Excavation and survey at the Giant's Grave, Slochd Measach, Nereabolls, a Neolithic chambered cairn on the Isle of Islay, Argyll & Bute

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Excavation and survey at the Giant's Grave, Slochd Measach, Nereabolls, a Neolithic chambered cairn on the Isle of Islay, Argyll & Bute: chronology, architecture, reuse and demise

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ABSTRACT

The 'Giant's Grave', formally known as Slochd Measach, Nereabolls (SM3927), is located on the Isle of Islay, Argyll & Bute, in western Scotland and is one of seven confirmed Clyde cairns on the island. We describe the standing remains and the excavations between 2015 and 2017 intended to address the origin, architecture and use of this monument. We found that the cairn was most likely constructed between 3620 and 3360 cal BC in one continuous effort. It was modified and reused on at least four occasions during the Early and Late Bronze Age, and extensively robbed during the Iron Age. This post-Neolithic activity left a small collection of ceramic vessels that may have been used for funerary purposes or votive offerings. We compare the architecture of the Giant's Grave with that of other cairns on Islay and in the wider region.

INTRODUCTION

Neolithic chambered cairns are rich repositories of information about prehistory, including that beyond the Neolithic period. While they inform about the architecture and mortuary traditions of the Neolithic, the date of their construction can provide evidence about the Mesolithic–Neolithic transition and their long-term modification may indicate how later communities used the past within their own present. This contribution describes archaeological fieldwork at Slochd Measach, better known as the Giant's Grave, a Neolithic chambered cairn on the Isle of Islay, Argyll & Bute, designed to address these themes.

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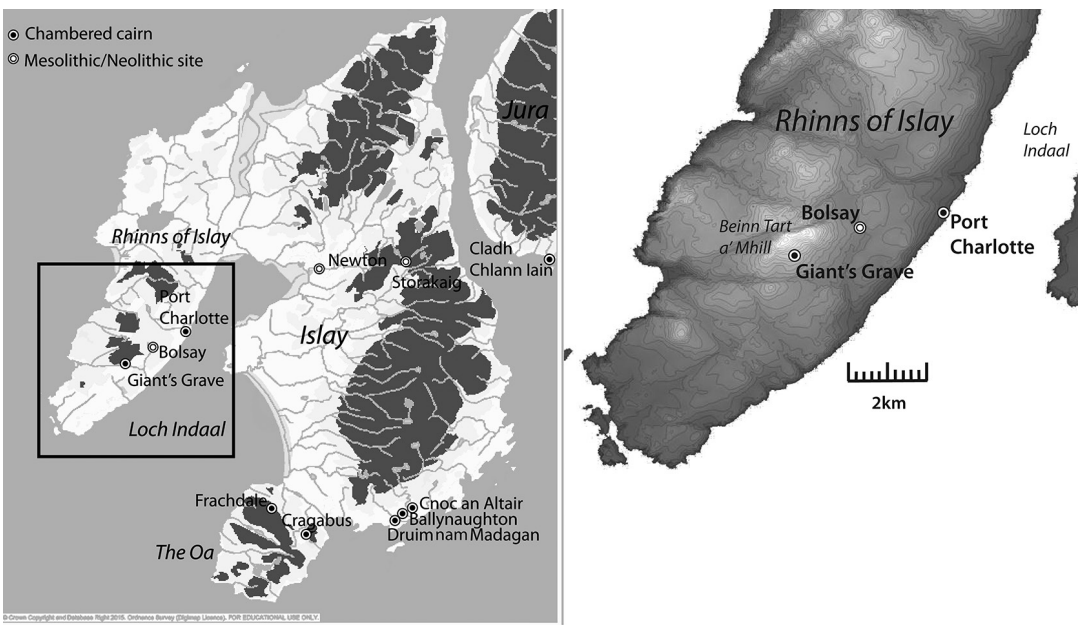
LOCATION

The 'Giant's Grave' is formally known as Slochd Measach, Nereabolls (SM3927, NR25NW 3, Canmore ID 37355), and located on the south-east slope of Beinn Tart a' Mhill on Islay's Rhinns peninsula (NR 2015 5642, 138m OD; Illus 1). The place-name, 'Slochd Measach', appears on the first (1880) and second (1900) edition OS maps next to a scatter of stones, while the Argyll OS Name Books (1868–78) state that the toponym 'Applies to ten large stones some of which are standing' and that 'tradition says that these stones were erected over the Graves of Ancient heroes of British Origin, but what clan there is no record'. 'Slochd Measach' translates as 'platter-shaped hollow', which may derive from the adjacent depression of artificial appearance (Newall & Newall 1961). This is a slight topographic feature, seemingly insignificant next to the substantial megalithic monument, although recent peat growth may have altered its appearance. Following an initial description by Newall & Newall (1961), the monument was surveyed and identified as an Early Neolithic Clyde-type chambered cairn by Henshall (1972, ILY 2), and further described by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS 1984).

The Giant's Grave is one of seven confirmed chambered cairns on the Isle of Islay (Illus 1), all of which are of Clyde type. Only that at Port Charlotte (ILY 1), located 4 kilometres from the Giant's Grave, has been excavated in recent times (Harrington & Pierpoint 1980); the tombs at Ballynaughton (ILY 4) and Cragabus (ILY 3) were explored at the turn of the 19th/20th century by Bryce (1902). Both the Port Charlotte and Giant's Grave (Nereabolls) chambered cairns were mentioned by Scott (1969, 1973) as examples of Clyde cairns exhibiting Irish influence in their construction.

