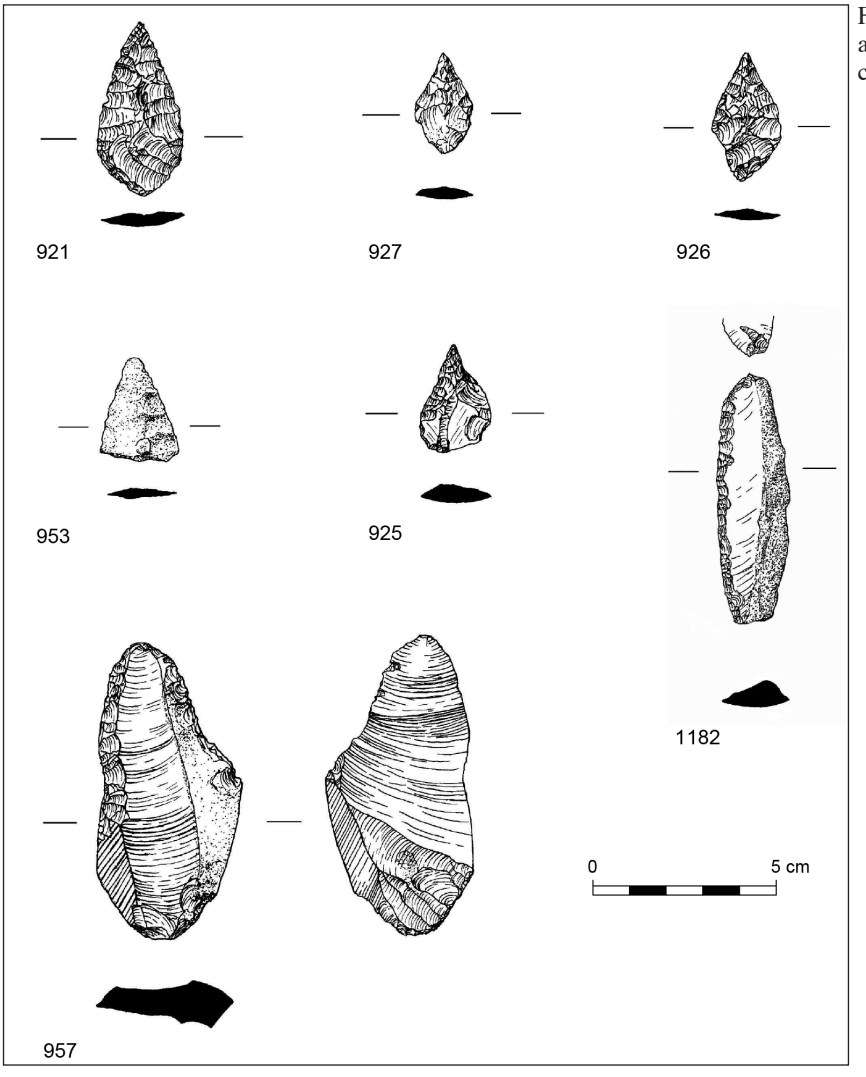


Fig 16 Objects found at primary level in chamber 2.

Neolithic bowls there suggests activity in the area of the tomb while it was still open, as evidenced by the single sherd in the gallery (above).

Activity within the court

The complex of features recorded in the court is difficult to interpret. The very few features cut into L28 in the court, which clearly pre-date the tomb, would not indicate a significant pre-cairn structure (Fig 6). Most of the features are cut into L13 on which the tomb appears to have been built, but whether they are contemporary with each other or successive is not easy to determine. F77 in front of the portal was a significant single feature at 0.32mm deep with a fill pattern indicating that it may have held a rectangular plank. F50 at the mouth of the court was the only other substantial feature at 0.32m deep. Apart from F53 at 0.15m deep and F55 at 0.26m the majority of dug features in the court area were either relatively shallow scoops or stake-holes with no clear patterns. The two charcoal spreads, F18 and F51, in the court are puzzling; they could be pyre detritus, although there were no cremated bone fragments or evidence for burnt earth below them. Within F51 were three parts of a burnt plano-convex knife (1107–1109) and some unburnt pottery sherds of an Early Neolithic carinated bowl (vessel 23) implying a mixed history.

Activity to north of the tomb

The cluster of both Neolithic and Bronze Age activity north of the tomb, trailing off to the east and south, is likely to be part of a wider occupation or activity area extending further to north and

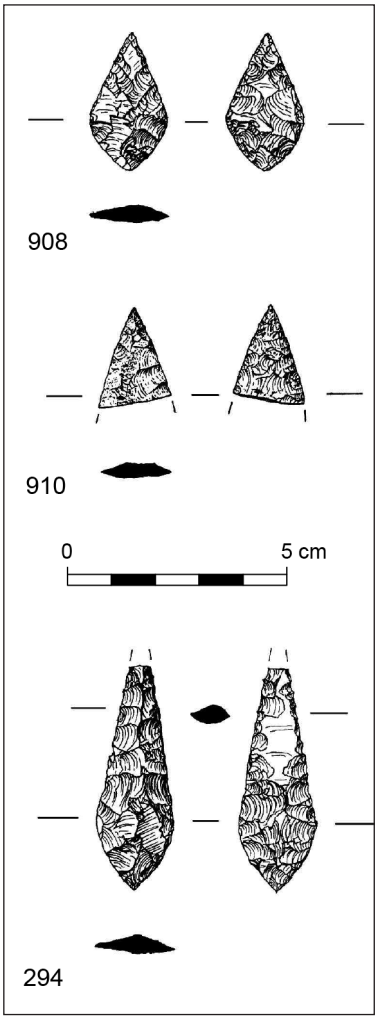


Fig 17 Objects found at primary level in chamber 3.

west of the excavated area. The term occupation can be loosely applied here to mean the presence of people participating in casual domestic or ritual activity from time to time and the preparation of flint and quartz tools either for domestic or funerary purposes. There is a suite of enigmatic features in the north-west area which includes a couple of small hearth 'bowls', without evidence of surrounding structures, which may have been used only once. The absence of substantial charcoal at these features suggests that it was washed or blown away in this exposed position. That this area was damaged by ploughing in at least two phases in the past provides an explanation for the probable truncation of certain features and the re-deposition of some small finds. The presence of Early and Middle Neolithic pottery here indicates some form of continuity of activity for at least 200 years.

Bronze Age activity is evidenced by the presence here of one rim sherd of a Late Bronze Age domestic pot (vessel 46) and some diminutive flint scrapers. The many fragments of a Late Bronze Age encrusted urn (vessel 44) could have been disturbed from a cist or pit burial and it may be part of a group with the barbed-and-tanged arrowhead and the decorated, siltstone spindle whorl. However, a spindle whorl of micaceous sandstone with very similar dimensions but undecorated was found with a flint hoard in the socket for an orthostat at Ballyalton court tomb (Evans & Davies, 1934, 101, fig V; Herity 1983, 206, fig 37.50) thus leaving the way open for a Neolithic date for the Creggandevesky example. The single sherd of Late Bronze Age pottery (vessel 46) north of the tomb could also be funerary and part of the same disturbance.

Conclusions

This fine tomb was barely recognisable as a court tomb at the outset. The intention to remove it in advance of land reclamation was happily abandoned by the owner when the well-preserved architectural features emerged. It represents the work and spiritual expression of a farming community following an architectural template already well- established elsewhere. The stone and pottery objects recovered indicate that the site was used for several hundred years in the Early and Middle Neolithic and after a gap of some thousand years was re-used in the Beaker period for informal burial. There may have been a cist burial in the hill to north. It is not an isolated site — many other court and portal tombs in the neighbourhood raise questions about their mutual contemporaneity and the organisation of working groups and ritual in those first farming communities in the area.

CATALOGUE OF STONE OBJECTS

Chert

921 (Fig 16) leaf-shaped arrowhead; length 47mm, width 22.9mm, thickness 3.2mm (max); extensive pressure flaking on both sides; north-west area of chamber 2, L16.

Flint

Chamber 1 (Fig 15)

1200 Flake (not illustrated); length 40.9mm, width 36mm, thickness 7.9mm (at bulb), max; with multi-directional flake scars on its dorsal face, suggesting that it is a product of the bifacial reduction of a larger implement; chamber 1, F69, socket for orthostats 015 and 016.

1188 Javelin-head; length 39.36mm, width 18.87mm, thickness 3.66mm (max); translucent, fawn-coloured; lozenge-shaped with one elongated truncated end and extensive pressure flaking on

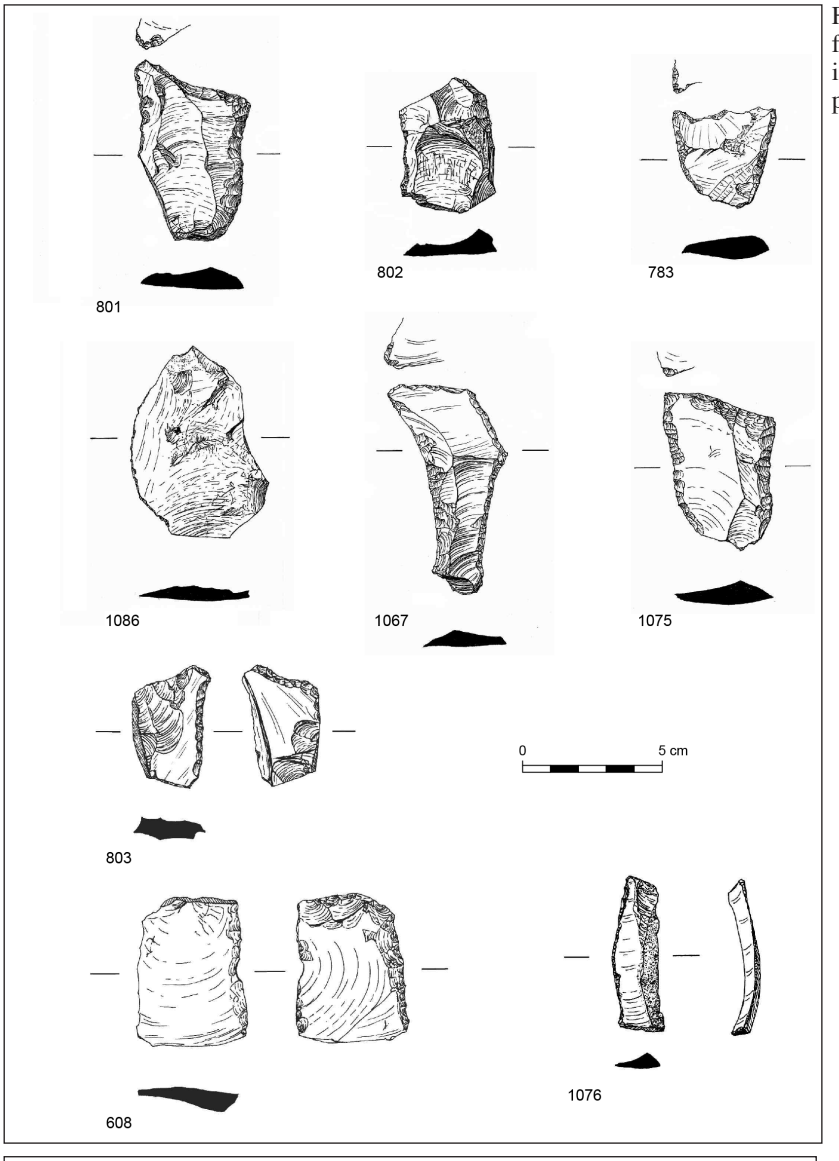


Fig 18 Flint objects found within layer 14 in front of the entrance portal.

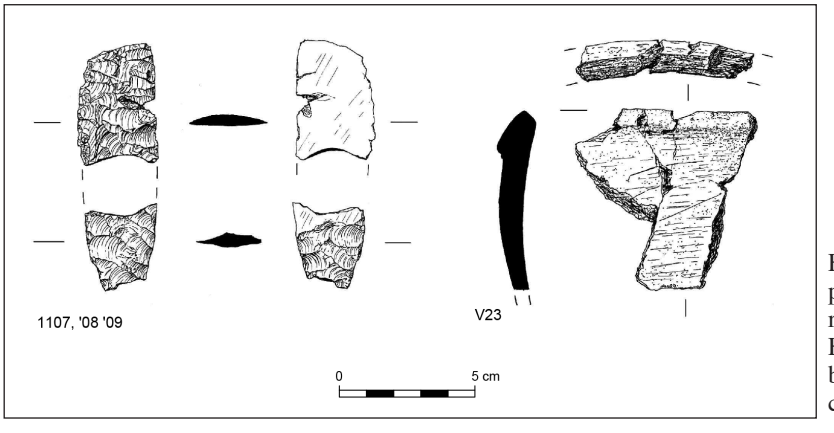


Fig 19 Broken and burnt plano-convex knife and rim of vessel 23, an Early Neolithic carinated bowl, found in F51, charcoal spread.

both sides; from western side of chamber 1, L24.

1193 Plano-convex knife; length 99mm, width 16.6mm, thickness 7.0mm (max); translucent, fawn-coloured; extensively worked along one edge of the dorsal side and tip broken; from chamber 1, L24.

1051 Scraper; length 44.2mm, width 26.1mm, thickness 4.0mm (max); translucent, fawn-coloured hollow scraper with a small degree of polish on the concave edge; from the north end of chamber 1, L16.

Chamber 2 (Fig 16)

925 Awl; length 28.8mm, width 21.68mm, thickness 4.9mm (max); translucent, fawn-coloured; pressure flaking along two edges towards tip, flat struck edge at base; L19 area of jambs between chambers 2 and 3.

1182 Knife; length 67.2mm, width 20mm, thickness 8.0mm (max); translucent, fawn-coloured; worked along one edge on the dorsal side and across one end; some cortex visible along the other edge on the dorsal side; from chamber 2, L16.

926 Leaf-shaped arrowhead; length 35.3mm, width 19.27mm, thickness 3.6 mm (max); translucent, fawn-coloured; bifacially worked and broken on one edge; north-west area of chamber 2, L19.

927 Leaf-shaped arrowhead; length 27.15mm, width 15.56mm, thickness 3.61 mm (max); heavily patinated; north-west area of chamber 2, L19.

953 Leaf- or lozenge-shaped arrowhead, pointed end, 50% broken, heavily patinated; length 27.41mm, width 21.68mm, thickness 3.5mm (max); south-west area of chamber 2, L19.

957 Scraper; length 80.7mm, width 38mm, thickness 11mm (max); translucent, fawn-coloured with retouch along 60% of one edge and tip and 25% of other edge running into cortex; considerable wear; south-west area of chamber 2, L19.

Chamber 3 (Fig 17)

294 Javelin-head, tip broken; length 50.76mm, width 17.9mm, thickness 4.5mm (max); translucent, grey; pressure flaking on both sides; L11, north-western area of chamber 3.

908 Leaf-shaped arrowhead; length 31.5mm, width 17.8mm, thickness 3.8mm (max); translucent, fawn-coloured; pressure flaking on both sides; L11, north-eastern area chamber 3.

910 Leaf- or lozenge-shaped arrowhead, pointed end, 50% broken; length, 21mm, width 16.8mm, thickness 3.7mm (max); heavily patinated; L11, north-western area of chamber 3.

Court area, Neolithic activity (Fig 18)

608 Blade, patinated; length 52.3mm, width 39.9mm, thickness 10.8mm (max); fawn-coloured; steep retouch along one dorsal side and minimal working along the other; all-over handling wear; quadrant 2, L14.

783 Blade, awl? broken; length 37.6mm, width 37mm, thickness 7.5mm (max); fawn-coloured; all-over handling wear; retouch on both laterals and shallow retouched point beside break; quadrant 2, L14.

1086 Blade/knife; length, 68.83mm, width 42.37mm, thickness 8.45 (at bulb); fawn-coloured; barely modified; finely worked curved edge; probably used as a cutting tool. quadrant 4, L14.

802 Flake; length 48.3mm, width 34.5mm, thickness 11.8mm (max); grey; fine working along right dorsal side; some handling wear; quadrant 2, L14.

801 Scraper/borer; length 65.5mm, width 42.6mm, thickness 10mm (max); grey; worked along all of right dorsal side and blunt point created by modifying top and left side dorsal face; quadrant 2, L14.

803 Scraper/borer, broken tip; length 43.6mm, width 26mm, thickness 9.3 mm (max); fawn-coloured; worked along left side of dorsal face and angled base of ventral side; quadrant 2, L14.

1075 Scraper; length 52.7mm, width 40.4mm, thickness 7.95mm (max); fawn-coloured; worked along lateral dorsal edges; one retouched point; all over handling wear; quadrant 4, L14.

1076 Scraper, curved blade; length 54.7mm, width 17.7mm, thickness 6.1mm (max); fawn-coloured; finely worked on one dorsal edge and ventral top edge; all-over handling wear; surviving cortex along one dorsal edge; quadrant 4, L14.

1067 Scraper/borer; length 10.6mm, width 31.6mm, thickness 5.5mm (max); fawn-coloured; worked along all dorsal edges; boring tip broken; all over handling wear; quadrant 4, L14.

1107/1108/1109 (Fig 19) Plano-convex knife in three fragments, portion missing; burnt; combined length 44.2mm, width 28.9mm, thickness 4.7mm (max); two (1108 and 1109) fit together; the third piece (1107) is from nearer the tip; court area, F51, charcoal spread.

Court area collapse, layer 7 (Fig 20)

126 Blade, knife; length 91.8mm, width 29.5mm, thickness 8.5mm (max); grey; fine working on one dorsal and one ventral side; court area, L7.

426 Blade/scraper; length 60mm, width 22mm, thickness 7.7mm (max; 3.9mm general); fawn-coloured, curved; some working on dorsal lateral most working on ventral one; court area, L7 under entrance lintel.

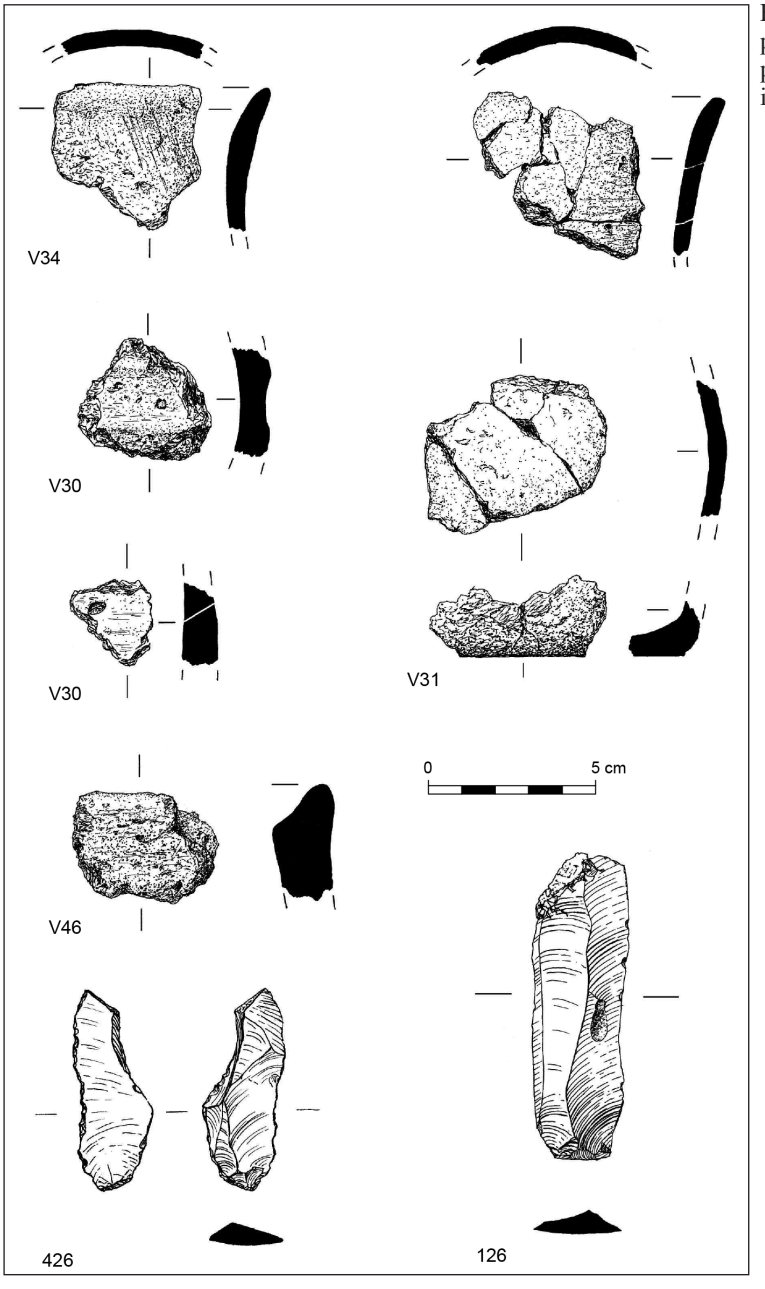


Fig 20 Flint objects, Beaker period and later Bronze Age pottery found on and in collapse in court area.