The excavation of the Port Charlotte chambered cairn yielded three broad 4th-millennium BC dates from the occupation deposit pre-dating the construction of the cairn and another two associated with the human bone found within the excavated chamber (Harrington & Pierpoint



Illus 1 Map of Islay showing location of sites mentioned in the text with the insert showing the south part of the Rhinns and the location of the Giant's Grave. (Image by Darko Maričević)

1980). A small number of Neolithic-like artefacts and two charcoal samples that returned 4th-millennium BC dates were recovered from within the huge scatter of Mesolithic artefacts at Bolsay, located equidistant between the Giant's Grave and Port Charlotte cairns (Mithen et al 2000b, 2000c). The only other dated Neolithic material on Islay comes from Newton, 10km to the north-east, where Neolithic Carinated Bowl pottery was found in pits associated with gullies interpreted as fence lines, with dates of 3770–3530 cal BC and 3900–3670 cal BC (GU-1951: 4880±60 BP; GU-1951: 4965±60 BP; McCullagh 1989; all dates in the text have been calibrated in OxCal 4.4.4, Bronk Ramsey 2021, and using IntCal2020 calibration curve, Reimer et al 2020). Numerous scatters of chipped stone containing artefacts attributed to the Neolithic have been recovered by fieldwalking and as chance finds across the island (Mithen et al 2000a).

RESEARCH QUESTIONS

The excavation at the Giant's Grave was undertaken with three aims:

(1) To contribute to our understanding of the Mesolithic–Neolithic transition. This was as part of a long-term programme exploring the Mesolithic–Neolithic transition on Islay, encompassing the Southern Hebrides Mesolithic Project (Mithen 2000) and excavations at Storakaig (Wicks et al 2014) and Rubha Port an t-Seilich (Mithen et al 2015). The key objective was to explore whether pre-cairn activity existed at the Giant's Grave and establish the date of initial construction.

(2) To establish the chronology, architectural history and cultural affiliations of the Giant's Grave within the tradition of chambered cairn building on Islay and in the wider region. Several previously excavated Clyde cairns on the Scottish mainland have shown complex architectural developments from smaller monuments with simple chambers to long cairns with multiple compartments and elaborate façades (Corcoran 1969; Cummings & Robinson 2015). While its standing remains indicate the Giant's Grave is a fully developed Clyde cairn, there are signs of possible multi-phase construction and cultural affiliation with Irish Court cairns (Scott 1969, 1973). As such, the Giant's Grave chambered cairn has the potential to provide evidence for inter-regional contacts relating to the development of Neolithic monumentality on Islay, an island situated along important maritime routes between Ireland and Scotland, the Irish Sea basin, the Hebrides and the Northern Isles beyond.

(3) To explore the long-term biography of a Neolithic monument on Islay. Numerous Neolithic chambered cairns were reused in the Late Bronze Age and Iron Age, being either rebuilt, repurposed or used as locations for depositions of pottery (Armit 1996; Hingley 1996). Blasthill and Ardnacross II chambered cairns on Kintyre, for instance, were remodelled in the Bronze Age (Cummings & Robinson 2015; Cummings 2016) and the deposition of Beaker pottery in Clyde and other tombs is well attested (Wilkin 2016), including sherds found by Bryce (1902) in Cragabus chambered cairn on Islay. With the gradual accumulation of dates from the Bronze and Iron Age on Islay (Regan et al 2022), the role of Neolithic cairns within post-Neolithic lifeways requires consideration.

THE STANDING REMAINS

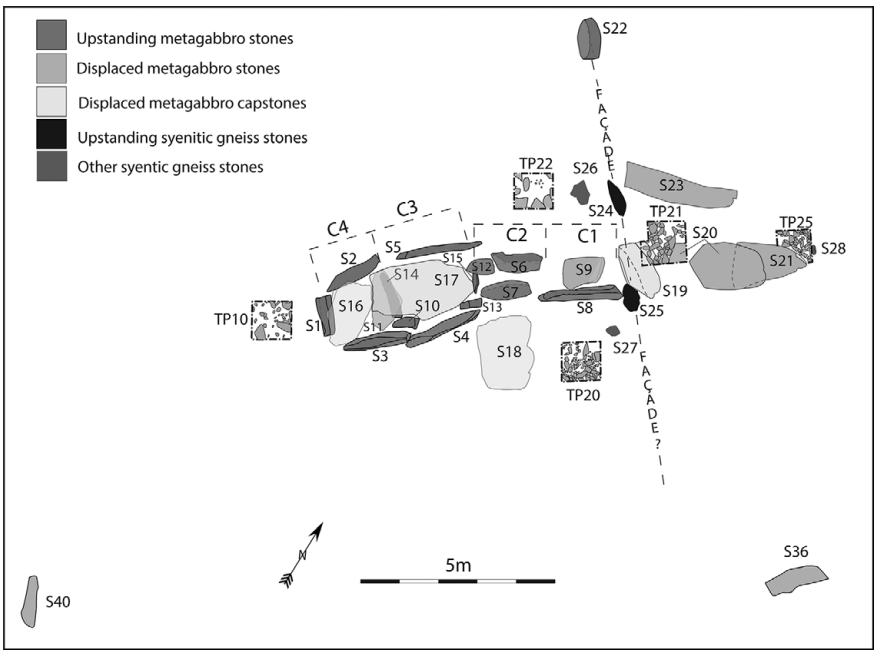
At the time of the visits by Henshall in the early 1960s and the RCAHMS in the mid-1970s, the Giant's Grave was in open moorland with wide vistas to the east and south-east across Loch Indaal to Laggan Bay and the Oa peninsula. The view to the south looks towards Rathlin Island and the Antrim coast, which would be visible on clear days. The site is now located within a clearing enclosed by the Balimony forestry plantation with visibility reduced to less than 100m in any direction. Henshall commented how the interior of the chamber had been cleared and contained

standing water, which is still the case; the surrounding conifers may have promoted further waterlogging. A thick growth of rushes and seasonal bracken now conceals much of the monument (Illus 2).

Following vegetation clearance in 2015, the site plan closely resembled those of Henshall (1972) and the RCAHMS (1984); it remained the same following excavation and reinstatement (Illus 3). The exposed stones, and those later revealed by excavation, were labelled (S1–S40), and interpreted as to their role within the cairn (Table 1). The stones are of two geological types: a greenish metagabbro and a pinkish syenitic gneiss (David Webster pers comm), both found in the immediate vicinity of the site within the underlying Precambrian geological basement known as the Rhinns complex (Muir et al 1992). Both rock types are marked by quartz veins which easily crumble and sheer, this accounting for quartz fragments in most of the excavated deposits.

The exposed chamber has four compartments (C1–C4), oriented south-west/north-east, with an overall length of 7.5m and height ranging between 0.4m and 1.1m above the surrounding peat (Illus 3, 4 & 5). The two rear compartments of the chamber, C4 and C3, are the best preserved, constructed from five massive orthostats S1–S5, all of which remain in situ. After bailing out most

Illus 2 The Giant's Grave from the north before and after vegetation clearance. (Images by Darko Maričević)



Illus 3 Plan of the Giant's Grave before the excavation showing different geologies and the location of in situ and displaced stones. (Image by Darko Maričević)

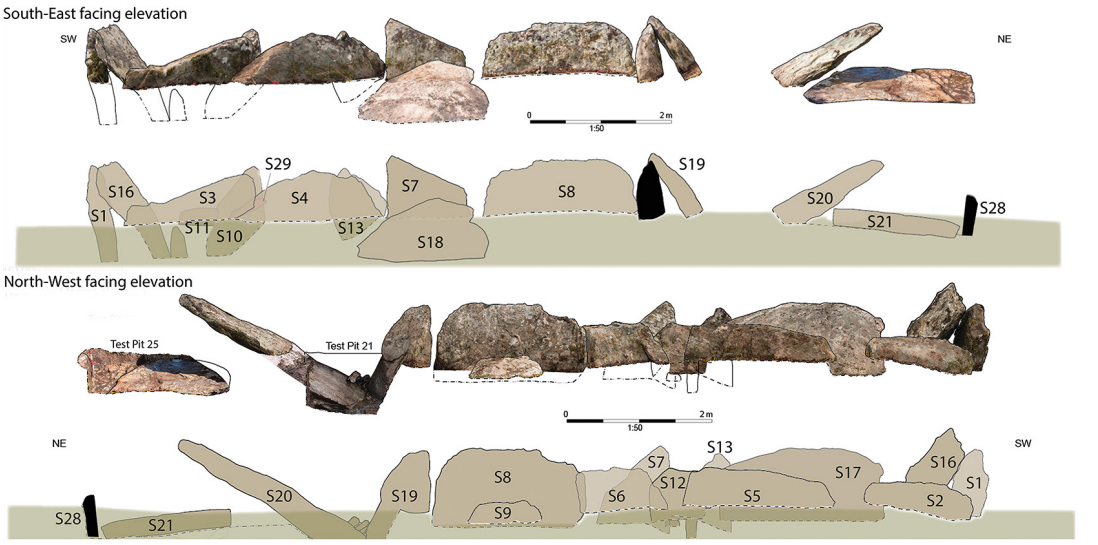
of the standing water from their interior, they were measured to be at least double the height of their external appearance.

Septal stones S14 and S15 remain upright, with S15 between compartments C3 and C2 the highest, although not as tall as the orthostats. Both remaining septal stones are flanked by a pair of jamb stones, S12/S13 at either side of S15 and S10/S11 at either side of S14. Jamb stone S11 had toppled onto septal stone S14 from the north-west, causing the massive capstone S17 (measuring 2.7m × 1.6m) to slip and lean in the same direction. The adjacent capstone S16, *c* 1.8m × 1.7m, rests on orthostats S1 and S2, and leans inwards towards the east. Judging by their size and their relative positions it is probable that the capstones S16 and S17 would have originally overlapped one another.

The two rear compartments, C4 and C3, appear misaligned with the front two compartments, C2 and C1, suggesting two phases of construction (which, following excavation, was found to be incorrect). The somewhat smaller orthostats (S6, S7) of compartment C2, and orthostat S9 of compartment C1, lean inwards over the chamber. Stone S18 lies flat on the ground to the south-east of compartment C2, suggesting a displaced capstone. Similarly, stone S19 may have been the capstone for the front compartment C1. It is embedded into the ground at the front of the chamber and leaning onto stone S25, one of three remaining upstanding stones (S22, S24 and S25) that mark the line of a seemingly straight façade.