251 Flake/borer (not illustrated); length 35.3mm, width 20mm, thickness 10.5mm (max.); fawn-coloured; point created by trimming dorsal face; court area, L7.

North of the tomb, layer 6 (Fig 21)

508 Arrowhead (not illustrated); point only; length 19.3mm, width 16.7mm, thickness 4.5mm (max); burnt; finely worked all over on dorsal side; quadrant 3, L6.

539 Barbed and tanged arrowhead; length 28.5mm, width 22.4mm, thickness 4.1mm (max); opaque, pale grey, bifacially worked; quadrant 3, surface of L6.

174 End scraper, broken; length 24.6mm, width 26.2mm, thickness 5.6mm; grey; curved edge worked; similar to 310; quadrant 3, L6.

310 End scraper (Fig 22); length 48.7mm, width

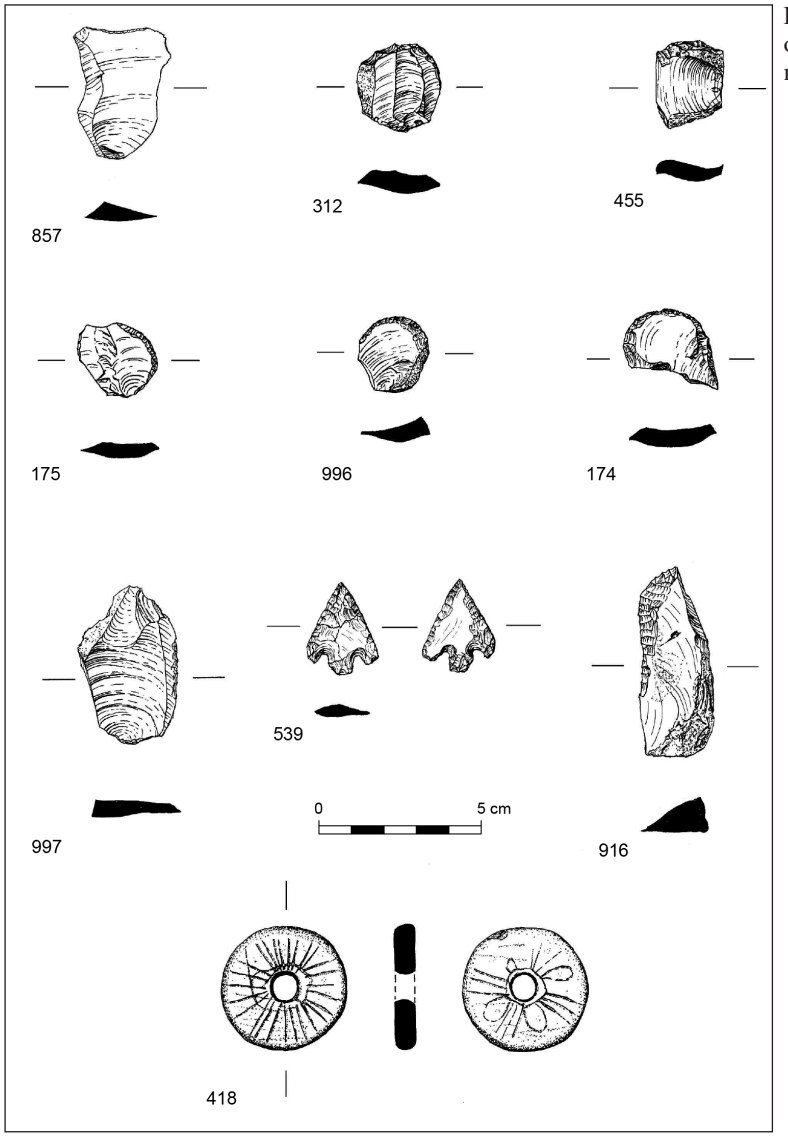


Fig 21 Selection of stone objects found in layer 6 to north of tomb.

24mm, thickness 5.1mm (max); opaque fawn-coloured, formed with steep retouch on the distal end of a long trapezoidal blade; quadrant 1, L6.

196 Flake, broken (not illustrated); length 26.7mm, width 26.3mm, thickness 6.8mm (at bulb; max); slight working along the edges on both the dorsal and ventral sides but main working end missing; quadrant 3, L6.

916 Knife; length 59.3mm, width 22.5mm, thickness 12.65mm (max); opaque grey; thick triangular sectioned flake; worked along lateral thin edge on the dorsal side; quadrant 1, L6.

857 Scraper; length 40mm, width 28mm, thickness 5.6mm (max); opaque grey; finely worked slightly concave edge; quadrant 1, L 6/12.

997 Scraper, some remaining cortex; length 48.5mm, width 31.5mm, thickness 4.5mm (max); grey, with worked edge; curved edge on dorsal side lightly worked; from quadrant 1, L6.

175 Scraper; length 25.2mm, width 22.4mm, thickness 5.0mm; small flake; finely worked along curved edge; quadrant 3, L6.

455 Scraper, unfinished; length 5.7mm, width 20.4mm, thickness 7mm (max); fawn-coloured; trapezoidal in profile, with incomplete retouch; surviving cortex on parts of the dorsal face; from quadrant 3, L6.

996 Thumbnail scraper; length 24.5mm, width 20.9mm, thickness 5.9mm (max); fawn-coloured; finely worked along curved edge some cortex is

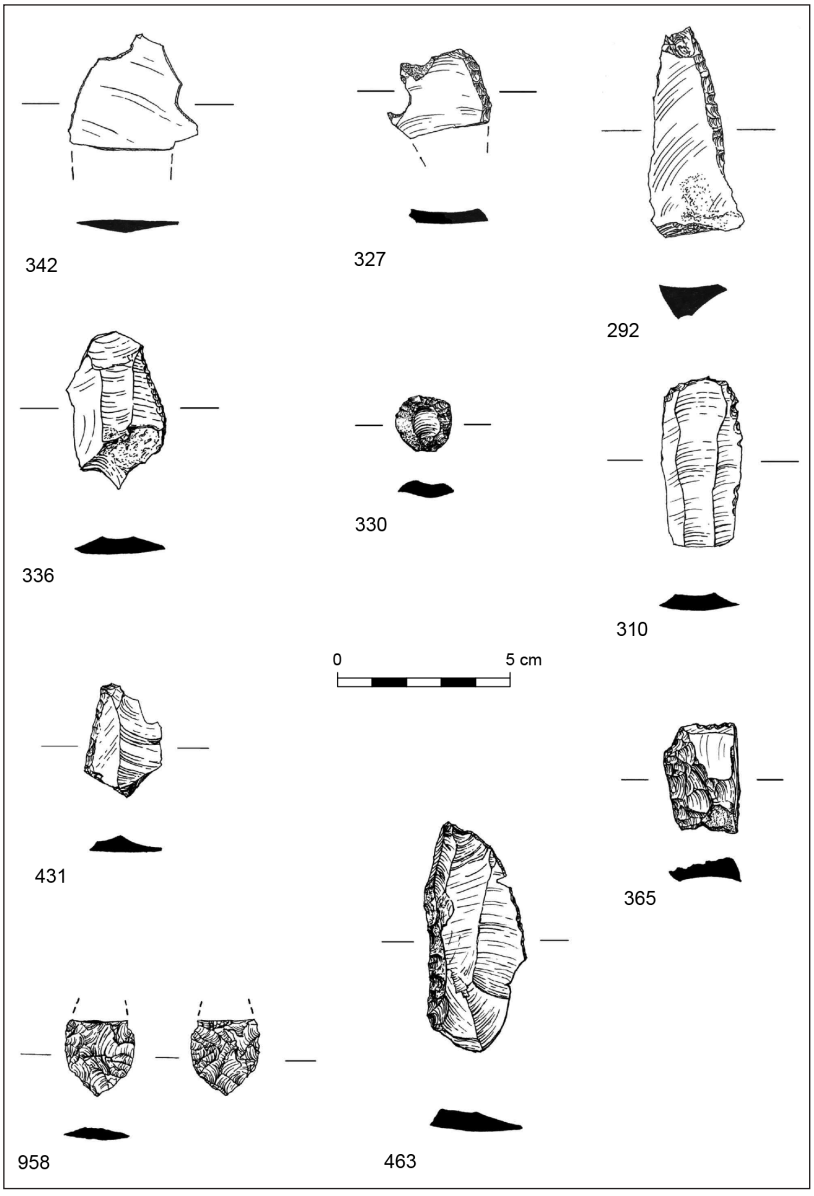


Fig 22 Selection of stone objects found in layer 4 in all parts of the site.

visible along one edge on the dorsal side; from quadrant 3, L6.

312 Thumbnail scraper; length 26.7mm, width 25.45mm, thickness 6.58mm; grey, coarsely worked along curved edge; some remaining cortex quadrant 3, L6.

Layer 4, north and south of the tomb (Fig 22)

17 Scraper? Broken (not illustrated); length 20.3mm, width 13.4mm, thickness 5mm (max); grey, with slight retouch along curved edge; L4, north-western area of quadrant 3.

336 Scraper, traces of cortex remain on the dorsal and ventral sides; length 44.8mm, width 28.2mm, thickness 7.6mm (max); grey; steep retouch on curved edge, slight retouch on one side; L4 western area of quadrant 3.

330 Thumbnail scraper, surviving cortex; length 16.7mm, width 16.5mm, thickness 5.5mm (max); fawn-coloured, retouched on two edges; L4, north-western area of quadrant 3.

342 Blade, broken; length 33.3mm, width 37.61mm, thickness 3.6mm (max); thin, fawn-coloured with minimal retouch along curved edge; L4, south-eastern corner of quadrant 1.

327 End scraper, broken; length 30.1mm, width

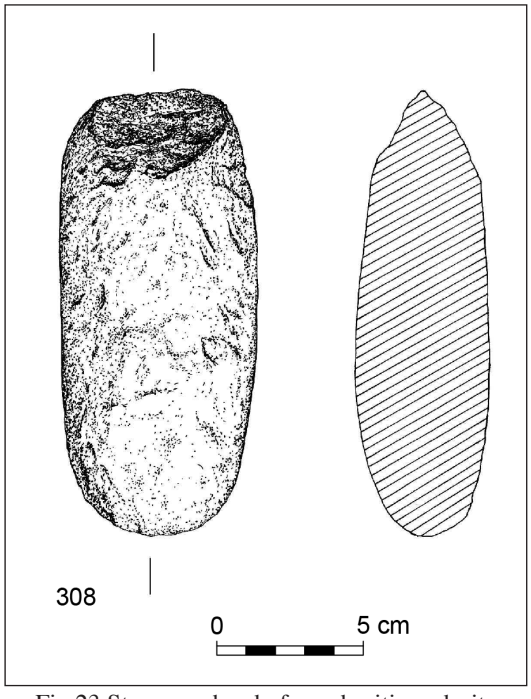


Fig 23 Stone axe head of porphyritic andesite found lying on top of the eastern side of the cairn.

22.3mm, thickness 5.2mm; pale grey; steeply retouched along one edge; L4, south-eastern area of quadrant 1.

292 Scraper, damaged tip; length 59.31mm, width 27.76mm, thickness 10.19mm (max); grey, with extensive alternating retouch along both laterals with cortex along one edge; base of L4 northern area of quadrant 1.

1170 Adze? (not illustrated); length 59.13mm, width 31.57mm, thickness 19.55mm (max); fawn-coloured; steeply sloping surface; damaged thin edge slightly retouched on dorsal side; wear polish on ventral side; quadrant 4, L4.

365 Flake, broken; length 31.7mm, width 21.1mm, thickness 7.04mm (max); translucent fawn-coloured; some retouch along one dorsal edge; some remaining cortex; quadrant 4, L4.

431 Flake, broken; length 33.5mm, width 22mm, thickness 4.9mm (max); mottled, opaque grey flint with retouching along the edge on one dorsal edge; quadrant 2, L4.

463/523/939 Flake, 2 fragments, heavily burnt; combined length 35.4mm, width 27.9mm, thickness 2.9mm (max); from quadrant 4, L4 (939);

958 Leaf-shaped arrowhead (not illustrated), base fragment, broken about 50%; Length 21.4mm, Width 19.4mm, thickness 3.0mm (max); translucent, fawn-coloured; extensive bifacial pressure flaking; from quadrant 2, L4.

419 Scraper, broken; length 48.4mm, width 37.9mm, thickness 5.5mm (max); grey; retouched along straight dorsal edge; L4 quadrant 2.

Siltstone

418 (Fig 21) Spindle whorl, some wear and slight damage, crudely decorated; 38mm diameter, 6.5mm thick; central perforation 9mm across; casual decoration; side one — four, scratched, unequal lobes with three scored radial lines in between and an irregular outline of the central perforation; side two — closely spaced, scored radial lines overlain by a scratched, irregular outline of the central perforation; quadrant 3 L6.

'Porphyrite' (porphyritic andesite)

John Preston (1980)
with additions by Ian Meighan

308 (Fig 23) Stone axe head of porphyritic andesite, damaged cutting edge; 15.04cm long, 6.6cm wide and 2.7cm thick. Found in topsoil on the eastern part of cairn. This is a fine-grained, porphyritic igneous rock of intermediate composition. Phenocrysts (larger early formed crystals) 1–2mm in size comprise plagioclase feldspar, soda-rich variety but altered to sericite and epidote and hornblende associated with chlorite (the hornblende may be an alteration product of pyroxene). Groundmass is mostly plagioclase laths and sericite flakes with the latter in parallel alignment. The whole rock is traversed by thin crushed veins of calcite, quartz and epidote. Precise sourcing is impossible but the axe lithology could have been derived from the Tyrone Igneous Complex of Lower Palaeozoic age exposed west of Cookstown. The source of this fine-grained igneous rock is either a lava flow or a dyke intrusion.

Hornfels(?) (Fig 15)

John D J O'Keeffe

A total of 128 stone beads (1157 etc) (Fig 15) were recovered and all of these perhaps originally formed a single necklace which was broken in antiquity. The beads were found in a dense scatter covering an area of 1m^2 along the east side of chamber 1. Twelve other beads identical to those of the necklace were found close to the area of the dense bead scatter.

All of the beads appear to be of the same rock type, a grey schistose stone with a fine slatey cleavage. Morphologically all of the beads are very similar. Most are of about 7mm maximum

diameter; the largest is approximately 8.5mm, whilst the smallest is about 5.5–6mm. They have central perforations, usually conical or biconical in shape. Most are simple disc beads, although some were cut with occasionally quite oblique surfaces. This may have had some relevance to stringing the beads, but it seems more likely in this case that this is the way the stone split when the beads were being made. Although the rock type used has a fine cleavage surface, these examples show additional wear on their surfaces, perhaps because of their method of manufacture, but more probably because they rubbed against each other when strung. Traces of a polish can be observed around the edges of the beads.

Although we are fortunate in having some implements from the Neolithic toolkit to examine today, we do not necessarily have a true overall picture of their precise uses, nor do we really know what organic elements are missing from the assemblage. There are many instances where this 'blind-spot' is apparent, and stone beads provide a useful topic of study to demonstrate this (O'Keeffe 1995).

Although all of the beads here were deliberately perforated, the method is not clear. The beads are remarkably uniform in size and have very equal diameters but the diameters of the perforations are irregular. It is possible that some form of bow-drill was used; evidence of regular striations such as those made by a drill may be observed within the perforations in some cases. It is therefore possible that the beads were perforated in rod form before being split into individual beads. Given the hardness of the stone used, a stone point, most probably of flint, quartz or quartzite would be needed to make such a perforation. Either a point on its own or mounted on some kind of shaft or handle may have been used if a hand-drill was used to perforate the beads. If a bow-drill was used, a shaft securely mounted with a tip perhaps of flint or rock crystal would be needed. Alternatively, a bone bow-drill, such as that allegedly used in prehistory in China may have been used (Mike Baillie, pers comm). If this were the case, a piece of bone, usually a leg bone from a bird, would have be used, with fine sand being used as an abrasive. This method is also supposed to create conical perforations.

These beads compare well with other stone beads of Neolithic date recovered in Ireland (O'Keeffe 1995). Disc beads of very similar shape have been found in several domestic contexts; beads (though of chlorite schist) have been recovered at Donegore, Co Antrim, and Portstewart, Co Londonderry; at Ballygalley, Co Antrim, two disc beads of a very fine-grained slate were recovered (Simpson 1995).

Q1	L4	17 pieces	46.36g
	L6	8 pieces	7.29g
Q2	L3	2 pieces	12.2g
	L4	2 pieces	6.11g
	L6	10 pieces	19.50g
	L7	2 pieces	16.06g
Q3	L3	1 piece	2.77g
	L4	69 pieces	65.84g
	L6	113 pieces	184.89g
	L12	3 pieces	3.34g
	L17 (C3)	2 pieces	7.69g
Q4	L4	7 pieces	6.08g
	L7	I piece	.79g
	L10	1 piece	2.87g
	L14	1 piece	6.53g

Table 9 Waste flint material from all parts of the site.

Q1	L4	7 pieces	3.75g
	L6	13 pieces	241.83g
	L12	3 pieces	69.27g
Other		97 pieces	1,867.91g
Q2	L4	13 pieces	32.2g
	L6	2 pieces	8.01g
	L10	3 pieces	118.5g
	Other	5 pieces	104.51g
Q3	L4	103 pieces	162.74g
Layer 6		59 pieces	631.66g (one weighs 149.1g)
	L12	7 pieces	88.18g
	Other	38 pieces	359.01g
Q4	L4	29 pieces	104.25g
	L13	1 piece	7.05g
	L14	9 pieces	77.69g
	Other	2 pieces	32.9g
C1	L16	3 pieces	12.69g
	L24	11 pieces	95.33g
	L25	11 pieces	147.43g
C3	L11	1 piece	3.98g
	L17	1 piece	4.5g

Table 10 Quartz waste material from all parts of the site.

These are morphologically similar to those from Creggandevesky being roughly of the same shape, size and perforation method. The Ballygalley beads have not been sourced and although a detailed analysis of the mineralogy of the beads has not been carried out, it is possible that the examples from Creggandevesky and Ballygalley may have originated from the same place. If the beads from

Creggandevesky are of Dalriadan schist, then the raw materials for the beads could have come from the Tyrone/Donegal region. However, if they are of the same material as the slate beads from Ballygalley, then the closest suggested source for this rock type is in Valencia in the south-west of Ireland.

Flint waste material (Table 9)
Waste flakes and lumps of flint were found principally in Q3 in L6 and L4. This strongly suggests tool making in this area. The lack of cores highlighted by Eimear Nelis (2004) supports the possibility that the activity north of the tomb was only partially explored and occupation activity may have extended further north and west.

Quartz waste material (Table 10)
There were 108 pieces of quartz, found mainly in quadrants 1 and 3 north of the tomb, ranging from large lumps to finer flakes. While there were no certain tools identified this assemblage may repay further study.

POTTERY CATALOGUE AND REPORT

Helen Roche and Eoin Grogan

Methodology
The individual sherds were visually examined using a hand-held magnifier. Where one sherd has been assigned a single master number, using the numbers applied during the excavation, the number of sub-sherds is indicated by the inclusion of a colon followed by the sherd number (eg 485:1–4). Sherd numbers incorporating a forward slash indicate joining sherds, eg 475/911. The colour reference refers to the outer surface/core/inner surface, eg orange/grey/black. The thickness refers to an average dimension; where relevant a thickness range is indicated. Vessel numbers have been allocated to pottery where some estimation of the form of the pot is possible, or where the detailed evidence of featured sherds (eg rims, shoulders) or the fabric indicates separate vessels.

Catalogue
Chamber 1: Early Neolithic carinated bowls.
Vessel 1: chamber 1, L25 (Fig 24).
Represented by a large portion of a rim/neck/shoulder sherd no 1150:12 and a neck/shoulder/body sherd 1150:13, as well as 4 rim sherds 1080:1, 1150:1–2 and no 1; 7 neck sherds 1080:2–6, 1134:1, 1150:3; 8 shoulder sherds 1080:7–8, 1082:1–3, 1135:1, 1148:1, 1150:4; 21 body sherds 1081:1–5, 1082:4–6, 1135:2, 1147:1–5, 1150:5–11, and 33 fragments 1082:7, 1148:2, 1201:1–3 and no 2.
Gently out-turned rounded rim. The shoulder is gently angled but in places it is rounded. Well-executed hard fabric with a high content of quartzite inclusions (≤ 4.9mm). The sherds are slightly weathered with few inclusions visible on the burnished exterior surface. Colour: mainly black throughout, sometimes with a brown core and interior surface. Thickness: 4.2–6.2mm. Neck height: 62.4mm. Shoulder diameter: ≤ 270mm. Weight: 343g.