Unlike the chamber, which is built exclusively from metagabbro, stones S25 and S24 are both pinkish syenitic gneiss and approximately the same height as the chamber orthostats. S25 is set perpendicularly to the front orthostat S8, marking one side of the entrance. The third upstanding façade stone is a metagabbro monolith S22, located 3m further to the north-west from stone S24 and stands 1.15m above the modern ground surface. Three further large metagabbro stones, S20, S21 and S23, are either leaning or lying flat in front of the entrance and the line of

Illus 4 View of the chamber: (a) from the south-west showing inner compartments C4 and C3; (b) from the north-east showing façade stones S24 and S25 and displaced stones S19, S20, S21 and S23; (c) view through compartment C2 from the north-east showing septal stone S15. (Images by Darko Maričević)



Illus 5 Photographic and illustrated south-east-facing and north-west-facing elevations of the chamber and in-line stones S20, S21 and S28 in the forecourt. (Image by Sarah Lambert-Gates)

TABLE 1
Stones used in the architecture of the cairn

Stone	*Interpretation*	*Geology*
S1	Rear orthostat for chamber compartment C4	Metagabbro
S2	NW side orthostat for chamber compartment C4	Metagabbro
S3	SE side orthostat for chamber compartment C4	Metagabbro
S4	SE side orthostat for chamber compartment C3	Metagabbro
S5	NW side orthostat for chamber compartment C3	Metagabbro
S6	NW side orthostat for C2, leaning to the SE	Metagabbro
S7	SE side orthostat for C2, leaning to the NW	Metagabbro
S8	SE side orthostat for chamber compartment C1	Metagabbro
S9	NW side orthostat for C1, leaning to the SE	Metagabbro
S10	SE jamb stone flanking septal stone S14	Metagabbro
S11	NW jamb stone flanking septal stone S14, fallen inwards	Metagabbro
S12	NW jamb stone flanking septal stone S15, leaning to the SE	Metagabbro
S13	SE jamb stone flanking septal stone S15	Metagabbro
S14	Septal stone between compartments C3 and C4	Metagabbro
S15	Septal stone between compartments C2 and C3	Metagabbro
S16	Capstone for C4, tipped to the east	Metagabbro
S17	Capstone for C3, tipped to the NW	Metagabbro
S18	Capstone from C2(?), displaced to the SE	Metagabbro
S19	Capstone from C1 tipped to the NE, alternatively façade stone rolled to block the entrance	Metagabbro
S20	Inner portal stone in front of the chamber entrance, leaning to the NE	Metagabbro
S21	Façade or portal stone (displaced) or a fallen monolith	Metagabbro
S22	Façade stone to the north-west of the chamber, leaning to the SW	Metagabbro
S23	Façade or inner portal stone to the north-west of the chamber, fallen to the NE	Metagabbro
S24	Entrance jamb/outer portal stone at the north-west side of the entrance	Syenitic gneiss
S25	Entrance jamb/outer portal stone at the south-east side of the entrance	Syenitic gneiss
S26	Possible façade stone to the north-west of the chamber, displaced to the SW	Syenitic gneiss
S27	Stone to the south-east of the chamber	Syenitic gneiss
S28	Small standing stone within forecourt	Syenitic gneiss
S29	Gneiss rubble inserted between S4 and S10	Syenitic gneiss
S30	Gneiss rubble in chamber compartment C2	Syenitic gneiss
S31	Jamb stone between orthostats S6 and S9, fallen to the SE	Metagabbro
S32	Façade stone to the north-west of the chamber, displaced to the SW	Syenitic gneiss
S33	Façade stone to the north-west of the chamber, fallen to the NE	Metagabbro
S34	Part of later structure within forecourt (?)	Syenitic gneiss
S35	Hornwork slab, horizontal in situ stone at the south-east end of the façade	Syenitic gneiss
S36	Façade stone at the south-east end of the forecourt, displaced to the SE	Metagabbro
S37	Façade stone displaced to the NE	Syenitic gneiss
S40	Stone used in stone wall (3003), assumed to have been moved from the cairn	Metagabbro

the façade. S20, *c* 3m in visible height and 1.2m in width, is leaning at a 40-degree angle away from the entrance, suggesting that it may have stood either within it or in front of it. Stone S21, 2.15m long and 0.9m wide, lies flat in its shadow and S23, 3m in length and 0.6m in width, lies to the north-west in front of stone S24. The location of these stones suggests that they were once part of the façade. Another metagabbro stone, S36, is lying 8m SSE from the chamber entrance. As Henshall (1972: 432) suggested, this may have been a fallen façade stone. Stone S40 is an outlier, located 10m to the SSW from the back of the chamber, providing no indication of its original purpose.

SURVEY AND EXCAVATION

The excavation was designed to address the research questions concerning the monument's date of construction, architecture and long-term use, while maintaining in situ evidence to conserve the monument and provide opportunities for future research. Fieldwork consisted of six weeks in total, undertaken in August 2015, 2016 and 2017. Following the vegetation survey, cropping and interpretation of the standing architecture, topographic, geophysical and test-pitting surveys were undertaken followed by an evaluation using test-trenches (Illus 9). Five trenches were then excavated, each aimed at answering specific questions regarding architecture, use and preservation of the cairn or targeting geophysical anomalies. Context descriptions and interpretations are summarised in Table 2 and stratigraphic matrices for each trench provided in Appendix 1. Environmental bulk samples were taken from each context for flotation and laboratory-based fine sieving through 4mm/2mm/1mm/0.5mm sieves. Additional spot samples of charcoal were taken during the excavation. Micromorphology samples were taken through suspected buried soil horizons and are described in Appendix 2. Recovered charred plant remains have been counted and identified to species where possible and the results tabulated in Appendix 3.

TOPOGRAPHIC AND TEST-PITTING SURVEY

A series of 20 half-metre-square test-pits were excavated on a 10m grid in a 60m × 70m area centred on the monument to establish the pre-peat topography, depositional stratigraphy and presence of artefact scatters across the site (Illus 6). The peat was the thickest in the area to the west and the north-west of the chamber, where it filled a natural hollow, reaching a depth of 1 metre, and decreased in thickness to 0.2m across the slope to the south and south-east of the chamber. The peat overlay a buried soil, a dark greyish-brown silty loam, which was often stony and mottled, and of variable thickness. This overlay either bedrock or orange clay interpreted as glacial till. Test-pits TP11 and TP24, 10m and 20m south from the chamber, contained a layer of rubble, which was further exposed within Trenches 3 and 5.

GEOPHYSICAL SURVEY

Darko Maričević and Robert Fry

The underlying geology constrained the use of magnetometry due to being heavily magnetic, thus rendering any archaeological response invisible, while the uneven and dense vegetation prevented the use of ground-penetrating radar. Consequently, the 2015 survey was undertaken using a Geoscan RM15 resistance meter with twin probe configuration, which obtained a 0.5m resolution of the 30m × 20m area. The same method was used to survey the rest of the clearing in 2016 (Illus 7). Because the thickness of the peat sometimes exceeded the capability of this method (maximum 0.75m), it was supplemented by 2.5D Electrical Resistance Tomography (ERT) in 2017, focusing on the area to the south-west and west of the chamber. In contrast to the conventional electrical resistance, ERT can penetrate several metres below the surface, although resolution is progressively lost with depth. The ERT failed to further our understanding of the architecture and extent of the cairn, presumably due to extensive robbing of the cairn and insufficient resolution to detect anomalies at the interface between the bedrock and the peat.

TABLE 2
Excavated contexts (U/L = underlying; O/L = overlying; TP = test-pit; T = trench; FO = fill of; FB = filled by)

Context no.	*Description*	*Interpretation*	*Stratigraphic relationships*
Trench 1			
1000	Thin stone slabs lying horizontally at same level with peat	Stone paving	U/L 1001, O/L 1002
1001	Brown peat	Uppermost peat	O/L 1000, same as 220 in TP22
1002	Black/dark grey peat	Lower peat	U/L 1000, O/L 1006, 1003, 1004; same as 221 in TP22
1003	Rubble within a loamy matrix	Collapse from cairn, possibly a trample layer between fallen façade stones and orthostats	U/L 1002, 1009, O/L 1010, 1014
1004	Dark grey/black peat in south-west corner of T1	Peat formation in the hollow within the rubble next to orthostat S5 of C2	Possibly same as 1002. U/L 1002, O/L 1011
1005	Silty peat	Peat and sediment formation inside waterlogged chamber	Same as 1001 only in standing water. O/L 1009, 1008
1006	Rubble within a loamy matrix	Collapse from cairn, possibly a trample layer abutting orthostat S6	U/L 1002, O/L 1007
1007	Rubble within a peaty matrix	Collapse from cairn, possibly a trample layer, in the south-west corner of T1	U/L 1006, O/L 1011
1008	Rubble within a silty matrix	Collapse from cairn into C2 of chamber, containing previously unseen septal/jamb stone S?	U/L 1005
1009	Rubble within a silty matrix	Collapse from cairn into C2 of chamber	U/L 1005, O/L 1003
1010	Loose rubble in north-west part of T1	Collapse from cairn	U/L 1003, O/L 1011
1011	Substantial stone blocks, stacked and leaning towards chamber, with smaller rubble packing	Foundation layer for the cairn	Butts C2, U/L 1007, 1010, 1004, O/L 1013
1012	Greyish-brown clay/silt	Pre-cairn soil horizon	U/L 1011, O/L 1016, 1018, 1020
1013	Rubble, abutting and underlying orthostat S5	Fill of construction cut for the chamber	FO 1022, U/L 1011
1014	Rubble	Lower rubble infill of C1 chamber compartment	FO 1023, U/L 1003
1015	Pale brown clayey natural	Natural glacial till over bedrock	Cut by 1017, 1019, 1020, 1022, 1023, U/L 1012
1016	Grey silt	Fill of a shallow feature. Similar to 1012	FO 1017, U/L 1012
1017	Artificial depression or cut for a small feature	Depression from removal of larger stone	FB 1016, cuts 1015