Vessel 2: chamber 1, L25 (Fig 24).
A small bowl represented by a large portion of a rim/neck/shoulder sherd 1201:4, as well as 2 rim sherds 1150:14–15; 1 neck sherd 1150:18; 2 shoulder sherds 1150:16–17; 11 body sherds 1147:6–7, 1150:19–26 and 31 fragments 1147:8–10. Flat rim, sometimes with a slight lip on the interior surface. A straight upright neck and a somewhat carelessly formed shoulder, sometimes angular, sometimes rounded. Hard friable fabric with a medium to high content of quartzite inclusions (≤ 3.6mm). Slight evidence for burnishing especially on the neck where there are also horizontal striations or wipe marks. Similar to Vessel 1, few inclusions are visible on the slightly weathered exterior surface. Colour: buff-black/black/black-brown. Thickness: 8.5–9.2mm. Neck height: 44.3mm. Rim diameter: 130mm. Weight: 335g.

Vessel 3: chamber 1, L16, L24, L25 (Fig 24).
Represented by a single neck sherd 1158:3; one shoulder sherd 1158:4 and 6 body sherds 1081:7, 1158:5–8, 1183:1. Gentle angled shoulder. Thin-walled, fine, well-executed fabric with a medium to high content of quartzite inclusions (≤ 2.7mm). The smoothed exterior surface is slightly weathered. Colour: dark orange-brown/black/brown. Thickness: 6.0–7.1mm. Weight: 52g.

Vessel 4: chamber 1, L25.
Represented by a single fragment 1150:28. Hard, well-fired fabric with a medium content of quartzite inclusions (≤ 5.3mm). Little survives of the weathered exterior surface. Colour: orange/black/black-brown. Thickness: 7.8mm. Weight: 3g.

Vessel 5: probably chamber 1.
Represented by two shoulder sherds 3–4 and four fragments 5–8; these possibly represent two vessels. Gently angled shoulder, one area is pinched down with fingernails. Hard friable fabric with a low content of quartzite inclusions (≤ 2.5mm). The smooth exterior surface is slightly weathered. Colour: buff—brown/black/black. Thickness: 8.0–7.2mm. Weight: 13g.

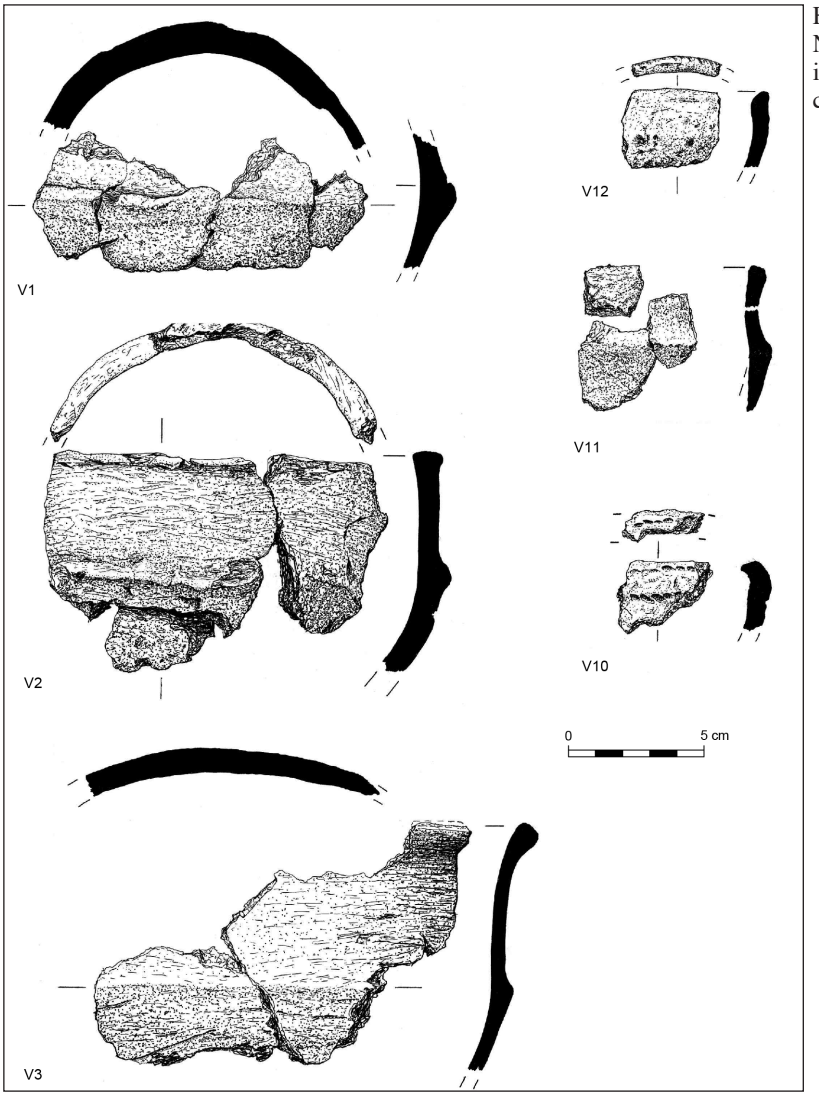


Fig 24 Selection of Neolithic pottery found in the burial gallery, chambers 1, 2 and 3.

Vessel 6: chamber 1, L25, F 74,
socket of west portal jamb.
Represented by 2 body sherds 1202:1–2 and 5 fragments 1202:3–7. Thin-walled, hard brittle fabric with a medium to high content of quartzite inclusions (≤ 3.9mm). The smoothed exterior surface is slightly weathered. Colour: black/orange-brown/orange. Thickness: 4.7–6.2mm. Weight: 7g.

Vessel 7: chamber 1, L16.
Represented by 2 shoulder fragments 1158:1–2. Hard friable fabric with a medium content of quartzite inclusions (≤ 2.8mm). The smoothed exterior surface is slightly weathered. Colour: orange/dark grey/brown. Thickness: 6.9–7.1mm. Weight: 8g.

Vessel 8: chamber 1, L25,
between jambs to chamber 2.
Represented by a single rim sherd 1149:1 and 2 body sherds 1149:2–3. Everted, flat rim with gently curved neck. Hard compact, well-executed fabric with a medium to high content of quartzite inclusions (≤ 4.3mm). The smoothed exterior surface is slightly weathered and few inclusions are visible on the exterior surface. Colour: orange/dark brown/orange-brown. Thickness: 6.1–7.1mm. Weight: 15g.

Chamber 1: Early Neolithic cup.
Vessel 9: chamber 1, L25.
Represented by a single rim sherd 1150:27. Flat rim which curves gently down to the body. Hard, well-

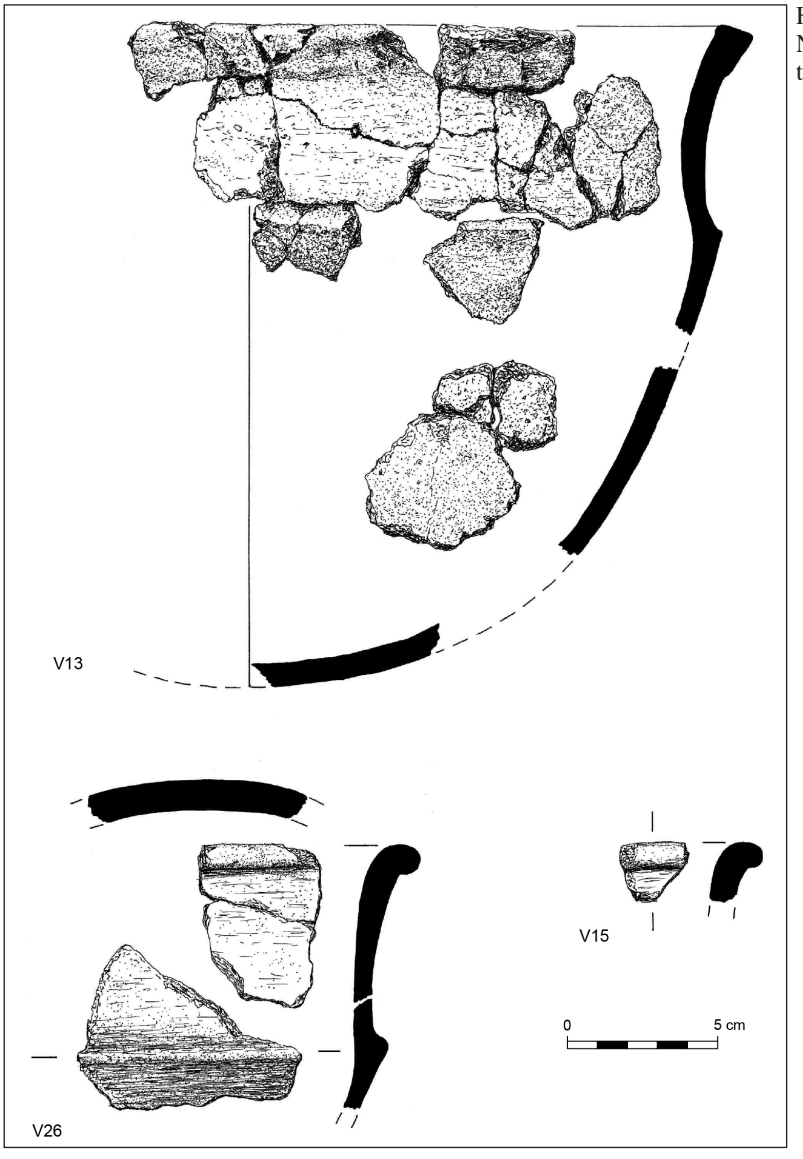


Fig 25 Selection of Early Neolithic vessels found in the court area.

executed fabric with a high content of quartzite inclusions (≤ 5.6mm). The originally smoothed exterior surface is slightly weathered and inclusions are visible on both surfaces. Colour: dark brown-black throughout. Thickness: 7.8mm. Weight: 8g.

Chambers 1 and 2: Middle Neolithic globular bowl.
Vessel 10: Chambers 1 and 2, jamb area, L16 (Fig 24); also quadrant 3, L12.

Represented by rim sherd 1173:1 and 22 fragments 1059:1. (The fragments were found north of the tomb, quadrant 3 but are very probably part of the same vessel. They are friable and may have been burnt.) Flat rim with an internal lip, the edge of which is missing. Hard compact fabric with a low to medium content of inclusions (≤ 2.7mm). The smoothed exterior surface is somewhat uneven and weathered. Surviving evidence for decoration consists of two horizontal rows of twisted cord impressions on the exterior surface and a single row of twisted cord impressions around the circumference of the flat rim. Colour: brown/grey-brown/brown. Thickness: 8.3mm. Weight: 21g.

Chamber 2: Early Neolithic carinated bowl.
Vessel 11: chamber 2, L16, L19 (Fig 24).
Represented by 2 shoulder sherds 964, 965, 3 body sherds 930, 954, 963 and 2 fragments 929, 931.

Sharp, angled shoulder. Hard, brittle fabric with a medium to high content of quartzite inclusions (≤ 2.6mm). The sherds are weathered with inclusions visible on both surfaces. Colour: orange/brown/orange-brown. Thickness: 5.2–7.1mm. Neck height: 44.3mm. Rim diameter: 130mm. Weight: 31g.

Chamber 3: Early Neolithic uncarinated bowl.
Vessel 12: chamber 3, L8/9 and L11 (Fig 24); and court.

Represented by 5 rim sherds 475/911, 521, 901, 903, 923; 12 body sherds 301:2, 314:1, 520, 524b:1, 524c:2, 902, 904, 905, 907, 924, 928, 950:1, 30 fragments 301:1, 3–10, 314:2–3, 384, 519, 524 and:5–6, 525, 900:1–3, 909, 912, 920:1–4, 950:2 and 2 crumbs 524e, f:3–4. Small uncarinated bowl. Slightly in-turned rounded rim, somewhat carelessly executed. Hard friable fabric with a high content of quartzite inclusions (≤ 6.4mm). The surfaces are abraded and inclusions and small cavities are visible on the originally smooth exterior surface. Colour: orange/black/orange-brown. Thickness: 5.2–6.1mm. Rim diameter: 120mm. Weight: 78g.

Fragments from Early Neolithic carinated bowls found in chamber 3, L17 but too small or indistinct to be assigned to particular vessels.
A fragment 824:1 and a crumb 824:2 (weight: 1g).

Early Neolithic carinated bowls.
Vessel 13: court, quadrant 4, L14 (Fig 25).
Represented by a large portion of a rim/neck/shoulder sherd; 12 rim sherds, 6 rim fragments; 8 neck sherds, 15 shoulder sherds, 79 body sherds, 276 fragments and 59 crumbs (247–48, 1089, 1091–92, 1110, 1112, 1114, 1116–17, 1120). Out-turned flat rim, in areas the clay forming the rim is pressed back against the exterior surface forming a pleat or an obvious join. The neck is curved with a gently stepped shoulder. Good quality, well executed pot. Hard compact fabric with a high content of quartzite inclusions (≤ 4.7mm). The smooth surface is somewhat abraded, inclusions are visible creating an oatmeal effect. Colour: black throughout. Thickness: 6.2–8.2mm. Rim diameter: c 300mm. Weight: 912g.

Vessel 14: found with vessel 13, quadrant 4 L14.
Represented by 154 crumbs (no number allocated). Friable fabric with a medium content of quartzite inclusions (≤ 3.1mm). Colour: brown/brown-black/brown. Thickness: 8.5–9.2mm. Weight: 24g.

Vessel 15: court, L13 (Fig 25)
Represented by 2 rim sherds 944, 946:1 and 2 body sherds 946:2, 1171. Rolled rounded rim. Hard, compact good quality fabric with a medium content of quartzite inclusions (≤ 2.7mm). The burnished exterior surface is slightly weathered. Colour: brown—black/brown. Thickness: 8.1–9.5mm. Weight: 21g.

Vessel 16: court: L4, L7, L13.
Represented by a single rim sherd 1122:1; 109 fragments 235; 868:1, 879, 881, 1122:2–27, 1169; and 19 crumbs 884–90. Out-turned pointed rim. Hard, compact, somewhat brittle fabric with a low to medium content of quartzite inclusions (≤ 3.7mm). The smooth exterior surface is somewhat abraded and small cavities are present. Colour: orange-brown/black/black. Thickness: 6.8–7.7mm. Weight: 100g.

Vessel 17: court, quadrant 4, L10.
Represented by a single body sherd 1065. Hard, compact brittle fabric with a low to medium content of quartzite inclusions (≤ 3.3mm). The smooth exterior surface is slightly abraded. Colour: buff/black/buff. Thickness: 7.9mm. Weight: 5g.

Vessel 18: court, L14.
Represented by a single body sherd 1121 and one fragment 1058. Friable, gritty fabric with a high content of quartzite inclusions (≤ 3.5mm). Both surfaces are abraded and inclusions protrude through the surface. Colour: buff/grey-brown/buff-brown. Thickness: 7.3mm. Weight: 9g.

Vessel 19: court, quadrant 2, L7, cairn collapse.
Represented by rim fragment 240:1 Out-turned flattened rim. Hard compact, well executed fabric with a medium content of quartzite inclusions (≤ 3.4mm). The surviving exterior surface is smooth and probably burnished. Colour: dark orange/grey/dark orange. Thickness: 8.7mm. Weight: 2g.

Vessel 20: quadrant 2, in front of west façade, L6.
Represented by 6 fragments 355:1–3; 357–58, 360. Thin-walled, hard brittle fabric with a medium to high content of quartzite inclusions (≤ 2.3mm). Little survives of the exterior surface but it is smooth and possibly burnished. Colour: brown/brown/black. Thickness: 4.7–5.4mm. Weight: 7g.

Vessel 21: quadrant 2, L6.
Represented by a single rim sherd 354; 2 neck fragments 353, 359; 1 body sherd 348:1 and 6 fragments 350, 356:1–5. Simple out-turned rounded rim and a curved neck. Hard compact with a medium to high content of quartzite inclusions (≤ 4.3mm). The exterior surface is smooth and burnished. Colour: brown/brown/brown-black. Thickness: 7.6–8.7mm. Weight: 23g.

Vessel 22: quadrant 2, L6.
Represented by 4 body sherds 344, 348:2, 362:1, 514; 12 fragments 261, 345, 347, 349, 351–52, 362:2–4; 1167:1–3 and one crumb 1167:4. Hard, somewhat friable fabric with a medium to high content of quartzite inclusions (≤ 3.1mm). Much of the exterior surface is weathered or missing but what survives is smooth. Slight traces of carbonised residue are present on the interior surface. Colour: orange/orange-black/black. Thickness: 7.7–8.8mm. Weight: 36g.

Vessel 23: court, F 51, black charcoal concentration.
Represented by a rim fragment 837; 2 fragments 838–39 and 7 crumbs 840–46. Little survives of the rim but it appears to have been rounded. Hard, somewhat friable fabric with a medium content of quartzite inclusions (≤ 2.4mm). Little of the smooth and burnished exterior surface survives. Colour: orange-brown/brown-black/brown. Thickness: 5.9–8.7mm. Weight: 6g.

Vessel 24: court, F51, black charcoal concentration.
Represented by a single body sherd 828 and 7 fragments 829–835. Thin-walled, compact fabric with a low to medium content of quartzite inclusions (≤ 2.6mm). The surfaces are smooth but slightly weathered. Colour: orange/dark grey/orange-brown. Thickness: 5.3–5.6mm. Weight: 12g.

Vessel 25: court, F 51, black charcoal concentration.
Represented by a single rim sherd 836 and one body sherd 345. Out-turned rim with a high, rounded internal bevel, pinched in against the internal surface. The neck is outwardly splayed and gently curved. Hard, well-executed fabric with high content of quartzite inclusions (≤ 4.7mm). The exterior surface is smooth and burnished showing slight evidence for weathering. Colour: brick red/dark grey-black/brown-black. Thickness of neck: 10.1mm: Thickness of body: 6.9mm. Weight: 44g.

Vessel 26: court, L14 (Fig 25).
Represented by 13 rim sherds 566:1–2, 575:1–2, 577, 581/612, 597–98, 637, 650/654, 766, 881, 893; 2 rim fragments 579, 765; 28 neck sherds 549, 559–60, 576, 583–84, 588, 593–94, 600, 611, 613, 619, 627, 641, 643, 653, 672, 687, 732–33, 747:2/642, 767/768, 804, 806, 813–14, 817; 11 shoulder sherds 576, 585, 592, 620, 630, 639, 652, 734–35, 747:1, 874; 3 shoulder fragments 557, 564, 679; 63 body sherds 617–18, 621, 623–24, 628–29, 631–32, 633, 635, 640, 644–48, 655–78, 680–86, 736–38, 740–42, 748–51, 754, 756–57, 753/769, 764/771 and 54 fragments 551–52, 556, 558, 561, 563, 565, 567, 570–71, 579, 589, 596, 600–03, 605–07, 622/625, 634, 734, 748–63, 755/762, 758–59, 760:1, 760:2/763:2, 770/772, 805, 807–10, 812, 814, 816–17. Out-turned rounded rim with a medium angled shoulder. Just below the shoulder the fabric is pressed against the exterior surface to form a pleat or join. Hard, compact well-executed fabric with a medium content of quartzite inclusions (≤ 3.4mm). The slightly weathered exterior surface is smooth and burnished. Colour: orange-brown/dark brown/orange-brown. Neck height: 59.8mm. Rim diameter: c 290mm. Thickness: 3.6–4.8mm. Weight: 642g.

Vessel 27: court, quadrant 2, L14.
Represented by a single rim sherd 595; 1 neck/shoulder sherd 580 and 2 body sherds 636/647, 729. Out-turned flattened rim (the top is quite worn so it may have been more rounded), with a straight neck. Just part of the medium angled shoulder survives. Thin-walled, hard, well-executed fabric with a medium content of quartzite inclusions (≤ 3.9mm). A sliver of flint, measuring 6.1mm in length, is visible within the fabric of sherd 595. The smooth and burnished exterior surface is somewhat weathered. Colour: orange/dark grey/orange-brown. Thickness: 5.2–5.3mm. Weight: 21g.

Vessel 28: court, quadrant 2, L14.
Represented by 4 body sherds 574:1–4; 80 fragments 12 (50 fragments), 553–55, 568, 572, 573:1–3, 574:5–6, 586, 587:1–2, 590:1–2, 591:1–4, 599, 604, 609:1–5, 736–39 and 15 crumbs all 13. Thin-walled, fine compact fabric with a medium to high content of quartzite inclusions (≤ 3.5mm). Much of the smooth exterior surface is weathered and inclusions protrude. Colour: orange/black/orange. Thickness: 5.1–7.2mm. Weight: 85g.

Vessel 29: court, quadrant 2 L4.
Represented by a rim fragment 893; 1 shoulder sherd 858; 5 body sherds 510:1–5; 5 fragments 859–60, 894–96 and 11 crumbs 510:6–10, 861–66. Out-turned, rounded rim and a low, pinched-up shoulder. Thin-walled fine fabric with a low to medium content of quartzite inclusions (≤ 2.9mm). The originally smoothed exterior surface is weathered and rough to touch. Colour: orange/grey-brown/orange-brown. Thickness: 4.4–6.7mm. Weight: 20g.

Fragments of Early Neolithic carinated bowls found in the area of the court, quadrants 2 and 4, L4, L 7, L13, L14 but too small or indistinct to be assigned to particular vessels.
Five fragments 239:1, 562, 848, 951:1–2 (weight: 5g).