TABLE 2
Continued

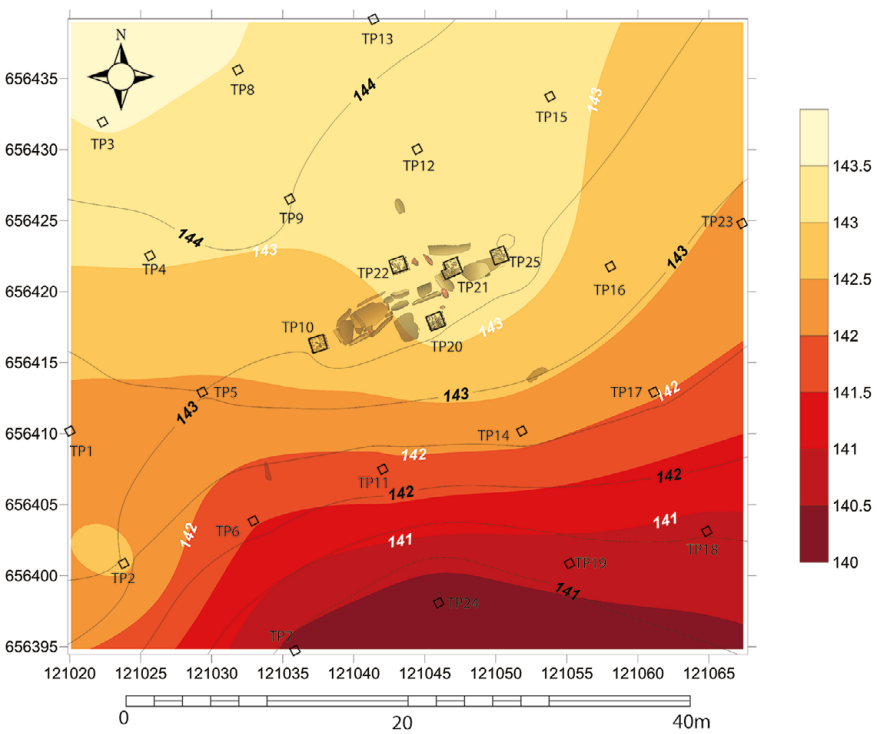
Context no.	*Description*	*Interpretation*	*Stratigraphic relationships*
1018	Grey silt	Fill of a shallow feature. Similar to 1012	FO 1019, U/L 1012
1019	Artificial depression or cut for a small feature	Depression from removal of larger stone	FB 1018, cuts 1015
1020	Grey silt	Fill of a shallow feature. Similar to 1012	FO 0121, U/L 1012
1021	Artificial depression or cut for a small feature	Depression from removal of larger stone	FB 1020, cuts 1015
1022	Cut sloping under orthostat S5	Cut sloping under orthostat S5 representing construction cut for the erection of the chamber	FB 1013, cuts 1015, 1012?
1023	Cut inside chamber compartment C1	Either a robber cut or a construction cut for C1, equivalent to 1022	FB 1014, cuts 1015
1024	Stacked stone slabs	Drystone walling under jamb stone S25 and abutting S8	U/L 1014, FO 1023, butts S8
Trench 2			
1025	Mound of rubble deposit in dark brown silt matrix	Collapse from cairn	Same as 1024
1026	Rubble in dark brown silt matrix in eastern area of T2	Collapse from cairn	U/L 1024, abuts 1030, O/L 1031
1027	Rubble in yellowish-brown silt on top of fallen megalith S33	Collapse from cairn	U/L 1024, O/L 1028
1028	Pile of flat, angular stones between two fallen monoliths S23 and S33	Collapsed drystone walling from between façade stones	U/L 1027, O/L S33
1029	Rubble deposit of large often regular stones, across eastern half of the trench	Collapsed drystone walling from between façade stones	Same as 1028. U/L 1027, abuts S33, O/L 1033
1030	N/S line of large loose stones stretching above S33 and under S23	Wall constructed above rubble from collapsed cairn, and prior to further collapse	U/L 1026, O/L1031
1031	Predominantly greenish rubble with some grey and pinkish stones occupying the space between megaliths S23, S24, S20 and S19	Either collapsed cairn around the chamber entrance, or blocking of that entrance	U/L 1028, O/L 1032, abuts S19, S20, S24
1032	Mid-greenish-grey gritty clayey silt	Sediment accumulation adjacent to stone S24	U/L 1031, O/L 1034, abuts S24, S19
1033	Pale yellowish-brown silty clay in eastern area of T2	Pre-cairn soil horizon	U/L S33, 1029, O/L 1015
1034	Light yellowish-brown silty clay at base of sondage next to S24	Pre-cairn soil horizon	Same as 1033. U/L 1032, abuts S24
Trench 3			
3000	Brown peat	Uppermost peat	
3001	Black peat	Lower peat	U/L 3000
3002	Compact, levelled rubble across T3	Cobble surface constructed post-cairn collapse	UL 3003, O/L 3004

TABLE 2
Continued

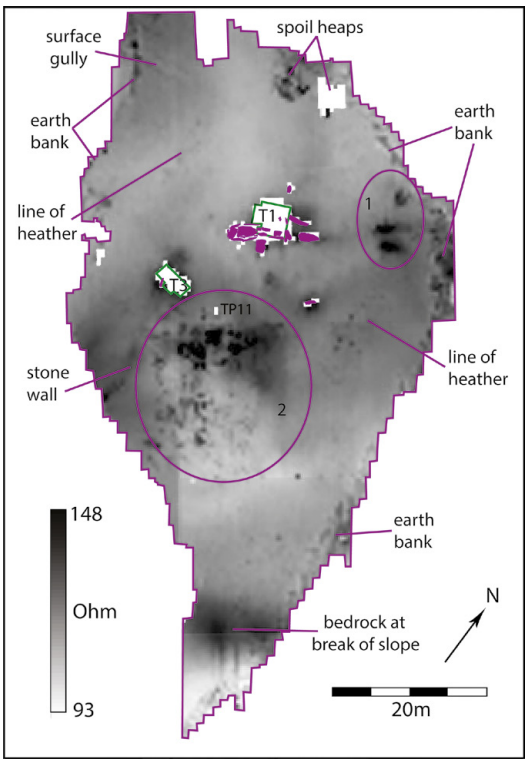
Context no.	*Description*	*Interpretation*	*Stratigraphic relationships*
3003	Linear structure of small boulders and incorporating megalith C?	Field wall associated with cobble surface (3002)	U/L 3002. O/L 3002
3004	Layer of large stones	Basal layer of Neolithic cairn	U/L 3002. O/L 3007
3005	Mid-brown silt		U/L 3007, O/L 3006
3006	Structure from large, flat and sub-rectangular slabs	Kerb and platform of the cairn	U/L 3005, O/L 3008
3007	Dark silt	Sediment accumulation over exposed rubble of cairn	U/L 3004, O/L 3005
3008	Grey/brown silty clay	Pre-cairn soil horizon	U/L 3006, O/L 3009
3009	Pale orange clay	Glacial till	Same as (1015) U/L 3008
Trench 4			
4000	Dark brown peat	Peat	O/L 4001
4001	Rubble in dark greyish-brown silty loam matrix	Collapse from cairn	O/L4003, 4007, 4002, 4010; U/L s36, 4000
4002	Soft dark brown silt with small rubble	Fill of a cist 4004	FO 4004, U/L 4001
4003	Dark brown silt filling a depression	Sediment accumulation in a depression in the south-east corner of the trench over rubble 4006	O/L 4006, U/L 4001
4004	Two perpendicularly set slabs and lining of smallish stones	Roughly constructed cist using collapse from cairn	FB 4002, O/L 4005
4005	Line of flattish stones and small choking stones on the outside	Kerb wall of chambered cairn	U/L 4004, abutted by 4016, 4012, butts 4013, S35
4006	Rubble in dark brown peaty matrix abutting S35 from the east	Collapse from the cairn	U/L 4003, butts S35, O/L 4008
4007	Compact rubble in dark brownish peaty loam overlying wall 4005 at the west end of the trench	Collapse from the cairn	U/L 4001, O/L 4009, butts 4004
4008	Rubble in mid-brownish peaty matrix in the east end of the trench, underlying S35 containing a long flat metagabbro slab	Disturbed remains of the eastern end of the kerb of the cairn	U/L S35, 4006, O/L 4014
4009	Rubble in mid-brownish peaty matrix abutting 4005	Collapse from cairn	U/L 4007, O/L 4011, butts 4005
4010	Small rubble in dark brown silty matrix	Fill of stone socket structure 4013	FO 4013, U/L 4001
4011	Soft dark brown peaty silt	Upper fill of niche 4012 containing SF25	FO 4012, O/L 4015, butts 4005, U/L 4009
4012	Three-sided structure built with rubble blocks abutting the outside of kerb wall 4005	Cist	Butts 4005, FB 4011, 4015, O/L 4016
4013	Compact cluster of elongated large stones set on tip	Stone packing to support a now missing stone that forms the south-east end of the façade	FB 4010, abutted by 4005

TABLE 2
Continued

Context no.	*Description*	*Interpretation*	*Stratigraphic relationships*
4014	Mid-brown silty clay	Pre-cairn soil horizon	U/L 4008, O/L 4017
4015	Dark yellowish-brown silt	Lower fill cist 4012 containing SF27	U/L/ 4011, FO 4012
4016	Compact rubble to the south of kerb wall 4005 (unexcavated)	Collapse from cairn	U/L 4012, abuts 4005
Trench 5			
5000	Dark reddish-brown peat, getting darker and blacker towards the base	Peat	O/L (5001)
5001	Rubble across the whole trench	Collapse from the cairn, either eroded down slope or deliberately laid on surface	O/L 5002, U/L 5000
5002	Dark brown sandy clay with sub-angular and rounded pebbles	Colluvial soil, pre-cairn collapse	O/L 5003, U/L 5001
5003	Mid-orangey-brown sandy clay	Glacial till	U/L 5002



ILLUS 6 Map showing comparative topography of the modern ground surface (black contours) and the base of the peat (colour contours) in relation to the monument and the location of all test-pits. (Image by Darko Maričević)



ILLUS 7 Electrical resistance plot showing areas of main archaeological interest described in the text. (Image by Darko Maričević)