Area of court: Chalcolithic beaker pot.
Vessel 30: court L3, L7, from upper cairn collapse 1.60m south west of entrance. Domestic beaker represented by a single rim sherd 129:1; 36 body sherds 127:1–12, 129:2–4, 133:1–6, 149:1–5, 213, 229:1, 271, 422, 425; 5 fragments 129:5–9 and one crumb 129:10. Upright simple flat rim. Thick-walled, hard but loose-textured fabric with a medium to high content of granite, dolerite and quartzite inclusions (≤ 3.9mm). The sherds are weathered but show evidence for burnishing. A horizontal, low, raised cordon is present on sherds 133:1 and 425. A seed or cereal impression is present on the exterior surface of sherd 127:1. Colour: red-brown/grey-black/black. Thickness: 8.3–10.1mm. Weight: 222g.

Vessel 31: court L7, from upper cairn collapse 1.70m south-west of entrance.
Fine beaker represented by a single rim sherd 227:1; 1 rim/neck sherd 128:1; 4 neck sherds 128:2, 227:2–4; 1 base sherd 132:1; 6 body sherds 132:2–7 and 6 fragments 128:3–7 and two conjoined sherds (unknown numbers). Upright, simple rounded rim and a simple-angled base. Thin-walled, hard brittle fabric with a low to medium content of dolerite and quartzite inclusions (≤ 3.4mm). Areas of the smooth burnished surfaces are weathered and sometimes missing. Coil breaks are present on sherds 128:1 and 227:1. There is no evidence for decoration. Colour: orange-brown/black/orange-dark brown. Thickness: 4.8–6.3mm. Weight: 74g.

Vessel 32: court, L7, in cairn collapse scattered 1.60m to 2.00m south west of entrance.
Fine beaker represented by a single neck sherd 509A/509C; 4 body sherds 269:1–3, 509B; 1 fragment 225:1 and 3 crumbs 225:2. Thin-walled, hard, brittle fabric with a medium content of quartzite and dolerite inclusions (≤ 4.7mm). Areas of the smooth exterior surface are weathered and inclusions are visible on the surface. Colour: orange/black/orange. Thickness: 5.3–6.4mm. Weight: 28g.

Vessel 33: court, L7, from upper cairn collapse.
Fine beaker represented by three body sherds 423:1–2, 984; 18 fragments 229:2–9, 231:1–2, 243:1–4, 267:1–2, 421:1–2 and 27 crumbs 245:1–3, 424. Thin-walled, hard brittle fabric with a low to medium content of dolerite and quartzite inclusions (≤ 6.1mm). Slight evidence for burnishing especially on the neck where there are also horizontal striations or wipe marks. Few inclusions are visible on the slightly weathered exterior surface. Colour: buff-black/black/black-brown. Thickness: 8.5–9.2mm. Neck height: 44.3mm. Rim diameter: 130mm. Weight: 22g.

Vessel 34: court, L 7, L4, L14, from directly under lintel where cairn collapse was not so dense and assumed to have filtered downwards.
Fine beaker represented by two rim sherds 507:1, 1057:1; 1 neck sherd 506:1; 8 body sherds 240:1–3, 870:1/872:1, 873:1, 880, 882, 883; 9 fragments 240:3, 270:1, 868, 869:1–2, 870:2, 871:1–2, 872:2 and 10 crumbs 243:1, 873:2, 874–78. Out-turned, unexpanded rounded rim above a curved neck. Thin-walled fine compact fabric with a medium content of inclusions (≤ 4.1mm). The smooth exterior surface is abraded and there is no surviving evidence for decoration. Colour: orange/black/orange. Thickness: 3.1–6.8mm. Weight: 74g.

Early Neolithic carinated bowl.
Vessel 35: quadrant 1, L 6, L12 to north of cairn (Fig 26).
Represented by a large portion of a rim/neck/shoulder sherd 1165:1/2; 2 body sherds 1162, 1166; 2 fragments 1163:1–2 and 4 crumbs 1164:1–4. Out-turned pointed rim with gently curved neck and gently angled shoulder. The shoulder had been pinched back against the lower body to secure it. Thin-walled, well executed hard fabric with a medium to high content of quartzite inclusions (≤ 2.6mm). The smooth burnished exterior surface is slightly weathered. Few inclusions are visible on the exterior surface. Colour: black/black/black-brown. Thickness: 5.8–6.2mm. Neck height: 59.8mm. Rim diameter: 260mm. Weight: 127g.

Vessel 36: quadrant 3, L6, north of cairn.
Represented by 4 body sherds 480, 482:1, 993, 1161 and 7 fragments 464, 477, 482:2–3, 542:1–2, 1160. (possibly two vessels represented). Well-executed, hard compact fabric with a medium to high content of quartzite inclusions (≤ 4.2mm). The smooth burnished exterior surface is somewhat weathered. Colour: first group: brown-black/brown/brown-back; second group: orange/black/black. Thickness: 6.2–6.9mm. Weight: 22g.

Vessel 37: quadrant 3, north of cairn, L 6, L12.
Represented by a single body sherd 982 and 5 fragments 215–16, 439, 445, 494. Thin-walled hard compact fabric with a high content of quartzite and granite inclusions (≤ 3.2mm). The small sherds are weathered and rough to touch. Colour: orange throughout. Thickness: 6.2–6.8mm. Weight: 13g.

Vessel 38: quadrant 3, north of cairn, L6.
Represented by 3 fragments 474, 532–33. Thin-walled brittle friable fabric with a medium content of quartzite inclusions (≤ 2.5mm). The smooth exterior surface is weathered. Colour: orange/brown/black-

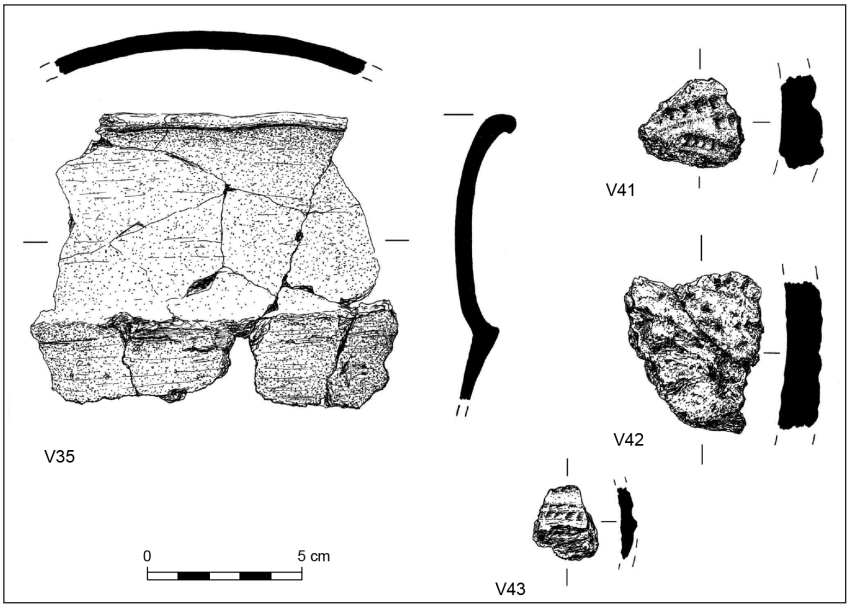


Fig 26 An Early Neolithic carinated bowl (V35) and Middle Neolithic globular bowls (V41–V43) found north of the cairn in plough-disturbed layers.

brown. Thickness: 6.4–7.1mm. Weight: 5g.

Vessel 39: quadrant 3, north of cairn, L6.
Represented by a rim sherd 818 and 1 shoulder fragment 855. Out-turned pointed rim, the tip is missing, with a low stepped shoulder. Hard compact, good quality fabric with a medium content of quartzite inclusions (≤ 2.8mm). The smooth and burnished exterior surface is weathered. Colour: orange-buff/orange/orange. Thickness: 7.6–8.7mm. Weight: 12g.

Vessel 40: quadrant 3, north of cairn, L6.
Represented by a single fragment 976. Hard brittle fabric with a medium to high content of quartzite and possibly granite inclusions (≤ 3.2mm). The surviving portion of the exterior surface is smooth and probably burnished. Colour: red-orange/black/black. Thickness: 8.4mm. Weight: 1g.

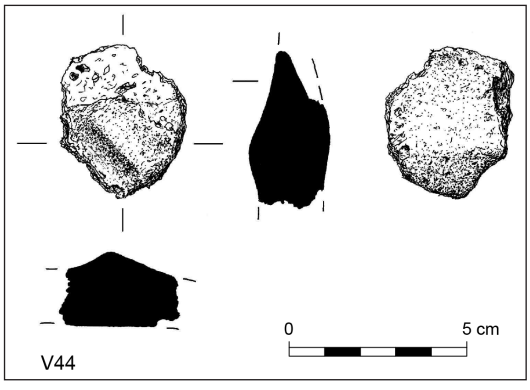


Fig 27 Fragments of an Early Bronze Age encrusted urn, vessel 44, thought to have been disturbed by ploughing.

Sherds from Early Neolithic carinated bowl and possible beaker found in the area north of the cairn, quadrant 3, L12 but too small and indistinct to be assigned to particular vessels.
One body sherd 915 (weight: 4g); body sherd 936 (possibly beaker) and a fragment 1060 (possibly beaker) (weight: 7g).

Middle Neolithic globular bowl,
Vessel 41: quadrant 3, north of cairn, L6. Represented by a single body sherd 1142 (Fig 26). Thick-walled hard fabric with a medium content of large dolerite inclusions (≤ 11.1mm). The smoothed exterior surface shows evidence for weathering. Decoration is present in the form of three converging rows of impressed stabs. Colour: dark orange/grey-black/black. Thickness: 14.0mm. Weight: 12g.

Vessel 42: quadrant 3, north of cairn, L4, L6 (most), L12 (Fig 26).
Represented by a rim fragment 446; 3 body sherds 537, 616, 795; 37 fragments 338, 390, 448, 468, 486, 491–92, 498, 500, 502–03, 531, 534:1–2, 536, 543–45, 547:1–2, 548:1–10, 792:1, 796–97, 799, 976, 1033, 1036 and 4 crumbs 548:11, 792:2–4. The rim fragment appears slightly in-turned and rounded with a deep channel around the circumference of the rim top. Thick-walled, hard but somewhat crumbly textured fabric with a medium content

of mainly dolerite inclusions (≤ 7.5mm). Much of the weathered exterior surface is missing. Where it survives (for example on sherd 616) there are traces of faint impressions. Slight traces of carbonised residue are present on the interior surface. Colour: orange/black-brown/black. Thickness: 11.0–13.2mm. Weight: 161g.

Vessel 43: quadrant 3, north of cairn, L 6, L12 (Fig 27).
Represented by 16 fragments 535, 546, 800, 1034, 1037:1, 1123, 1136:1–3, 1137:1–2, 1138:1–2, 1141:1–2, 1159 and 2 crumbs 1037:2, 1141:3. Hard brittle fabric with a medium to high content of large, mainly dolerite inclusions (≤ 9.3mm). Much of both the interior and exterior surfaces is missing. Where the exterior survives it is smooth formed by a creamy clay and water wash. Limited evidence for decoration survives in the form of rows of closely spaced, diagonally set impressions. Colour: orange/black/black. Thickness: 9.3–14.0mm. Weight: 35g.

Early Bronze Age encrusted urn.
Vessel 44: quadrant 3, north of cairn, L4, L6 (Fig 27).
Represented by 2 rim sherds 410, 414:1; 1 rim fragment 433; 1 rib fragment 390; 43 body sherds 220, 315, 387, 406, 408:1–4, 409, 411, 430, 435–36, 438, 440–41, 443–44, 450, 452, 458, 470–72, 476, 496–97, 540, 615, 852, 853:1–2, 854:1–2, 933, 942–43, 981, 987, 1139:1–4; 8 fragments 401–02, 413:1, 414:2–3, 538, 614, 938 and 29 crumbs 388, 391, 393, 413:2–7, 415, 434, 442:1–5, 447, 481, 485, 487, 499:1–2, 798, 1140:1–6. Probable rounded upright rim with a high concave internal bevel. The neck area is thick-walled but the lower body it thinner and occasionally finer. Hard friable fabric with a medium content of granite and dolerite inclusions (≤ 4.6mm). The worn and abraded exterior surface was originally smoothed with a clay and water wash. Decoration is present in the form of applied ribs and shallow diagonal scores and possibly triangular scores. Slight traces of carbonised residue are present on the lower interior surface. Colour: dark grey-brown/dark grey/dark grey. Thickness of neck area: 14.8mm. Thickness of body: 9.4–10.5mm. Weight: 296g.

Late Bronze Age vessel.
Vessel 45: court, L4, L7, in cairn collapse and filtered down to old sod level at west side of court. Represented by a body sherd 246:1 and 2 fragments 246:2–3. Thick-walled, coarse gritty fabric with a medium content of mainly dolerite inclusions (≤ 5.4mm). The exterior surface is weathered and inclusions protrude through the surface. Colour: brown/grey-black/brown-black. Thickness: 10.5–13.0mm. Weight: 23g.

Late Bronze Age vessel.
Vessel 46: quadrant 3, north of cairn, L 6. Represented by a rim sherd 392.

Upright, rounded and slightly out-turned rim with a concave internal bevel. Thick-walled, hard compact fabric with a medium content of granite and dolerite inclusions (≤ 4.4mm). The exterior surface is weathered. A slight iron pan deposit has formed in the area of the internal bevel and within a fracture in the rim. Colour: grey-brown/dark grey/grey-brown. Thickness: 14.3mm. Weight: 23g.

Summary

A large prehistoric ceramic assemblage consisting of 1,260 sherds and 350 crumbs (weight: 4,050g) was found during the excavation. Sherds representing an estimated 26 Early Neolithic carinated bowls, an Early Neolithic un-carinated bowl and cup, a Middle Neolithic globular bowl, five Chalcolithic beaker vessels and a single Late Bronze Age vessel were found within the three chambers and the area of the court. Sherds representing six Early Neolithic carinated bowls, three Middle Neolithic globular bowls, an Early Bronze Age encrusted urn and one Late Bronze Age vessel were found outside the tomb, largely in the area to the north of the cairn. This evidence indicates episodic funerary or associated ritual activity spanning in date from c 3900 BC up to c 1600 BC, with limited activity possibly as late as 800 BC.

Report

This assemblage of probably locally manufactured pottery consisting of Early and Middle Neolithic, Chalcolithic, Early Bronze Age and Late Bronze Age pottery, represents episodic human activity at this site for over 3,000 years. The largest group of identified vessels, 23 in total and weighing 2,417g, was found in the area of the court (see Table 14). Sherds representing 14 Early Neolithic carinated bowls (vessels 13–19, 23–29) were recovered from L4, L6, L7, L10, L13 and L14 within the court and evidence for three bowls was found in the area in front of the east facade. Sherds representing five Chalcolithic beaker vessels (vessels 30–34) came from within the upper collapse in the court in L3 and L7; and under the lintel in L4, L7 and L14. The remains of a single Late Bronze Age coarse vessel (vessel 45) were also found in these blocking stones in L4 and L7.

Sherds representing 10 vessels and weighing 805g, were found in chamber 1. The majority, vessels 1–8, were Early Neolithic carinated bowls

with sherds coming from L16, L24 and L25. Vessel 9 was also Early Neolithic in date but consisted of a small cup-like vessel from L25, while vessel 10 was a Middle Neolithic globular bowl. Interestingly, the rim sherd was found in L16 within the chamber but a further 22 fragments from what appear to be part of the same vessel came from the area excavated outside the tomb (see Tables 11, 15). Evidence for just one Early Neolithic carinated bowl (vessel 11; weight 31g) was found in chamber 2 in L16 and L19. A single vessel — an Early Neolithic uncarinated bowl (vessel 12, weight 78g) — was also identified in chamber 3; three additional sherds were found in L 17 but were too small to assign with confidence to this vessel.

Twelve vessels were identified in the area north of the tomb (vessels 35–44, 46: weight 718g). Sherds representing six Early Neolithic carinated bowls (vessels 35–40) were recovered, coming from L6 and L12. Three further sherds were also found in L12 but were too small to assign with confidence to a particular vessel. Sherds representing four Middle Neolithic globular bowls (vessels 10, 41, 42 and 43) were found in L4, L 6 and L12. Sherds from a single Early Bronze Age encrusted urn (vessel 44) were found within L4 and L6 and a Late Bronze Age coarse vessel is represented by just one rim sherd found in L6.

Early Neolithic carinated bowl assemblage

The majority of the vessels identified are undecorated carinated bowls. A total of 1,032 sherds and 270 crumbs (weight: 2,972g) represent an estimated 32 bowls. Evidence for eight bowls was found in chamber 1 (vessels 1–8), one from chamber 2 (vessel 11), 14 from the court area (vessels 13–29), and three from in front of the eastern façade (vessels 20–22); sherds representing six bowls (vessels 35–40) were found in the area outside the tomb to the north (see Tables 11, 12,14 and 15).

The surviving rim and shoulder sherds, as well as the fabric type, are consistent with the earliest type of Neolithic pottery in Ireland (Case 1961: 'Dunmurry-Ballymarlagh styles'; Sheridan 1995: 'classic' carinated bowls), widely dated to c 3900–3600 BC. This form consists of a hemispherical bowl, above which is a distinct shoulder or carination, a curved or upright neck and a simple, generally everted, rounded or pointed rim.

The assemblage is generally well executed and in good condition. Although there is some damage to the surfaces and edge breaks of many sherds, there is limited evidence for severe wear, abrasion or weathering of the type that can be associated with major disturbance or exposure in the open. The condition of the pottery is consistent with some movement after breakage but with protection from the elements. The distribution of the sherds within the chambers and within the area of the court indicate that pots and or sherds were placed close to the wall edges of the tomb, affording a certain amount of protection from any collapsing matter or from continuing human activity. The majority of the identified vessels were represented by fewer than 10 sherds, just three (vessels 22, 29 and 21) had between 10 and 20 sherds, while vessels 1, 2, 13, 14, 16, 26 and 28 were represented by between 48 and 397 sherds. These large groups of sherds may represent pots that were deposited intact and later disintegrated or, perhaps, were deliberately broken prior to deposition. It is difficult to be sure whether the vessels represented by small numbers of sherds indicate token ceramic deposits or just poor survival rates.

All bowls were coil built, the initial manufacturing process involved kneading the clay and adding stone inclusions. All of the vessels contain quartzite, ranging between 2.3mm and 5.3mm in length, which was either crushed, giving an angular shape, or rounded, suggesting its use in a naturally rolled state, possibly derived from fine sands and gravels. Both fine- and coarser-grained material is present. A sherd (595) from vessel 27, contained a sliver of flint (6.1mm in length) within the fabric. Vessels 37 and 40 from the area outside the cairn, contained possible granite inclusions in addition to quartzite. The fabric matrix, mainly dark brown/black to buff-orange in colour, is fairly uniform throughout, with the majority of pots having well-executed hard, compact fabric. Slight variations were noted, in that the fabric from vessels 6, 11, 16, 17 and 20 was hard and brittle, while the fabric from vessels 2, 5, 7, 14, 18, 22 and 23 was hard and friable. There was no discernible difference in the fabric from the vessels outside the cairn, with vessels 35, 36, 37 and 39 being well executed, hard and compact and vessels 38 and 40 having hard brittle fabric.

The surfaces of the pots were carefully smoothed with the fingers or a smooth implement; narrow horizontal striations left by such a tool survive on sherds from vessel 2. When the clay was dry, but before firing, the pots were burnished, probably by rubbing with a smooth stone or leather cloth, to provide an even finer finish. Evidence for burnishing survives on fourteen pots — 1, 2, 15, 19–21, 23 and 25–27 from the chambers and court, and vessels 35, 36, 39 and 40 from the area outside the cairn; however, it is probable that all of the vessels were originally finished in this way.

It was possible to estimate the rim diameters in a limited number of cases, showing that these, at least, represented sizeable pots. The rim of vessel

Vessel	Type	Context	Rim	Neck	Shoulder	Body	Fragment	Crumb	Weight g
V1	ENCB	L25	5	7	9	21	33	—	343
V2	ENCB	L25	3	1	2	11	31	—	335
V3	ENCB	L16, 24, 25	—	1	1	6	—	—	52
V4	ENCB	L25	—	—	—	—	1	—	3
V5	ENCB	Prob chamber 1	—	—	2	—	—	—	13
V6	ENCB	L25, F74	—	—	—	2	5	—	7
V7	ENCB	L16	—	—	2	—	—	—	8
V8	ENCB	L25	1	—	—	2	—	—	15
V9	ENPB	L25	1	—	—	—	—	—	8
V10	MNGB	Jamb area, chambers 1/2 L16 & Q3, L12	1	—	—	—	(*22*)	—	21
Total			11	9	16	42	70	—	805

Table 11 Prehistoric pottery details from chamber 1 (F = Feature; L = Layer; Q = Quadrant).

Vessel	Type	Context	Rim	Neck	Shoulder	Body	Fragment	Crumb	Weight (g)
V11	ENCB	L16, 19		—	2	3	2	—	31

Table 12 Prehistoric pottery details from chamber 2.

Vessel	Type	Context	Rim	Neck	Shoulder	Body	Fragment	Crumb	Weight (g)
V12	ENPB	L8/9, L11	5	—	—	12	21	2	78
Also	ENPB	L17	—	—	—	—	2	1	1
Total			5	—	—	12	23	3	79

Table 13 Prehistoric pottery details from chamber 3.

13 measures up to 300mm in diameter, while the estimated rim diameter for vessel 26 is 290mm and for vessel 1 is 270mm. Vessels 2 and 11 appear to represent smaller bowls with both rims measuring just 130mm in diameter. The pots are generally thin-walled with the assemblage averaging between 4.2mm and 9.5mm thick. The majority, however, range between 6.0mm and 7.5mm with a small group of very thin-walled vessels (20, 24, 26, 27) ranging between 3.6mm and 5.6mm. The estimated rim dimensions and fabric thickness of the vessels in the area outside the cairn is similar, with the rim of vessel 35 measuring 260mm in diameter and the wall thickness of vessels 35–40 ranging from 5.8mm to 8.7mm.

A range of subtly different rim forms were present in the assemblage. Vessels 1, 21, 23, 26, 27 and 29 had everted, rounded rims; 15 was rolled to form a rounded rim, 16 was everted and pointed, and 25 was everted with an internal bevel. Vessels 2, 8, 13 and 19 were everted and flat with slight lip overlaps on the interior surface; in areas the clay forming the rim of vessel 13 was pressed back against the exterior surface forming an obvious pleat. The rims from vessels 35 and 39, from the area outside the cairn, were everted and pointed. In most examples the necks appeared to be gently curved, except for those of vessels 2 and 27, which were straight and upright. The shoulders were largely gently angled, with some having slight anomalies. Areas of the shoulders of vessel 1 and 2 appeared to be carelessly formed with areas sometimes moulded to an angular edge and sometimes more rounded while an area of vessel 5 was pinched up with the fingernails. Immediately below the shoulder of vessel 26 the fabric is pressed down against the exterior surface to form a pleat or obvious join. Vessel 11 had a sharp angled shoulder and that of vessel 29 was pinched up.

Early Neolithic plain bowl assemblage

Just 41 sherds and 3 crumbs (weight: 87g) representing an Early Neolithic cup-like vessel (vessel 9) and a plain uncarinated bowl (vessel 12) were identified (see Tables 11, 13). This type of small vessel has been found in association with carinated

bowls on a number of funerary and domestic sites throughout the country. The cup-like vessels have a generally shallow profile and they tend to have simple rounded, pointed or flat upright or slightly in-turned rims, ranging in size from c 50–90mm in maximum external diameter. While some fine cups — like the example from Creggandevesky — occur, many are squat with relatively thick lower bodies. The fabric often has a sandy texture and tends to be thoroughly fired, due principally to the small size of the vessels. While some appear to be coil-built, others, especially the smaller cups, were simply kneaded into shape. The plain, uncarinated bowls are mainly coil-built and, although generally smaller than the carinated bowls, are similar in fabric and finish.

A single rim sherd found in chamber 1 represented vessel 9. It consisted of a flat rim which curved gently down to the body, measuring only about 60–80mm in diameter. The well-executed fabric, 7.8mm thick, had a high content of quartzite inclusions measuring up to 5.6mm long. The originally smoothed exterior surface is slightly weathered. The rest of the bowl sherds represented vessel 12 and were scattered across the floor of chamber 3, suggesting that the bowl may have been deposited intact but was broken when stones from the roof collapsed. This small, plain bowl had a somewhat carelessly executed in-turned, rounded rim measuring an estimated 120mm in diameter. The fabric, ranging from 5.2mm to 6.1mm thick, was hard but friable with a high content of quartzite inclusions measuring up to 6.4mm long. The originally smooth surface is abraded while inclusions and small cavities are visible on the surface.

Early Neolithic assemblage: comparative material

Early Neolithic carinated bowls, similar to those from Creggandevesky, have been found in varying numbers from other excavated court tombs in Ireland. Of the 49 court tombs included in Herity's 1987 study, such bowls, both plain and those decorated with fluted ornamentation on the rims and/or necks, such as Ballyalton, Co Down (Herity 1987, 267), and plain uncarinated bowls, were recorded at 38 sites. These occurred in pre-tomb levels, primary deposits within the tombs and the court areas (see Table 16). As well as at Creggandevesky, carinated bowls have been found at 30 court tombs, with at least seven of these examples coming from pre-tomb levels (Ballymacaldrack and Ballymarlagh, Co Antrim, Ballybriest, Co Londonderry, Ballyalton, Co Down, Bavan, Co Donegal, and Ballyglass 1 and 2, Co Mayo). The quantity of Early Neolithic pottery found in the tombs varies considerably, with large assemblages of undecorated carinated bowls comparable to Creggandevesky found at Ballymarlagh, Ballyutoag and Browndod, all in Co Antrim. As at Creggandevesky, the largest number of vessels has often come from the court areas. Small numbers have been recorded from other tombs in Co Tyrone; the remains of four bowls were found in the chambers of both Barnes Lower and Legland, while just two examples were recorded from chamber 1 at Clady Haliday (Herity 1987, 232–38).

Plain uncarinated bowls like vessel 12 from Creggandevesky have been found at a number of court tombs and usually sherds of just one or two vessels are represented; examples include Clady Haliday, Co Tyrone, Ballyutoag and Browndod, Co Antrim, Audleystown and Ballyalton, Co Down, and Ballyglass 1, Co Mayo. Unusually, at Ballymacaldrack, Co Antrim, sherds representing six plain bowls were found in the area of the court (Collins 1976; Herity 1987, 247). Small cups, similar to vessel 9 from Creggandevesky, were initially recognised by Ó Ríordáin at Lough Gur, Co Limerick (1951, fig 9.3; 1954, 327, 328–30, fig 13), and were subsequently described from other Early Neolithic sites on the Knockadoon peninsula (Grogan & Eogan 1987). Only a few other examples have so far been identified from other court tombs; sherds representing cups were found in the court at Ballymacaldrack and from chamber 2 at Browndod (Herity 1987, 247, no 40; 252, no 3).

Middle Neolithic globular bowl assemblage

Eighty one sherds and six crumbs (weight: 229g) representing four Middle Neolithic globular bowls with impressed decoration were found. Just one bowl was identified within chamber 1 (vessel 10) and evidence for the other three (vessels 41–43) were found in the area outside the tomb to the north (see Tables 11, 15). This type of decorated bowl was in use during the final stages of the Middle Neolithic c 3700–3200 BC and has been found in both funerary and domestic contexts (Grogan & Roche 2010). They are characterised by deep, hemispherical bowls with mainly rounded, pointed or flat in-turned rims (Case 1961: Goodland bowls', 'Carrowkeel Ware'; Herity 1982: 'Globular bowls').

Just one Middle Neolithic sherd was found within the tomb; this rim sherd was part of vessel 10, while the remaining 22 fragments from the vessel were found in the area north of the tomb. It is difficult to interpret this separation of the sherds, but the placement of the rim sherd appears to be deliberate in that it was deposited beside the western jamb stone, which separates chambers 1 and 2. It may represent a new burial or possibly a token deposition in memory of an ancestor. The well-executed but

Vessel	Type	Context	Rim	Neck	Shoulder	Base	Body	Fragment	Crumb	Weight (g)
V13	ENCB	Q4, L14	19	8	15	—	79	276	59	912
V14	ENCB	Found with V13	—	—	—	—	—	—	154	24
V15	ENCB	Q2, Q4, L13	2	—	—	—	2	—	—	21
V16	ENCB	Q2, Q4, L4, 7, 13	1	—	—	—	—	109	19	100
V17	ENCB	Q4, L10	—	—	—	—	1	—	—	5
V18	ENCB	L14	—	—	—	—	1	1	—	9
V19	ENCB	Q2, L7 cairn blocking material	1	—	—	—	—	—	—	2
V20	ENCB	Q2, L6 in front of eastern façade	—	—	—	—	—	6	—	7
V21	ENCB	Q2, L6	1	2	—	—	1	6	—	23
V22	ENCB	Q2, L6, 10, 14	—	—	—	—	4	12	1	36
V23	ENCB	F51 Black charcoal concentration	1	—	—	—	—	2	7	6
V24	ENCB	F51 Black charcoal concentration	—	—	—	—	1	7	—	12
V25	ENCB	F51 Black charcoal concentration	1	—	—	—	1	—	—	44
V26	ENCB	L14	15	28	14	—	63	54	—	642
V27	ENCB	Q2, L14	1	—	1	—	2	—	—	21
V28	ENCB	Q2, L14	—	—	—	—	4	80	15	85
V29	ENCB	Q2, L4	1	—	1	—	5	5	11	20
Also	ENCB	Q2, 4, L4, L7, L13, L14	—	—	—	—	—	14	—	5
V30	D.Beaker	Upper cairn blocking L3, 7	1	—	—	—	36	5	1	222
V31	F.Beaker	Upper cairn blocking L7	2	4	—	1	6	6		74
V32	F.Beaker	Cairn blocking L7	—	1	—	—	4	1	3	28
V33	F.Beaker	Upper cairn blocking L7	—	—	—	—	3	18	27	22
V34	F.Beaker	Under lintel L4, 7, 14	2	1	—	—	8	9	10	74
V45	LBA	Cairn blocking L4, 7	—	—	—	—	—	1	2	23
Total			48	44	31	1	221	612	309	2417

Table 14 Prehistoric pottery details from area of court.

Vessel	Type	Context	Rim	Neck	Shoulder	Rib	Body	Fragment	Crumb	Weight (g)
V35	ENCB	Q1, L6, 12	1	—	—	—	2	2	4	127
V36	ENCB	Q3, L6, 12	—	—	—	—	4	7	—	22
V37	ENCB	Q3, L6, 12	—	—	—	—	1	5	—	13
V38	ENCB	Q3, L6	—	—	—	—	—	3	—	5
V39	ENCB	Q3, L6	1	—	1	—	—	—	—	12
V40	ENCB	Q3, L6	—	—	—	—	—	1	—	1
Also	ENCB	Q1, Q3, L12	—	—	—	—	2	1	—	11
V10	MNGB	(Q3, L12) & (chamber 1, L16)	(1)	—	—	—	22	—	21	
V41	MNGB	Q3, L6	—	—	—	—	1	—	—	12
V42	MNGB	Q3, L4, 6 (most), 12	1	—	—	—	3	37	4	161
V43	MNGB	Q3, L6, 12	—	—	—	—	—	16	2	35
V44	EBAEU	Q3, L4, 6	3			1	43	8	29	296
V46	LBA	Q3, L6	1	—	—	—	—	—	—	23
Total			7	—	1	1	56	80	39	718

Table 15 Prehistoric pottery details from area outside tomb.

weathered fabric is hard and compact, averaging 8.3mm thick. The rim is flat with an internal lip with a single row of twisted cord impressions around its circumference. Surviving evidence for decoration on the exterior surface consists of two horizontal rows of twisted cord impressions.

The sherds representing the three globular bowls (vessels 41–43) in the area north of the cairn, possibly represent an area of temporary habitation connected with paying homage or visiting the tomb, similar to that of the Early Neolithic presence in that area. The bowls were thick-walled, ranging from 9.3mm to 14.0mm, with a medium to high content of large mainly dolerite inclusions. The generally hard, brittle, sometimes crumbly textured fabric is weathered, with the surfaces often missing, but traces of a creamy clay and water wash survive on areas of vessel 43. Slight traces of carbonised residue are present on the interior surface of vessel 42. Just one rim fragment survives; it is slightly in-turned and rounded with a deep channel around the circumference of the rim top. Although the sherds are largely weathered, traces of decoration survive on the exterior surface of vessel 41 in the form of three converging rows of impressed stabs. Vessel 42 is decorated with traces of faint impressions and vessel 43 is decorated rows of closely spaced, diagonally set impressions.

Middle Neolithic globular bowl assemblage: comparative material

Middle Neolithic globular bowls with impressed decoration are more often found in domestic contexts, especially in the north-east of the country (Grogan & Roche 2010, 33). However, they have also been found in a number of court tombs, presumably accompanying additional burials or possibly deposited as tokens of respect (Table 16). Bowls similar to those found at Creggandevesky have been found in court tombs at Carnduff, Co Antrim, Annaghmare, Co Armagh, and Audleystown, Co Down (Collins *et al* 1954; Herity 1987, figs 42. 12, 49. 3, 51. 4). Earlier forms of this type of vessel, such as the bipartite and broad-rimmed bowls, have also been found in the same court tombs as the later bowls with less elaborate rims, for example at Carnduff, Co Antrim, and Ballyalton and Ballyedmond, Co Down (Herity 1987, 342, 344, 348). This illustrates a continuous if not unbroken use of some tombs, at least, from the time of their construction in the Early Neolithic up to the Middle Neolithic and later (see below).

Significant placement of Early and Middle Neolithic pottery in the tomb

While much of the pottery came from reasonably discrete and compact areas, it is clear that some of

Townland (Tomb)	County	ENCB	ENPB	DNCB	MNGB	Beaker	Early/Middle Bronze Age	LBA
Ballymacaldrack	Antrim	■	■	■	■		Food Vessel	■
Ballymarlagh	Antrim	■		■	■		Vase Urn	■
Ballyutoag	Antrim	■	■	■	■			■
Browndod	Antrim	■	■	■				■
Carnduff	Antrim	■	■		■			
Craigs	Antrim						Urns	
Dunteige	Antrim		■		■		4 Urns	
Larne	Antrim			■	■			
Loughconnelly	Antrim	■						
Moyaver	Antrim						Urns	
Annaghmare	Armagh	■	■		■			■
Ballymacdermot	Armagh		■		■	■		
Clontygora Large	Armagh	■		■	■	■	Vase Urn, Encrusted Urn, Cordoned Urn, Accessory Cup	■
Clontygora Small	Armagh			■				
Cohaw	Cavan	■						
Ballybriest	Derry	■	■	■		■		
Carrick East	Derry				■	■		
Knockoneill	Derry	■					Miniature vessel, Food Vessel, Urn	
Tamneybrake	Derry					? ■		
Tamnyrankin	Derry		■	■	■	■		
Audleystown	Down		■	■	■		Food Vessel	
Ballynichol	Down				■	■		
Ballyedmond	Down	■			■	■		■
Ballyalton	Down	■	■	■	■	■		
Edenmore	Down							■
Goward	Down	■				■		■
Mourne Park	Down	■						■
Bavan	Donegal	■			■			
Shalwy	Donegal	■						■
Aghanaglack	Fermanagh	■		■	■			
Ballyreagh	Fermanagh	■	■	■	■	■	Cordoned Urn	■
Tully	Fermanagh	■		■				
Corracloona	Leitrim							■
Kilnagarns Lower	Leitrim	■						
Aghnaskeagh	Louth		■	■	■	■		■
Ballyglass 1	Mayo	■	■		■	■		■
Ballyglass 2	Mayo	■						
Behy	Mayo	■		■				
Rathlackan	Mayo	■			■		Vase Urn, Cordoned Urn	
Creevykeel	Sligo	■				■	Food Vessel, Cordoned Urn	■
Shanballyedmond	Tipperary	■						■
Altanagh	Tyrone	?■			■			
Barnes Lower	Tyrone	■		■	■	? ■		
Clady Haliday	Tyrone	■	■	■	■			
Creggandevesky	Tyrone	■	■		■	■	Encrusted Urn	■
Legland	Tyrone	■		■	■	■		
Ballynamona Lower	Waterford	■			■			

the vessels had more complex post-depositional histories. Note has already been made of vessel 12 in chamber 3; its much-fragmented remains were scattered over a wide area, suggesting that it had been placed in the centre of the chamber and may have been broken by the collapsing roof.

Substantial portions of vessels 1 and 2, including several large, well-preserved sherds, were scattered in the northern area of chamber 1 close to the jambs separating it from chamber 2. Both the condition and disposition of this material is more in keeping with accidental disturbance. It is also worth noting that six vessels (4–9) from the chamber were only very meagrely represented (fewer than ten sherds), even though they were recovered from reasonably well-protected locations or strata. It may be that these represent token ceramic deposits or reflect the removal of material from the tomb for use, as possibly sanctified items, in ceremonies or rituals elsewhere.

Part of vessel 3, from chamber 1 (one neck sherd and five body sherds), came from an upper, possibly even final, deposit (L16) in the south-eastern area of the chamber. This was associated with a cremation deposit (or deposits) representing several individuals (Appendix 4) as well as three stone beads (1049, 1050, 1053) that may have been from the necklace (1157) originally placed in L25. Another sherd from vessel 3 was recovered from a primary deposit in the western part of the chamber (L 24); this also produced a javelin head, flint knife, flint flakes and pieces of quartz and, while no bone was recovered, it may represent a now decayed inhumation.

Another interesting placement of sherds was noted at the junction between chambers 1 and 2 where two body sherds from Early Neolithic vessel 8 were each placed at either side of the projecting jamb stones. As already discussed, the rim sherd from Middle Neolithic vessel 10 was also found beside the western jamb stone. These placements are unlikely to be merely accidental but deliberately deposited at the junction of the two chambers. While the movement of material may, of course, have been fortuitous or accidental or the result of careless footfall within the tomb, deliberate manipulation and movement of earlier deposits during later ceremonies has to be considered. This might reflect the specific evocation of the memory of earlier rituals or even the spirits of specific ancestors.

Opposite: Table 16 Range of pottery from court tombs excluding sherds from pre-tomb contexts (after Herity 1987, with additions). Abbreviations: ENCB: Early Neolithic carinated bowls; ENPB: Early Neolithic plain bowls; DNCB: Developed Neolithic carinated bowls; MNGB: Middle Neolithic globular bowls; LBA: Late Bronze Age vessels.

Chalcolithic beaker assemblage

A total of 51 sherds and 40 crumbs (weight: 420g) representing five Chalcolithic beakers (vessels 30–34) were found within the collapse material in the area of the court (see Table 14). Vessel 30 is a domestic beaker and vessels 31–34 represent fine beakers. The fine beakers with their simple rim, curved neck and simple-angled base are typical of the classic bell beaker profile and conform to Case's Style 2 insular Irish beakers, dating to c 2450–2200 BC (Case 1995, 16). Domestic beaker is a term used for larger, heavier vessels but not appreciably coarser than the so-called fine vessels. Both are generally domestic in context and function. While many beakers are lavishly decorated with both incised and impressed motifs, recent discoveries have indicated a sizeable proportion of plain vessels. At Creggandevesky, except for the remains of a raised cordon on vessel 30, there is no surviving evidence for decoration on the four fine beakers. It is interesting to note that the beaker accompanying a burial in passage tomb 15 at Knowth, Co Meath (Eogan 1984, 311), was also undecorated. The vessels or broken sherds may have been deposited at Creggandevesky as the final burial and part of some ritual re-ordering of the entrance area of the tomb.

Vessel 30 had an upright, simple flat rim. The thick-walled fabric (8.3mm to 10.1mm) is somewhat loose-textured with inclusions of granite, dolerite and quartzite (weight: 222g). The weathered exterior surface shows slight evidence for burnishing. Interestingly, a seed or cereal impression is present on the exterior surface of sherd 127:1 (Appendix 1). The fine beakers (31–34) are quite consistent in having thin-walled (3.1mm–9.2mm thick) hard, compact but somewhat brittle fabric with mainly dolerite and quartzite inclusions (weight: 198g). All show signs of weathering and slight evidence for burnishing is present on vessels 31 and 33. Vessel 31 has a simple rounded rim while vessel 34 has a slightly out-turned rounded rim.

Chalcolithic beaker assemblage: comparative material

Beaker pottery has been identified in at least 15 court tombs (see Table 16 and Herity 1987). As at Creggandevesky, beaker sherds were found at Ballymacdermot (Collins & Wilson 1964) and Goward, Co Down, and at Creevykeel, Co Sligo. Other examples of beaker deposits within court

tombs include Barnes Lower and Legland, Co Tyrone, Clontygora Large, Co Armagh, Ballybriest, Carrick East and Tamnyrankin, Co Londonderry, and Ballynichol and Ballyedmond, Co Down. These inclusions imply that megalithic tombs continued to be visited and in some cases used for later burials. Beaker sherds accompanying cremated bone were found in the court tomb at Ballybriest and the already mentioned example in a passage tomb at Knowth (Herity 1987, 154; Eogan 1984, 308–12). The Creggandevesky sherds are deliberately broken pots incorporated in the cairn material in the court, representing, in part, ritual manipulation of this area of the tomb during the Chalcolithic period. Similar behaviour was noted at Ballymacaldrack, Co Antrim, where Neolithic bowls appear to have been deliberately broken and deposited among the blocking stones to the chamber (Evans 1938, 65; Jones 2013, 116). At Creggandevesky, the presence of cremated human bone, apparently in association with the pottery, suggests another, very unusual, funerary dimension.

Early Bronze Age encrusted urn

Fifty three sherds and 29 crumbs (weight: 296g) representing a single encrusted urn of the vase tradition (vessel 44) were found in the area outside the tomb to the north (see Table 15). These large, thick-walled funerary urns date to between c 2000 BC and 1700 BC (Brindley 2007, 115), and vary in shape from tub-shaped to tapering from the rim to a narrow flat base. The rims can be upright, slightly out-turned with an internal bevel, or can curve down to a neck and an angled or rounded shoulder. The nature of their decoration is especially distinctive with various arrangements of applied clay ribs and bosses on the exterior surface. These ribs can be plain or decorated with incised slashes or strokes. The areas between the ribs are decorated with a variety of incised and sometimes impressed motifs. From the surviving sherds, the Creggandevesky example had a rounded upright rim with a high concave internal bevel. The hard, friable fabric ranges from 9.4mm to 10.5mm thick with a medium content of granite and dolerite inclusions. The abraded exterior surface was originally smoothed with a clay and water wash and decorated with applied ribs and shallow diagonal scores and possibly triangular scores. Slight traces of carbonised residue are present on the lower interior surface. The majority of encrusted urns are from pit or cist burials but a small number of Early Bronze Age vessels have been found in or near court tombs (Table 16). The sherds from Creggandevesky probably represent a disturbed burial.

Early Bronze Age encrusted urn: comparative material

The distribution of encrusted urns from cists and pits extends from Ulster, mainly concentrated in counties Antrim and Tyrone, down through Leinster and extending across the southern part of the country (Grogan & Roche 2010, ill 9). There are just a few known examples from megalithic tombs — probable sherds from chamber 1 at Clontygora Large, Co Armagh (Herity 1987, 183), and from burials in the passage tomb mound at Tara, Co Meath (O'Sullivan 2005, 176, 184). Although there is no direct connection between the urn and the tomb at Creggandevesky, in view of the broad range of pottery found at this site it is tempting to suggest that its presence in immediate proximity, although at the back of the tomb, is deliberate in order to be close to a revered burial place of the ancestors. It is evident that the Creggandevesky chambers were inaccessible at this time, but it is clear from other sites that Early Bronze Age people entered court tombs and deposited pots and/or sherds to accompany burials or as votive offerings. Food vessels and urns were found in the tombs at Audleystown, Co Down, Rathlacken, Co Mayo, and Creevykeel, Co Sligo; food vessel sherds were found in the court of Ballymacaldrack, Co Antrim, and cordoned urn sherds were found in the court at Ballyreagh, Co Fermanagh.

Late Bronze Age assemblage

Just two sherds and two crumbs (weight: 46g) representing two Late Bronze Age coarse vessels were identified, one within the area of the court (vessel 45) and another (vessel 46) in the area outside the tomb to the north (see Tables 14, 15). These tub- or sometimes bucket-shaped, flat-based, coarse-textured pots, with flat, rounded and sometimes internally bevelled rims have been found in both domestic and funerary contexts dating to c 1100 BC to 800 BC. The fabric of the weathered sherds from these two vessels is quite similar, being thick-walled and coarse, ranging between 10.5mm and 14.3mm thick, with a medium content of granite and dolerite inclusions. The sherd representing vessel 46 is an upright, rounded and slightly out-turned rim with a concave internal bevel.

Late Bronze Age assemblage: comparative material

It is difficult to interpret the nature of this limited Late Bronze Age presence at Creggandevesky, whether it was a fortuitous encounter with the tomb or a deliberate visit and deposition of the sherds. Late Bronze Age sherds are known from a number of court tombs in different areas of the country (see

Table 16). Sherds have been found in secondary positions in a number of chambers, for example, Clontygora Large, Co Armagh, Carrick East and Tamnyrankin, Co Londonderry, Ballyreagh, Co Fermanagh, and Corracloona, Co Leitrim (Herity 1987 184, 195, 197, 217, 221). Sherds have been found in the chamber and court at Goward, Co Down (ibid, 211), and in the court area at Ballymarlagh, Co Antrim, and at Edenmore, Co Down (ibid, 169, 214).

Conclusions

Overall there is a clear homogeneity in the pottery assemblages recorded for the primary use of court tombs, with early forms of carinated and plain bowls occurring in the majority. What is striking is the very long-term, if episodic, use of the tombs as funerary sites, or at least as places that were reverently visited throughout the ages. In the case of Creggandevesky, this secondary interest extended from the early third millennium up to the early first millennium BC. This tradition of re-use has probably affected the presence and preservation of pottery from earlier episodes at Creggandevesky as well as at other sites.

It is apparent that the pottery within the burial chambers at Creggandevesky was primarily funerary, intended to accompany the physical remains of the dead and probably the ancestral spirits into the next world. This function is mirrored by other grave offerings including flint artefacts and stone beads.

In the court, sherds representing some vessels, for example, 13, 16 and 26–28 were carefully deposited at the edges, largely positioned to be safe from ongoing use of the tomb. However, a large proportion of sherds representing vessels were also found unprotected in the centre of the court, for example, 15, 17, 19, 23 and 24. This pottery does not appear to have been accompanied by burials, suggesting it may not have been overtly, or solely, related to funerary deposits. This of course may also have been the case regarding some material in the chambers.

It is clear at Creggandevesky that pottery was an important and integral part of Early Neolithic funerary rites and rituals. This reflects the evidence from other court and portal tombs but contrasts with the comparatively limited ceramic remains in passage tombs. In contrast to pottery from domestic contexts, and indeed from other Early Neolithic tombs, none of the Creggandevesky pottery appears to have been in domestic use, as is demonstrated by the absence of extensive sooting or burnt (food) accretions, nor is there evidence that the pots had been placed on the pyres during the cremation process.

The pottery at Creggandevesky indicates the very long-lived significance of the tomb as a location for funerary and other rituals. Although not continuous, the episodic return to the monument and its possible alteration through the re-use of the court for burial deposits in the Chalcolithic period indicate a prominent marker of historical and sacred meaning for the local community.

APPENDIX 1
A GRAIN IMPRESSION IN SHERD 127, VESSEL 30

MICK MONK

A body sherd (identified as domestic beaker) was found to contain a grain impression on its outer surface. A plasticine positive of the impression was made and examined together with the negative imprint under a binocular microscope (Pl 12)

The impression was of an almost complete barley grain with ventral side facing. The surface of the imprint is not as distinct as one would wish; nevertheless it did not appear to have any indication of an attached lemma ('inner' chaff). Although it is impossible to be completely certain, it would appear that the grain was of naked barley (*Hordeum* cf *polystichum* var *nudum*).

Discussion

Seed imprints of naked barley were found by Jessen and Helbaek (1994) in a number of sherds of pottery assigned by the authors to a general Bronze Age date from Irish sites, including Dun Ruadh, Co Tyrone, as well as Ballymena, Loughloughan and Portstewart, Co Antrim, and Mullaghnash, Co Derry. They also identified a naked barley impression on a sherd of pottery from Whitepark Bay, Co Antrim, a site which, given the quantity of Bronze Age pottery found there, is now considered to be Bronze Age. None of these sherds was clearly defined as beaker pottery.

While imprints in pottery are relatively rare it is not standard practice to search pottery for seed imprints and indeed many are not clearly identifiable as seed or grain impressions. Also archaeobotanists would now view identified impressions as problematic evidence for past crop husbandry by comparison with the usual study of charred remains of seeds and grains (Monk 1986, 32–3). There are some broader comparanda for the Creggandevesky impression from charred remains evidence, although there are still relatively few collections of remains clearly dated to the Beaker period in Ireland.

Johnston has reported on a large quantity of barley grains found in deposits associated with beaker pottery from Frankfort, Co Wexford. The majority of the grains were hulled barley with only small numbers of naked types along with some grains of emmer wheat. That deposit also produced a quantity of weeds and flax (*Linum* sp). In her discussion Johnston refers to a similar assemblage of plant remains associated with a number of beaker vessels from pits on the site of Cloghers, Co Kerry. Cereals in the form of wheat and barley as well as blackberry seeds were identified (Johnston 2007; Kiely & Dunne 2005, 53–4). However, in this case it was not possible to identify the cereals as to species. This was also the case for a small quantity of barley grains associated with beaker pottery recovered during the late 1980s excavations at Doonmoon, Co Limerick (Monk 1988, 191). Excavations around the passage tombs of Knowth and Newgrange, Co Meath, produced a small amount of charred remains from occupation deposits associated with beaker pottery. Both sites produced evidence of emmer wheat as well as naked barley and, in the case of Knowth, wheat grains indeterminate to species as well hazel nut fragments were identified (Monk 1986, 32).

Recent archaeobotanical work on samples from Bronze Age sites has focused on more systematic studies of charred remains. While the Beaker period and Earlier Bronze Age continue to be represented by a few published studies of small assemblages, earlier interpretation of crop husbandry based on cultivation of naked barley has proved not to be the case. It was drawn from an over reliance on the evidence of grain impressions. In a recent critical assessment of the evidence from Later Bronze Age sites in Ireland Fuller *et al* have argued (2014, 200–01) that exclusive use of impression evidence from pottery cannot provide a reliable basis for interpreting the relative importance of crops in past agricultural economies.

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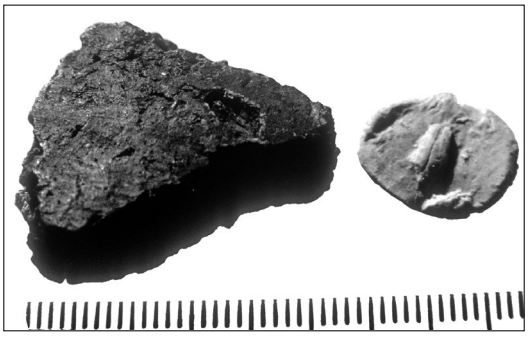


Pl 12 Seed impression of naked barley on a sherd of domestic beaker, sherd 127, vessel 30.

APPENDIX 2
SOIL SAMPLE ANALYSIS

JIM CRUICKSHANK

HORIZON	% Sand	% Silt	% Clay	% Org. Carbon	ppm Total P	pH	me% CEC	me% Ca++	me% MG++	me% Na+	me% K+	mg% mobile Fe	mg% Total Fe
Base layer of peat	—	—	—	21.84	700	5.4	47.4	—	—	—	—	485	800
Ea (missing)													
B iron pan	70	21	9	3.36	1040	5.1	7.4	0.33	0.12	0.15	0.08	600	3200
Bs upper (10cm)	87	9	4	3.00	1040	5.5	13.0	0.34	0.10	0.12	0.06	460	2000
Bs lower (20cm) (merging into parent material)	90	7	3	2.64	1200	5.7	4.6	0.51	0.14	0.17	0.06	300	2300
Forecourt of cairn	88	9	3	2.54	760	5.2	18.0	0.14	0.04	0.09	0.09	1500?	2100

Table 17 Natural soil profile (podsol adjacent to archaeological site).

All exchangeable cations (Ca++, Mg++, K+, and Na+) were measured, and all values are minimal – only trace amounts. These results (Table 17) appear to confirm that the material of the forecourt was the same as natural Bs/C (see particle size, pH, CEC, organic carbon and Total Fe). Total phosphorous seems a little high for natural soils, and would suggest fertilizer input (possible?). Total P is not high enough for human waste input. Iron (Fe) values are as expected for schist-derived podsols. Organic carbon is slightly higher than expected.

LAYER	% Sand	% Silt	% Clay	% Org. Carbon	pH	ppm Total P	me% CEC	me% Ca++	me% Mg++	me% Na+	me% K+	mg% mobile Fe	mg% Total Fe
0–5cm below orthostat 05	76	16	8	3.36	5.1	880	17.6	0.14	0.08	0.16	0.09	1000	2600
5–10cm below orthostat 05	70	20	10	3.30	5.1	800	22.8	0.11	0.06	0.13	0.08	1000	2600
0–5cm below orthostat 025	88	8	4	3.48	5.1	1320	19.2	0.16	0.08	0.12	0.08	700	2500
5–10cm below orthostat 025	90	8	2	3.48	5.3	1500	22.5	0.19	0.10	0.12	0.26	750	3000

Table18 Soil material around stones.

These results (Table 18) indicate that orthostat 05 was set into an imported lining of soil material. The 70/30 (sand/silt + clay) composition is significantly different from the very sandy local soil material. The very high mobile Fe is also notable here (explanation in acidity?) Material below fallen orthostat 025 is remarkable only because of the highest Total P values of the site, and the highest organic carbon (= 7% organic matter) — otherwise, it is natural, local, very sandy material. The Total Phosphorous values at 1320–1500 ppm are considerably higher than the local natural values of about 1000 — so possibly some human input.

APPENDIX 3
RADIOCARBON DATES

RICHARD B WARNER

NOTES ON ANALYTICAL PROCEDURE

Six radiocarbon dates, tabulated below (Tables 19, 20), were obtained from Creggandevesky — two (numbered here 1 and 2) from the overlying peat and four (3 to 6) from archaeological contexts within, or associated with, the court-tomb itself. All the radiocarbon ages were radiological, and were measured by the radiocarbon laboratory in Queens University, Belfast (UB-). Four of the samples (1–3, 5) have laboratory numbers lower than UB-3000, which means that the quoted standard deviation (sd) is likely to be an underestimate. An error-multiplier (em) of 1.5 (Warner 1997, 195, note 6) is here applied to these four age-measures to give the more realistic standard deviation sd* (sd* = sd x em).[1] Sd* is used to produce ranges 2 and 3 in Table 20. Samples 3 and 5 are described as 'discrete patches of charcoal'. The fills of the post-holes, samples 4 and 6, were soil or silt 'with charcoal flecks' and seem certain to represent charcoal that had fallen in after the posts had been removed or had rotted. It seems reasonable to assume that these samples are all roughly contemporary. No details appear to have been obtained on the physical form or species of the charcoal (3–6), which we must therefore assume to have been possibly long-life, and possibly oak (these are default, or worst-case, assumptions). Accordingly an 'own-age' adjustment (al) of 250 years is applied, and is used for the range 3 calibrations (justification in Warner 1990[2]).

Calibration was undertaken using the software OxCal 4.2.[3] The ranges are quoted at 95.4 % probability, rounded outwards to the nearest decade. Range 1, which is the calibration of the raw radiocarbon ages with no adjustments, is presented only for thoroughness — it can have no possible role in further discussion as the adjustments described above are necessary given the potential sample problems. Range 1 is therefore precise, but highly unreliable. Range 2, which incorporates the error multiplier (em), and uses sd*, is far more reliable than range 1, but obviously less precise.[4] Range 3 takes account of the unknown physical nature of the samples by incorporating the 'own-age' (or 'old-wood') adjustment. It is the least precise calibration, but by far the most reliable. I would advise that only range 3 calibrations should be used in any discussion. Most published dates have not undergone the adjustments described here. Where such dates are to be compared with the Creggandevesky dates they should be converted into range 3 dates using the methodology described above.

OBSERVATIONS

The range 3 dates (Fig 28) are compatible with each other, and with the hypothesis that they represent a single event.[5] But the nature of the material dated and severe questions about the integrity of the samples means that no amount of statistical manipulation can draw more detail or information from them. Schulting *et al* (2012) have suggested that the initial use of court-tombs was within the range 3700 to 3570 cal BC, and that they were still being used, if not constructed, towards the end of the 4th millennium.[6] Although the Creggandevesky results are quite compatible with this hypothesis, it should be observed that the tomb also produced some cremated bone, whose radiocarbon dating is less prone to interpretative

PRIMARY DATA									
	Lab-No.	mean bp	sd	context 1	context 2	material	al	em	sd*
1	UB-2433	210	40			peat	n/a	1.5	60
2	UB-2529	975	45			peat	n/a	1.5	68
3	UB-2540	4825	80	chamber 1		charcoal	250	1.5	120
4	UB-7300	4875	37	chamber 1	P100	charcoal	250	1	37
5	UB-2539	4740	85	chamber 3		charcoal	250	1.5	128
6	UB-7301	4930	36	chamber 3	P26	charcoal	250	1	36

Table 19 Radiocarbon samples, location and material.

	CALIBRATIONS		
	range 1 no adjustments	range 2 adjusted for em	range 3 adjusted for al and em
1	calAD 1530 – pres.	calAD 1530 – pres.	calAD 1530 – pres.
2	calAD 990 – 1170	calAD 900 – 1220	calAD 900 – 1220
3	3780 – 3370 calBC	3940 – 3360 calBC	3850 – 3150 calBC
4	3760 – 3530 calBC	3760 – 3530 calBC	3690 – 3380 calBC
5	3700 – 3350 calBC	3790 – 3100 calBC	3700 – 2950 calBC
6	3780 – 3640 calBC	3780 – 3640 calBC	3740 – 3430 calBC

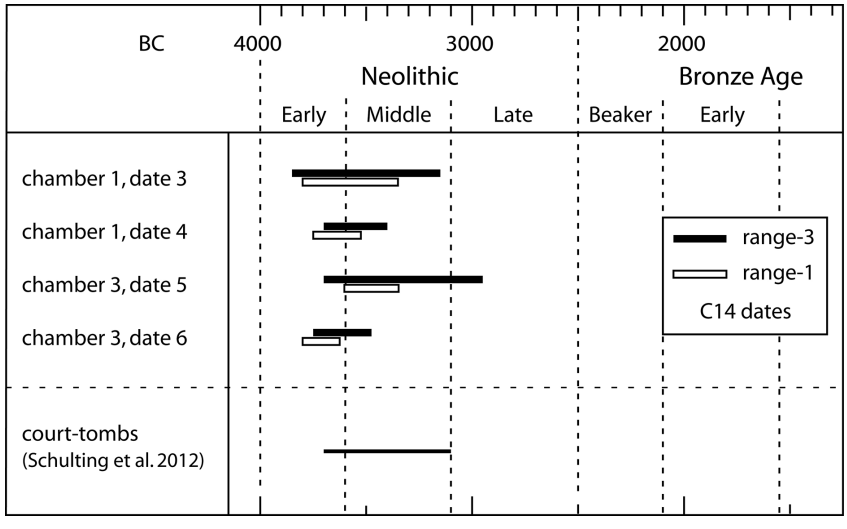
Table 20 Calibration of radiocarbon dates in three ranges.

problems than 'charcoal'. However, at the time of the excavation the technology to date this material was not available.

NOTES

1. Note that where em =1, sd* is the same as sd (as here with dates 4 and 6).
2. The method of adjustment is to use the 'offset modifier' in OxCal where the offset is given the parameters al/2 ± al/4. This does not assume that there is an 'own-age' problem, but allows for the high probability of its presence.
3. Bronk Ramsey 2009; OxCal 4.2 uses the IntCal13 database of Reimer *et al* 2013.
4. Except for dates 4 and 6, where ranges 1 and 2 are the same.
5. The test of Ward and Wilson (1978) applied to the raw ages 3 to 6 (uncalibrated and unadjusted) show that the ages are incompatible (at the 99% level) with the hypothesis that they represent the same event. This clear rejection is due to the inadequate error term and the probability of an 'own-age' effect on some samples. The range 3 calibrated dates are, on the other hand, quite compatible with that hypothesis (but do not, of course, prove it).
6. It should be noted that the conclusions of Schulting *et al* (2012) are heavily based on the dating of cremated bone, using AMS counting. In such cases there is no need to allow for any 'own-age' problem, or enhanced standard deviation (em=1), and ranges 1, 2 and 3 will be identical.

Fig 28 The Creggandevesky dates in range-bar format.



APPENDIX 4
BONE REPORT

LEONARD WILKINSON

INTRODUCTION

There are 75 separately labelled packets of bone, 42 of which have find numbers, comprising only about 780g of bone altogether. Most of this comes from the cairn material near the entrance area of the tomb. There was probably some re-distribution from the burrowing of animals. Some was found in the first chamber near the entrance, and there were several small deposits in the court area, mostly close to the entrance. There were no finds in the second chamber, and only a minute amount of bone (2g) in chamber 3. The residual evidence is thus either very fragmentary or disturbed. Rather than taking the finds in numerical sequence, this report takes a sequence from the inner chamber through the entrance to the court area. The small average size of individual fragments probably indicates that they were crushed at some stage prior to burial, but there are some remains in the court area where fairly fragile bones have survived. It is noteworthy that the burial in chamber 3, which was presumably quite discrete, has disintegrated in comparison to the relative survival of bones elsewhere. Unless the micro-environment was more hostile this suggests one of two possible explanations: either the bones had been heavily pulverised prior to burial or they had been buried for a much longer period of time. The latter explanation, implying that the grave was closed after the initial burial(s), would account for the aggregations in the entrance area.

Some of the bones have no find numbers, and these will be described according to location.

SCHEDULE

Chamber 3

Only 2g of bone, consisting of a few very small fragments, each less than 0.5cm in length, and mostly cancellous bone. One tiny fragment of cortical bone. No regionally identifiable bone.

Chamber 2

No bone recovered.

Chamber 1

991 Weight 65g. Sixteen skull vault fragments, maximum length 2.2cm and up to 7mm in thickness, including occipital, parietal and temporal areas. No sutures are present. There are 25 long bone fragments up to 4cm in length and 5mm in cortical thickness. One rib fragment.

Conclusions: probably a discrete burial, adult, probably male as judged by skull thickness.

1084 Weight 31g. Seven fragments of skull vault, maximum length 3.3cm and thickness 4mm. There are two sutures, one of which shows endosteal fusion. Thirteen long bone fragments, mostly from upper limb, up to 2.9cm in length and 4mm in thickness.

Conclusions: probably a discrete burial. Adult. Sex indeterminate in such a small sample but on evidence available more probably female than male.

1198 Weight 4g. Eight long bone fragments up to 2cm in length and 2.5cm thick.

Conclusions: the evidence that this is an individual burial comes from location only. Sex and age are indeterminate.

1054 Weight 21g. Four thin skull vault fragments up to 2cm in length and 3mm in thickness. One tip of tooth root of adult type. Twelve fragments of slender long bones up to 2cm in length and 4mm cortical thickness, probably all from upper limbs. Two metacarpal fragments. One phalangeal fragment from foot. One small piece of vertebral neural arch.

Conclusions: a discrete deposit as shown by regional nature of remains. Adult. Sex indeterminate on small size sample, but on evidence available probably female.

Fourteen collections of bone. No find numbers. Total weight 150g. Fourteen skull fragments of vault up to 3.2cm long and 4mm thick, also fragment of orbital margin and one of a petrous temporal bone. Four rib fragments. Sixty long bone fragments up to 4.5cm in length and cortical thickness up to 3.5mm; these are mostly upper limb bones. One terminal phalanx.

Conclusions: there is some evidence from general appearance that the bones under the lintel, L16 were a deposit separate from the rest.

It is not possible to state with any certainty how many individuals are represented. Five deposits

had both skull and long bones included, and four of these may represent separate individuals, but this is speculative only, since regional representation is sparse and there is no duplication of particular bones. One deposit is very much whiter and more eroded than the others, but this is probably more attributable to microenvironment than duration of burial.

Labelled 'No 2 under lintel'. Weight 17g. Two skull vault fragments, one of frontal bone 2.7cm long and 6mm thick including small part of frontal sinus and one of parietal 2.3cm long and 3mm thick. Eight long bone fragments including one piece of humeral shaft 2mm thick, and forearm bone fragments. A 2cm rib fragment. One phalangeal fragment with fused epiphysis.

Conclusions: adult, probably female.

Labelled 'No 3 under lintel'. Weight 28g. Five small skull vault fragments, up to 2cm long and 3.5mm thick, one with an unfused suture. Fourteen long bone fragments up to 6cm in length, mostly forearm bones, but including one piece of humeral shaft 3.5mm thick and a piece of femoral shaft 6.5mm thick at the linea aspera. One small piece of phalanx from the foot.

Conclusions: adult, probably female and possibly the same individual as in the previous deposit.

Labelled 'No 3 under lintel'. Weight 15g. Skull: one maxillary fragment. One piece of zygoma. Long bones: three fragments of forearm bones up to 2.2cm in length. Three metacarpel shaft fragments.

Conclusions: adult. Probably the same individual as previous two samples.

Layer 16 under lintel. Weight 36g. Four small skull vault fragments with a maximum thickness of 2.5mm. One fragment of hard palate. Twelve pieces of long bone up to 3.2cm in length and 2.2mm cortical thickness. One fragment of a proximal phalanx of a hand and one intermediate phalanx of a foot. Two rib fragments. There were also three thin long bone fragments under cairn debris in this area.

Conclusions: adult, sex doubtful, because of the small quantity of material, but more likely to be female on the evidence available.

Layer 16 under lintel. One fragment of tooth bearing area of maxilla, four tooth fragments comprising two upper incisor teeth, presumably the same individual as in the previous deposit.

In cairn collapse

Quadrants 2/4, layer 7. Weight 108g. Twenty five fragments of skull vault up to 2.2cm long and 5mm thick. Sutures show some endosteal fusion. One fragment of petrous temporal. One 2.2cm fragment of tooth-bearing region of left maxilla. Two tooth root fragments, one of lower incisor, one of upper incisor. Border of mandible. Forty-two long bone fragments, up to 3cm in length include six of humerus with a shaft thickness of 4mm and three femoral fragments up to 5mm thick. There are some forearm and fibular fragments and three metacarpal or metatarsal fragments. four articular surfaces include one of humeral head, one of lower end of humerus, two of tibial plateau. One lunate carpal bone.

Conclusions: this is more regionally representative and not so crushed as the previous specimens. It is probably an individual deposit. The evidence as to sex is conflicting, and this is regarded as indeterminate.

The following deposits with find numbers weighed 70g altogether and probably represents two individuals.

119 Quadrant 4, L7. Two pieces of femoral shafts up to 3.3cm in length and 4.5mm. One metacarpal shaft.

120 Quadrants 2/4, L7. One long bone fragment, probably humeral 2.1cm long and 4mm thick.

121 L7. Two thin pieces of skull vault up to 1.5cm long and 3mm thick. One unfused suture.

122 Quadrant 4, L7. Skull: one piece of vault 2.7cm x 3.5mm. One suture shows endosteal fusions. (Adult) long bones: eight humeral shaft fragments up to 8.3cm long and 4.5mm thick. Seven forearm bone shaft fragments up to 5.4cm long. One intermediate phalanx of hand. One phalanx with unfused emphysis at the base (adolescent). Unlabelled specimen from this area — skull: one adolescent type right petrous temporal bone. Long bones: six forearm bone fragments up to 3.3cm long and 2mm thick. One intermediate phalanx. One fragment of tibial plateau and two of tibial shaft.

134 Quadrant 2, L7. Skull: eight fragments of vault, mostly small. One piece of parietal bone is 3.3cm long and 4mm thick. One suture shows endosteal fusion (adult). Three forearm bone fragments up to 3.8cm long. Three metacarpal shafts. There are two fragments probably of adolescent origin: an articular fragment possibly from a femoral condyle which appears to have separated at the epiphyseal plate, and one fragment (possibly lower end of radial shaft) which appears to have an emphyseal plate.

135, 136, 166, L7. One fragment of skull base. One humeral shaft fragment 3.1cm long and 4.5mm thick, several unidentifiable small long bone fragments.

Conclusions: the above finds probably represent two burials: one adult male and one adolescent.

Court area

The total weight of bone finds numbered between 209 and 300 is 188g, divided into 27 specimens, some of which are very small in amount. They are described in numerical order.

209 Quadrant 2. Court area near lintel surface of L4. Three fragments of forearm bones, up to 3.2cm in length.

210 Quadrant 2. Court area near lintel surface of L4. Nine small bone fragments, including one piece of cortex 8mm thick from adult male femur.

212 Quadrant 2. Court area near lintel surface of L4. Very small thin flakes of bone shaft, markedly heat-fissured.

226 Quadrant 2. Court area, near lintel base of L7. At base of collapse in court. One fragment of humeral shaft, very heat-fissured. Four fragments of forearm bones, not heat fissured (ie probably two separate individuals). The articular process and part of body of a lumbar vertebra.

228 Quadrant 2. Court area, under lintel L7. Consists mostly of very small flakes of bone. Includes two pieces of skull vault less than 1cm in size, one root of an adult incisor tooth. Three long bone fragments, two from forearm bones, one from metacarpal. one intermediate phalanx with base missing. One vertebral fragment.

230 Quadrant 2. Court area under lintel L7. Mostly very small fragments, include two fragments of skull, the one of ethmoid air sinus and one of base. Three humeral shaft fragments. One forearm fragment.

Note: of the following, numbers 232–241, 250, 268, 278 and 279 are very small deposits of bone, probably representing scatter from original burials.

232 Quadrant 2. Court area under lintel, L7. Very small fragments. One piece of vertebral transverse process, probably from cervical region.

233 Quadrant 2. Court area east of entrance L7. A few fragments of cancellous bone, charred, including part of an atlas vertebra.

234 Quadrant 4. Court area L7. Thin cortical fragments of long bone.

236 Quadrant 4. Court area L7. A fragment of humeral shaft 3.1cm long and 3mm thick.

238 Quadrant 2. Court area west of entrance L7. Three fragments of long bone less than 0.5cm in length and 2mm thick.

241 Quadrant 2. Court area in front of entrance L7. Two small cortical fragments less than 1cm long and 2mm thick.

242 Quadrant 2. Court area under entrance lintel L7. A larger number of small bone fragments mostly less than 1cm in length but including one piece of skull vault 1.3cm long, a fragment of skull base and two cortical fragments of humerus up to 2.5cm long and 2mm thick.

244 Quadrant 2. Court area under lintel L7. One piece of mid-shaft of humerus 5.7cm long and 4.5mm thick, heat-deformed and fissured. Adult, probably male. Also small fragments 1cm or less in size including a thin flake of skull vault and a metacarpal fragment.

250 Quadrant 4. In front of entrance L3. Four thin cortical fragments up to 1.8cm in length and 1.5mm thick, probably from metacarpals.

252 Quadrant 4. Court area under lintel L7. Two small fragments of skull base, 1.5cm fragment of humeral shaft. One long piece of head of femur, 4 x 3.2cm, of adult male type. Three narrow fragments of femoral shaft up to 5cm in length and 4mm thick.

Conclusions: originally this may have been a discrete deposit. Adult. Male.

268 Quadrant 3. On top of eastern arm of court, L7. Five very small cortical bone flakes.

272 Quadrant 4. West of entrance L7. Twenty fragments, mostly small, but including two pieces of humeral cortex up to 3.5mm thick, a forearm fragment, two flat pieces probably of tibial origin up to 2.5cm long and 2mm thick.

278 Quadrant 4. In front of lintel, L7. Five thin cortical flakes up to 2.5cm long and 1mm thick.

279 Quadrant 4. In front of lintel, L7. One piece of cortical long bone 1.5cm long and 2mm thick, similar to previous find and probably from the same source.

281 Quadrant 4. In front of lintel, L7. Two pieces of bone, one is probably femoral, 3.7cm long and 3mm thick, not heat fissured. The other is a 2.4cm fragment probably from mandible.

282 In front of lintel, L7 (two specimens). Five very thin pieces of skull vault, probably squamous temporal. Two humeral fragments up to 1.7cm long and 3.5mm thick. Three forearm fragments. One metacarpal. One flat articular surface, possibly tibial plateau. Three fragments of femoral cortex up to 3.7cm long and 5mm thick, chalky white, not heat fissured. One piece of vertebral neural arch, heat fissured.

Conclusions: this was probably a discrete deposit of an adult female, but there is probably an admixture from another burial.

283 In front of entrance L7. One large femoral shaft fragment 5.2cm long and 5mm thick, of general appearance similar to 282. There are thin cortical flakes included.

299 In front of entrance L7. Three fragments of skull vault up to 1.8cm long and 3mm thick. One suture shows endosteal fusions. One tooth root, probably molar, adult type. Six humeral shaft fragments up to 1.8cm long and 3mm thick. Five forearm shaft fragments. One phalangeal fragment.

Conclusions: probably an individual burial, adult, probably female.

300 Quadrant 4. In front of entrance L7. One small fragment of skull vault. Four humeral shaft fragments up to 2.2cm long and 3mm thick. Three metacarpal fragments. Three pieces of femoral shaft up to 3cm long and 4mm thick. One articular surface, possibly of a tarsal bone.

Conclusions: may be a discrete deposit, or the same as 299. Adult female.

983 Quadrant 4, east of entrance, L7. Weight 26g. Fifteen long bone shaft fragments up to 2.7cm long and 2.5mm thick. One lower end of fibula. One rounded articular surface, possibly metatarsal head. Two rib fragments. One piece of molar root of adult type.

986 Area of entrance L7. Weight 4g. Six long bone fragments up to 2.6cm long and 4mm thick.

1078 Quadrant 4. In front of entrance L14. Weight 13g. Consists mostly of very fine flakes of bone. Includes three skull fragments, one with an unfused suture, one humeral fragment 1.5cm long and 2mm thick, three forearm bone fragments, one terminal phalanx from foot, one rib fragment.

1203 Layer unrecorded, beside portal. Chalky-white small cortical fragments of long bones, up to 1.5mm in thickness.

The following have no find numbers.

Court area, quadrant 2. Close to portal, bottom of L7. Small fragment of skull vault. Three rib fragments. Two forearm bone fragments. Two pieces of femoral cortex one of which includes linea aspera. Cortical thickness 6.5mm.

Conclusions: possibly a discrete deposit, adult male.

Court area, under lintel, below L7. Thin fragments of skull vault, up to 1.6cm long and 3mm thick. One unfused suture. One humeral shaft fragment. One metacarpal fragment. One piece of phalanx and one piece of rib.

Conclusions: possibly a discrete deposit, probably adult, sex indeterminate.

SUMMARY

Because of the disturbed and scattered nature of many of the deposits it is extremely difficult to estimate the number of burials, particularly in the collapse in the entrance area and in the neighbouring court area. There were probably a total of twenty-one individuals as follows:

Chamber 3: one burial, sex and age indeterminate.

Chamber 1: nine adult burials, sex being undetermined in five, one male and three female.

Under lintel in entrance area: four burials, including one adolescent and three adults, one male, one female and one of indeterminate sex.

Court: seven burials, of which three were male, three female and one indeterminate.

The estimation of number of burials is based on any combination of three factors: location, total amount of bone, and regional skeletal representation. In two instances and particularly in chamber 3 the location is the only significant factor. Sex was regarded as indeterminate in eight instances. Five were regarded as probably male, seven as female, but in many of these the quantitative evidence is small and conclusions as regards sex are often tenuous. There is one adolescent, and it is noteworthy that the bones of this burial, more readily individually identifiable than most, are quite scattered under the entrance lintel. No bones of young children were found, though such fragile remains would probably not have survived well. If the estimate of 21 cremation burials is correct, the average residual weight of each is only about 38g.

APPENDIX 5
POLLEN REPORTS A & B

ADELAIDE GODDARD

POLLEN REPORT A (c 1980)

Sampling

A monolith (column) of blanket peat and underlying soil was taken from about 1m outside the excavated area. Small samples were taken from this at 1cm intervals for pollen analysis. The rest of the material was deep frozen so that samples for radiocarbon dating could be obtained at a later date if required. Four soil samples were taken from under a large flat stone from the collapsed part of the cairn.

The stratigraphy of the monolith is shown in Table 21; 0cm was taken to be where obvious mineral inclusion stops.

33.5 to 27.5cm	dark modern turf
27.5 to 21.5cm	lighter brown, fibrous blanket peat
21.5 to 0cm	dark brown, very finely fibrous, greasy blanket peat
0 to -5cm	dark brown mineral soil with stones
approx -5cm	very irregular iron pan
-5 to -8cm	reddish clay, very stony

Table 21.

Pollen samples

The samples chosen for preliminary work are shown in Table 22.

(from monolith)	2 to 3cm	blanket peat
	0 to 1cm	base of blanket peat
	-2 to -3cm	mineral soil
	-4 to -5cm	just above iron pan
	-7 to -8cm	lowest sample taken
(under stone)	0 to -1cm	top sample
	-3 to -4cm	lowest sample

Table 22.

The samples were prepared for analysis in the usual way (see Moore & Webb 1978) and most were counted to a total of 500 grains. The samples from under the stone were more difficult to count so that in these fewer grains were counted (200 and 300 grains). Each pollen type was calculated as a percentage of total pollen. Total tree pollen percentage (AP%) was also calculated for each sample. Spores from ferns and mosses were also counted but these were not included in the pollen total as spore production is thought to be rather erratic. The 'Varia' in the pollen count includes unidentified or unidentifiable pollen grains. The results are shown in Table 23. A pollen diagram was drawn using the results.

Some general notes on pollen analysis

1 Most of the pollen in these samples is likely to have come from plants growing near the sampling point. Therefore the pollen spectra represent very local vegetation and not regional vegetation. Direct comparisons can be made of results from sampling sites around the excavation. The results give very little indication of actual age. However, radiocarbon dates can be obtained from peat.

2 Results from an earlier study on modern pollen spectra give some help in interpretation of pollen diagrams (Goddard 1971). From these studies I concluded:

a The total tree pollen percentage (AP%) in a spectrum gives an indication of the general aspect of the vegetation from which the sample was taken. Spectra from wooded areas had an average AP% of 79%. Scrub woodland spectra had a slightly lower average AP% of 66%. Spectra from clearings in woodland and from the edge of woodland had an average AP% of 40%. The average AP% from open vegetation sites which have trees or woodland in the vicinity is 30%. Completely open vegetation sites had very low AP% values, on average 8%.

b In samples from wooded areas with a distinctly dominant species, this species is also the dominant pollen type. In samples from mixed woodland, pollen representation of a species depends on the other species present and their relative proportions. However, in general, birch and pine tend to be over-represented. Oak, hazel, alder, willow, holly and ash tend to be proportionally represented or slightly under-represented.

c In samples from non-wooded areas, the dominant species is also dominant in the pollen spectra. In mixed vegetation sites grasses are almost always

over-represented. In all samples, the presence of flowering herbaceous plants near the sampling point showed up in the pollen spectra.

3 The interpretation of pollen profiles from soils can be rather difficult. Mineral soils often contain much pollen (especially acid soils). Pollen spectra can be obtained from different levels in a soil and presented in the form of a pollen diagram as from more conventional deposits (peat and lake deposits). However, in the case of peat and lake deposits, the pollen is incorporated sequentially with time in the deposit, whereas the distribution of pollen in soil is due to downward percolation from the surface. Many objections have been raised against the use of pollen diagrams from mineral soils, but most of these objections have been refuted (Goddard 1971). I think that with care pollen diagrams from mineral soils can be treated in a similar fashion to those from peat deposits except that a time scale cannot be applied to the vegetational changes inferred from the diagrams.

4 Pollen from different species of grasses tend to be very similar. It is very difficult to separate different species. However, pollen from cereals tend to be larger than from other grasses. Cereal pollen is generally taken to be bigger than 40μ long. Identification of different cereal pollen types is very difficult.

5 The presence of pollen of Plantago (plantain), Rumex (dock) Urtica (nettle) and to a lesser extent of Caryophyllaceae, and Dipsacaleae are usually associated with human activity.

6 The values of pollen types shown on a pollen diagram are proportional, not absolute; therefore if one or more pollen types increase in value, others must decrease in value.

The pollen diagrams
Monolith (Table 23)
(see overleaf)

-7 to -8cm.The tree pollen percentage in this sample at 54% suggests that the area was fairly wooded but with cleared areas or that the sample came from near the boundary between open and wooded areas. The main tree pollen type is hazel with some alder and birch and small amounts of oak and willow. The flower grass pollen percentage (23%) is relatively high. Most grasses do not flower well in woodland. Therefore it seems there must be a cleared area nearby. Some of the grass pollen was approximately 38–40m in size, which is the marginal size for cereal pollen. This pollen could possibly be of Triticum (wheat). The relatively high Plantago value (5%) and the presence of other weed pollen suggests human activity.

-4 to -5cm. The tree pollen percentage (AP%) is fairly high (70%) with hazel as the main contributor (58%). Birch and alder values have also increased. Grass pollen has decreased from 23% to 9% and the Plantago value has gone from 5% to 2%. These changes suggest a decrease in human activity in the immediate vicinity and that the vegetation is now hazel wood.

-2 to -3cm. Tree pollen and hazel values are very similar to those of -4 to -5cm. Grass pollen value has decreased to 3% and Plantago to less than 1%. Birch values have increased while Alder values have decreased and Ericaceae values have increased. These possibly indicate areas of drier more acidic conditions. Plantago values have gone back to 2%.

2 to 3cm. This spectrum is very different to those below it. AP% has fallen from around 70% to 20%, mostly due to a fall in hazel values from 59% to 15%. Grass and sedge values have increased but the main increase is in Erecaceae values from 19% to 57%. These changes indicate a change in vegetation from hazel wood to open heather. The Rosaceae value increase is probably due to increase, in the growth of Potentilla spp. which favour acid conditions.

Summary
The lowest pollen spectrum suggests that the area had hazel wood with some cleared areas, probably with human activity nearby (and possibly cereal growing).

The next 3 samples show fairly dense hazel wood. The highest sample (2–3cm) is from open grassy heath.

The decline in hazel values at the base of the blanket peat seems fairly abrupt. This could be due to active clearance of the woodland possibly for grazing.

Clearance of trees in very wet areas would lead to accelerated podsolisation and deposition of an iron pan. The iron pan could cause gradual waterlogging of the soil and increasingly acidic conditions suited to bog plants. These changes would decrease the value of the area as pastureland, and it would probably be abandoned or only lightly grazed.

Samples from under a stone (base of collapse along west side)

The pollen spectra from the samples under the stone were fairly similar, AP% was very high 87% and 82% — due mainly to high hazel values 81%

		Monolith					Under stone		Monolith	
	cm.	2 – 3	0 – 1	-25 to -3	-4 to -5	-7 to -8	0 to -1	-3 to -4	2 – 3	0 – 1
Betula	Birch	5	8	41	30	12	4	—	1	2
Pinus	Pine	—	—	1	1	—	—	—	—	—
Ulmus	Elm	—	—	—	—	—	—	—	—	—
Quercus	Oak	1	4	5	6	9	2	4	+	1
Alnus	Alder	18	37	16	31	22	7	13	4	7
Salix	Willow	—	3	4	1	5	3	4	—	+
Corylus	Hazel	76	293	283	290	220	224	14	15	59
Ilex	Holly	—	1	—	—	—	—	—	—	+
Fraxinus	Ash	1	—	—	—	—	—	—	+	—
Gramineae	Grass	45	22	15	46	115	17	6	9	4
Cyperaceae	Sedge	24	6	22	22	27	9	16	5	1
Ericaceae	Heathers	287	93	85	46	34	2	2	57	19
Plantago	Plantain	3	11	4	11	25	1	3	+	2
Rumex	Dock	—	—	—	—	3	—	—	—	—
Caryophyllaceae	—	—	1	1	1	4	1	2	—	+
Dipsacaceae	Scabious	—	1	1	—	3	—	—	—	+
Urtica	Nettle	—	—	—	3	2	2	—	—	—
Umbelliferae	Cow-parsley	—	—	1	—	—	—	—	—	—
Rosaceae		34	6	10	1	6	3	4	7	1
Ranunculaceae	Buttercup	—	—	2	—	2	—	—	—	—
Compositae	Dandelion	5	7	—	1	1	—	1	1	1
Cruciferae	Thistle etc	—	1	—	3	4	—	—	—	+
Liliaceae		—	—	1	1	—	—	—	—	—
Galium	Bedstraw	—	1	—	—	—	—	—	—	+
Hedera	Ivy	—	1	—	—	—	—	—	—	+
Varia		1	4	5	6	6	5	2	+	1
Total pollen		500	500	500	500	500	300	200		
Polypodium		—	—	2	3	11	16	17	—	—
Ferns		—	—	11	18	30	15	21	—	—
Spores: Pteriduim	Bracken	4	1	7	9	14	—	1	1	+
Sphagnum		—	3	4	1	—	—	—	—	+
Other spores		1	—	—	—	—	3	2	+	—
Tree pollen (AP)		101	346	350	359	268	260	164	20	69

Table 23 Percentages of total pollen (to nearest %) + (less than 1%).

		Under stone		
-2 to -3	**-4 to -5**	**-7 to -8**	**0 to -1**	**-3 to -4**
8	6	2	1	—
+	+	—	—	—
—	—	—	—	—
1	1	2	1	2
3	6	4	2	7
+	+	1	1	2
57	58	41	81	71
—	—	—	—	—
—	—	—	—	—
3	9	23	6	3
4	4	5	3	8
17	9	7	1	1
+	2	5	+	2
—	—	+	—	—
+	+	1	+	1
+	—	+	—	—
—	+	+	1	—
+	—	—	—	—
2	+	1	1	2
+	—	+	—	—
—	+	+	—	+
—	+	1	—	—
+	+	—	—	—
—	—	—	—	—
—	—	—	—	—
1	1	1	2	1
+	+	2	5	9
2	4	6	5	11
1	2	3	—	+
+	+	—	—	—
—	—	—	1	1
70	72	54	87	82

27.5 to 33.5cm	Dark brown modern turf
21.5 to 27.5cm	Lighter brown peat, fibrous
0 to 21.5cm	Dark brown, greasy, finely fibrous peat
0 to -4cm	Dark brown peaty mineral soil with small stones
-4 to -5cm	Irregular iron-pan
-5 to -8cm	Reddish clay/sand with numerous small stones

Table 24.

and 71%. These values suggest quite dense hazel wood around the site. Grass values are low 6% and 3% and Ericareae values extremely low (1%).

The stone chosen was large and flat so it is unlikely that there was much infiltration of pollen either downwards or sideways into the soil samples. So the conditions indicated by the pollen spectra 0 to -1cm were probably those present when the collapse of stone took place.

The spectra from under the stone do not correspond exactly with any of the samples from the monolith. They could just possibly be from the period represented in the monolith from -4 to 0cm. But it seems more likely they are from an earlier period not represented in the monolith.

Pollen report B (c 1982)
Samples for pollen analysis were taken from the locations shown in Fig 29.

Site 1
A monolith of peat and underlying mineral soil was taken about 1m from the edge of the east baulk of the excavation. The stratigraphy is shown in Table 24; 0cm was taken as the level where obvious mineral content stopped.

Site 2
Five contiguous small samples (2cm in depth), were taken from the soil below the peat at the north baulk of the excavation (see Fig 1).

Site 3
One of the large revetment stones (stone 5) was moved and Site 3 and Site 5 samples were taken from the soil behind it (see Fig 1). Site 3 samples were contiguous 1cm samples from within the soil below the level of the monument through a very dark layer to a sandy/stony layer.

Site 4
These four samples were taken at 2cm intervals through the clay/sand to the mineral soil (see Fig 1).

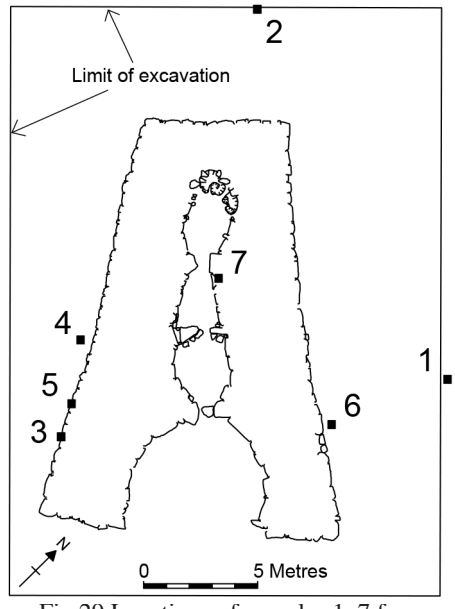


Fig 29 Locations of samples 1–7 for pollen report B.

Site 5
This was a single sample taken from a very dark (charcoal) layer which occurred around the base of stones 5 to 8; the sample was taken near stone 8.

Site 6
These samples were from the soil under a fallen orthostat.

Site 7
These samples were taken from the surface downwards through the soil under a large stone in the middle chamber.

Pollen preparation and pollen diagrams
The samples used for pollen analysis were treated with KOH, followed by treatment with hydrofluoric acid if the sample was mineral, followed by acetolysis and mounted in glycerol (as described in Moore & Webb 1978). Where possible at least 300 pollen grains were counted per sample. However, some samples contained so little pollen that only 100 grains could be counted in a reasonable time. Percentages of the different pollen types were calculated using the total pollen sum. There are many ways of discussing this diverse collection of samples but I have chosen to consider it under four headings as follows:

Group A Samples from soil below or very close to the court tomb.

Group B Samples from below or around the level of the court tomb but outside it.

Group C Samples from soil between stones of monument.

Group D Peat development outside the monument.

Group A

This group consists of site 6, site 7 and the lower samples of sites 3 and 4. All the samples in this group were of very sandy, stony soil. Most of the samples were from under large stones so the effects of downwash or sideways wash should be minimal. The pollen should have been derived from the vegetation prior to the construction of the monument. Pollen density was very low in all samples and only a low pollen count (100 total pollen) could be reasonably obtained from each sample. This diminishes the possibility of detailed interpretation. However, the pollen spectra show an overall similarity. The main feature of the spectra is the very high tree pollen percentages, ranging from 75% to 93%, consisting mainly of Corylus (hazel), 59% to 85%, and Alnus (alder), 2% to 11%. Quercus (oak) and Pinus (pine) pollen is present in very small quantities in most samples. By comparison with modern spectra these results suggest that the immediate area was hazel wood with some alder and occasional oak and pine trees. The ground vegetation was a mixture of grasses and ferns.

Group B

There are two sets of samples in this group, site 1 (east baulk) and site 2 (north baulk). Site 1 is 6m east of the monument and site 2 is 5m north of the monument and the two sites are 19m apart. Both sites were covered with peaty soil and the samples being considered were from the sandy, stony layers with iron-pan, below this soil. Despite being relatively close to each other the two pollen profiles are very different.

Site 1 (east baulk): the tree pollen percentages which vary between 54% and 72% are composed mainly of Corylus (45% to 59%) with Alnus (3% to 7%) and Betula (+ to 8%) and with some Quercus (+ to 2%) and Salix (willow, + to 2%). This pollen will have been washed down from surface vegetation and should represent the vegetation before and around the time of the establishment of the peat. The pollen spectra suggest that the landscape was fairly open hazel wood. The non-tree pollen is composed mainly of Ericaceae (heathers) and Gramineae (grass) pollen with smaller amounts of Cyperaceae (sedges), Plantagolanceolata (plantain) and Rosaceae pollen.

Site 2 (north baulk): the tree pollen percentages are relatively low (25% to 43%), suggesting either very open woodland or open vegetation with some woodland in the vicinity. The main trees represented are Corylus (19% to 40%), Alnus (2% to 6%) and Betula (+ to 3%). The non-tree pollen curves are dominated by Gramineae (18% to 27%) and Plantagolanceolata (17% to 28%), with some Cyperaceae, Ericaceae, Compositae (dandelions, thistles etc) Rosaceae and a wide range of other herbaceous species. These spectra indicate that the area around the sampling site had grassy, weedy vegetation, possibly well trampled by man or animals or both.

Although these two sites are close to each other their pollen profiles are so different that it seems unlikely that they represent contemporaneous vegetation. At site 1 there are very abrupt changes in the pollen curves at the junction of the sub-peat soil and the peat. Such changes indicate a sudden and drastic change in vegetation from woodland to grassy heath. If the trees had been cleared for building or agricultural purposes one might have expected a period of more grassy, weedy vegetation before the onset of peat accumulation. There is no indication of this having happened. The other main possibility is that part of the pollen record is missing. This could be due to removal of soil, perhaps with the pollen representing the very trampled vegetation indicated at site 2. Removal of the top layers of soil would expose very sandy material which fresh pollen could penetrate easily. It seems likely that the relatively high Ericaceae values in the soil are due to downwash from the peat into material containing much older pollen. The origin of the pollen in the soil could be a mixture of pollen from hazel wood present before use of the site, pollen from the vegetation during use and just after use, and pollen from the intermediate stages of soil to peat growth. (The situation has been made worse by the removal or ploughing of all the peat around the monument, so that no further samples can be obtained to possibly elucidate this problem.)

Group C

This group consists of samples of soil from between the stones of the monument, ie most of the samples from site 3 and the one sample from site 5. These samples have very high tree pollen values (83% to 94%), most of which is either Corylus (72% to 83%) or Alnus (4% to 12%), with small amounts of Quercus, Pinus and Ulmus (elm). The main non-tree contributors are Gramineae, Caryophyllaceae and large amounts of fern spores. These spectra are very similar to those in group A, suggesting that this soil was added at the time of building the monument.

There is very little Ericaceae pollen present so that inwash from the surface does not seem to have been significant in these samples.

Group D

Development of peat at this site is represented by the upper samples of site 1. As discussed under Group B, the change from pre-peat vegetation to peat appears to be very abrupt and there is the possibility of some of the pre-peat soil being missing. The samples counted were relatively uniform; low tree pollen percentages (10% to 20%), high Ericaceae values (45% to 57%), moderate Gramineae values (9% to 27%), rising Cyperaceae values (5% to 17%), relatively high Rosaceae (mostly Potentilla) values (3% to 7%). These spectra reflect the grassy heath vegetation which persists to the present day.

A radiocarbon date (UB-2529) of cal AD 900–1220 for the peat from 0 to 2cm in profile1 gives the date for the beginning of growth of blanket peat at the monument. The peat is likely to have been forming earlier at lower levels around the site and to have gradually progressed to the slightly higher ground. This date could also imply that there was a long period of time prior to peat formation with no accumulation of soil at the site possibly due to erosion.

Site 1										
cm	**18 – 19**	**14 – 15**	**6 – 7**	**4 – 5**	**2 – 3**	**0 – 1**	**0 to -1**	**-2 to 3**	**-4 to -5**	**-7 to -8**
Betula	6	9	2	2	5	8	1	41	30	12
Pinus	—	—	—	—	—	—	—	1	1	—
Ulmus	—	2	—	—	—	—	—	—	—	—
Quercus	5	—	4	4	1	4	1	5	6	9
Alnus	4	11	9	11	18	37	15	16	31	22
Salix	—	—	—	—	—	3	7	4	1	5
Corylus	15	18	19	23	76	293	166	283	290	220
Fraxinus	—	1	2	—	1	1	—	—	—	—
Ilex	—	—	—	—	—	—	—	—	—	—
Gramineae	52	64	79	80	45	22	29	15	46	115
Cyperaceae	50	13	28	23	24	6	9	22	22	27
Ericaceae	139	156	136	137	287	93	55	85	46	34
Plantagolan	4	2	1	5	3	11	8	4	11	22
Plantago med	—	—	—	—	—	—	—	—	—	3
Rumex	1	—	1	—	—	—	—	—	—	3
Umbelliferae	—	—	—	—	—	—	—	1	—	—
Leguminosae	—	—	—	—	—	—	—	—	—	—
Caryophyllaceae	—	—	—	—	—	1	—	1	1	4
Rosaceae	19	18	15	10	34	6	4	10	1	6
Rubiaceae	—	—	—	—	—	1	—	—	—	—
Ranunculaceae	1	—	1	—	—	—	—	2	—	2
Cruciferae	—	—	—	2	—	1	—	3	3	4
Compositae-Tub	1	1	—	1	—	3	—	—	—	—
Compositae-Lig	—	—	—	2	5	4	—	—	1	1
Dipsacaceae	11	1	1	—	—	1	—	1	—	3
Urticaceae	—	—	—	—	—	—	—	—	3	2
Labiatae	—	—	—	—	—	—	—	—	—	—
Varia	2	4	2	—	1	4	4	5	6	6
Other pollen	—	—	—	—	—	D+	L+	L+	L+	—
Sphagnum	7	—	2	2	—	3	—	4	1	—
Filicales	—	1	1	—	—	—	5	11	18	30
Polypodium	—	—	—	—	—	—	1	2	3	11
Pteridium	6	2	1	1	4	1	1	7	9	14
Other spores	—	—	—	1	1	—	—	—	—	—
Tree pollen %	10	14	12	13	20	69	63	70	72	54
Total pollen	300	300	300	300	500	500	300	500	500	500

Varia = unidentified pollen grains.
Other pollen: D = Drosera, L = Liliaceae, G = Geraniaceae, P = Primulaceae, Lo = Lonicera.

Table 25 Creggandevesky pollen counts, report B.

	Site 2					Site 3					
cm	**1 – 2**	**0 to -1**	**-2 to -3**	**-4 to -5**	**-6 to -7**	**8 – 9**	**6 – 7**	**4 – 5**	**3 – 4**	**2 – 3**	**0 - 1**
Betula	7	14	13	6	2	1	—	—	—	—	—
Pinus	—	1	—	—	—	2	5	—	1	2	1
Ulmus	—	—	1	—	—	1	—	—	1	—	—
Quercus	2	3	6	4	—	—	—	2	1	1	3
Alnus	18	29	24	8	12	18	9	6	6	16	11
Salix	1	1	1	—	—	—	—	—	—	—	—
Corylus	94	115	142	147	199	113	72	81	115	207	77
Fraxinus	—	—	—	—	1	—	—	—	1	—	—
Ilex	1	—	—	—	—	—	—	—	—	1	—
Gramineae	124	118	132	122	92	6	6	5	5	10	5
Cyperaceae	12	14	20	19	22	—	1	1	—	—	1
Ericaceae	42	29	27	43	38	—	2	—	1	—	—
Plantagolan	139	117	89	102	87	—	—	—	—	1	—
Plantago med	3	4	1	5	1	—	—	—	—	—	—
Rumex	—	—	1	—	—	—	—	—	—	—	—
Umbelliferae	1	1	—	1	—	—	—	—	—	—	—
Leguminosae	—	—	1	1	—	—	—	—	—	—	—
Caryophyllaceae	2	2	2	3	4	3	—	2	10	1	—
Rosaceae	10	8	7	9	5	—	—	—	—	—	1
Rubiaceae	1	1	1	—	—	—	—	—	1	—	—
Ranunculaceae	1	3	2	6	12	—	—	—	—	—	—
Cruciferae	1	1	1	—	—	—	—	—	—	—	—
Compositae-Tub	1	—	1	1	4	—	—	—	—	—	—
Compositae-Lig	31	29	21	13	13	—	—	—	—	—	—
Dipsacaceae	1	1	1	3	1	—	—	—	—	1	—
Urticaceae	—	—	1	2	—	3	1	—	2	—	—
Labiatae	4	—	1	—	—	—	—	—	1	—	—
Varia	4	9	4	5	7	3	4	3	1	8	1
Other pollen	—	—	—	—	—	—	—	—	P1	G1	—
										Lo1	
Sphagnum	2	2	1	—	1	—	—	—	1	1	1
Filicales	8	15	6	11	12	7	7	23	38	101	36
Polypodium	3	5	3	9	5	9	14	9	14	24	3
Pteridium	68	45	42	12	10	—	1	—	4	1	—
Other spores	1	2	—	—	—	—	—	1	2	1	—
Tree pollen %	25	33	37	33	43	90	86	89	83	91	92
Total pollen	500	500	500	500	500	150	100	100	150	250	100

Table 25 (continued).

	Site 4			Site 5		Site 6	
cm	**3 –-4**	**0 to -1**	**-2 to -3**		**0 to -1**	**-1 to -2**	**-3 to -4**
Betula	—	—	—	—	4	1	—
Pinus	2	1	3	—	—	—	—
Ulmus	2	1	—	—	—	—	—
Quercus	1	1	1	—	2	1	4
Alnus	3	10	8	11	7	13	13
Salix	—	—	—	—	3	1	4
Corylus	70	73	81	83	244	246	143
Fraxinus	—	—	—	—	—	—	—
Ilex	—	—	—	—	—	—	—
Gramineae	15	6	3	—	17	11	6
Cyperaceae	1	2	—	—	9	9	16
Ericaceae	—	—	—	—	2	3	2
Plantagolan	—	1	2	1	1	1	3
Plantago med	—	—	—	—	—	—	—
Rumex	—	—	—	—	—	—	—
Umbelliferae	—	—	—	—	—	—	—
Leguminosae	—	—	—	—	—	—	—
Caryophyllaceae	1	—	—	—	1	1	2
Rosaceae	—	2	—	3	3	4	4
Rubiaceae	—	—	—	—	—	—	—
Ranunculaceae	1	—	—	—	—	—	—
Cruciferae	—	—	—	—	—	—	—
Compositae-Tub	—	—	—	—	—	—	—
Compositae-Lig	—	—	—	—	—	—	1
Dipsacaceae	—	—	—	—	—	—	—
Urticaceae	—	—	—	1	2	—	—
Labiatae	2	—	—	—	—	—	—
Varia	2	3	2	1	5	8	2
Other pollen	—	—	—	—	—	L1	—
Sphagnum	—	—	—	—	—	1	—
Filicales	6	7	18	18	15	15	21
Polypodium	5	4	3	10	16	11	17
Pteridium	1	0	0	0	0	3	1
Other spores	1	2	4	0	3	0	2
Tree pollen %	78	86	93	94	87	87	82
Total pollen	100	100	100	100	300	300	200

Table 25 (continued).

Site 7					
cm	**0 to -1**	**-1 to -2**	**-2 to -3**	**-3 to -4**	**-4 to -5**
Betula	—	—	1	—	—
Pinus	9	1	—	1	1
Ulmus	—	—	—	—	—
Quercus	—	4	4	—	1
Alnus	7	7	11	5	5
Salix	—	1	—	—	—
Corylus	59	61	66	77	85
Fraxinus	—	—	—	—	—
Ilex	1	1	—	—	—
Gramineae	14	19	13	12	2
Cyperaceae	4	1	1	—	1
Ericaceae	—	1	—	—	2
Plantagolan	3	1	—	1	—
Plantago med	—	—	—	—	—
Rumex	—	—	—	—	—
Umbelliferae	—	—	—	—	—
Leguminosae	—	—	—	—	—
Caryophyllaceae	—	—	—	—	—
Rosaceae	—	—	2	1	1
Rubiaceae	—	—	—	—	—
Ranunculaceae	—	—	—	—	—
Cruciferae	—	—	—	—	—
Compositae-Tub	—	—	—	—	—
Compositae-Lig	—	—	—	—	—
Dipsacaceae	—	—	—	—	—
Urticaceae	—	—	—	—	—
Labiatae	—	—	—	—	—
Varia	3	3	2	3	2
Other pollen	—	—	—	—	—
Sphagnum	—	—	1	1	—
Filicales	29	31	34	46	15
Polypodium	14	7	6	6	4
Pteridium	4	—	—	1	2
Other spores	4	3	3	—	2
Tree pollen %	76	75	82	83	92
Total pollen	100	100	100	100	100

Table 25 (continued).

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