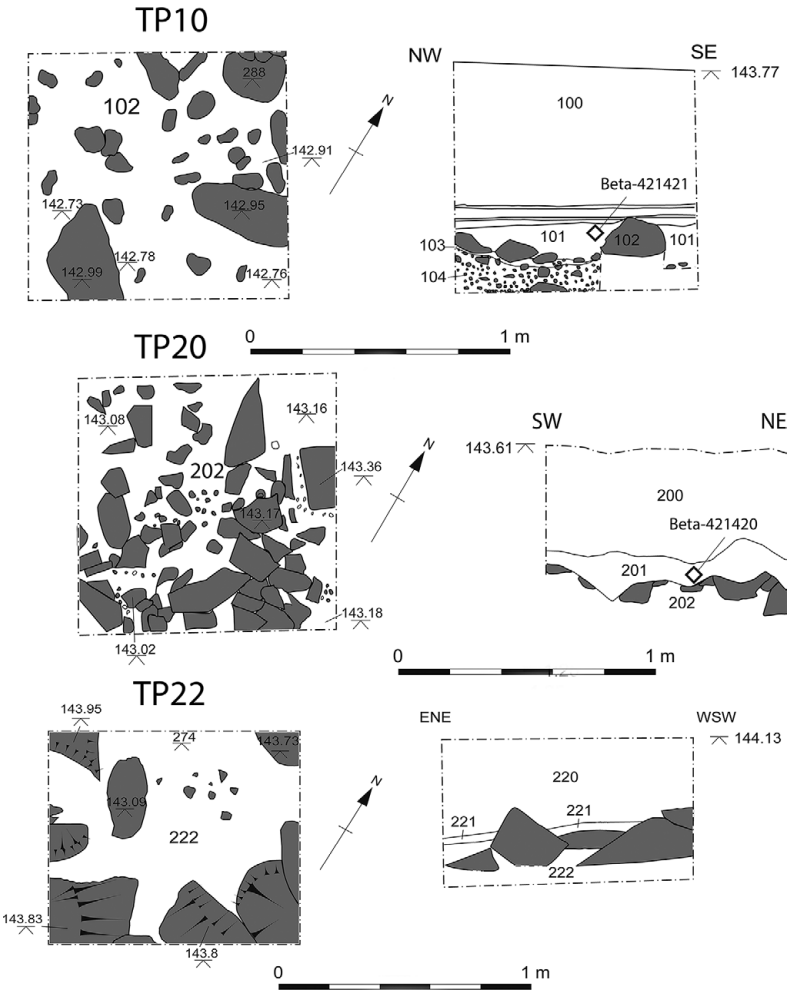
The 2015 geophysical survey identified high-resistance anomalies centred on the remains of the chamber, the fallen monoliths in the forecourt, and around two outlier stones S36 and S40, the latter sitting above a linear south/north oriented feature. These areas were subsequently targeted by excavation. The 2016 geophysical survey identified turf and stone banks of post-medieval date, drainage gullies and traces of a possible rectangular enclosure around the remains of the chamber, which corresponded with prominent lines of heather to its east and west. The survey also revealed two areas of high resistance relating to buried features to the north-east and south of the chamber. In the north-east, three high-resistance anomalies were consistent with the response of buried stones or alternatively raised bedrock. A series of high-resistance anomalies was also found to the south of the chamber, in the area between test-pits TP11 and TP24. These were thought to derive from either the spread of cairn material down the slope, an area of hard standing, or rubble associated with ruined structures. They were sampled by excavation in Trench 5.

SITE EVALUATION

Because the test-pitting and geophysics did not detect any cairn material, five one-metre-square test-trenches (TP10, TP20, TP21, TP22, TP25; Illus 6) were excavated to evaluate the archaeological deposits in the area around the chamber, in an attempt to establish their stratigraphic sequence, obtain dating, and inform further excavation strategy. These test-trenches contained varying thicknesses of peat, starting with 0.75m at the back of the chamber in TP10, 0.40m and 0.35m in the laterally placed test-trenches TP20 and TP22, and up to 0.20m in test-trenches TP21 and TP25 located in the forecourt (Illus 8). In all cases the peat was overlying deposits of large rubble, which could not be fully excavated due to the small size of the test-trenches. TP21, however, revealed that stone S19 was resting on the leaning stone S20, which continued below the base of the test-trench towards the entrance of the chamber. This area was investigated in more detail during the excavation of Trench 2. Samples of peat were taken from TP10 (Beta-421421) and TP20 (Beta-421420) to date the onset of its formation, and samples of charcoal were taken for dating from the rubble exposed at the base of TP20 (Beta-421419, Beta 421418) (Table 3).

TRENCH 1

Trench 1, 5m × 5m, was positioned to explore three architectural elements of the Giant's Grave: the chamber, the cairn and the façade (Illus 9). It encompassed the interior of compartments C1 and C2 and extended alongside compartment C3 to investigate phasing in the construction of the chamber, as suggested by the misalignment between the front two (C1 and C2) and back two (C3 and C4) compartments. Compartments C1 and C2 were emptied of water



Illus 8 Plans and section drawings form test-trenches TP10, TP20 and TP22 showing the locations of C14 samples. (Images by Darko Maričević)

and underlying, rooty, sludgy peat (1005) to expose rubbles (1008) in C2 and (1009) in C1, these located to the south-west and north-east respectively of leaning orthostat S9. Rubble (1008) contained stone S31, identified as the fallen jamb stone that had been between orthostats S6 and S9. The risk of destabilising leaning orthostats S6 and S7 required excavation in C2 to cease.

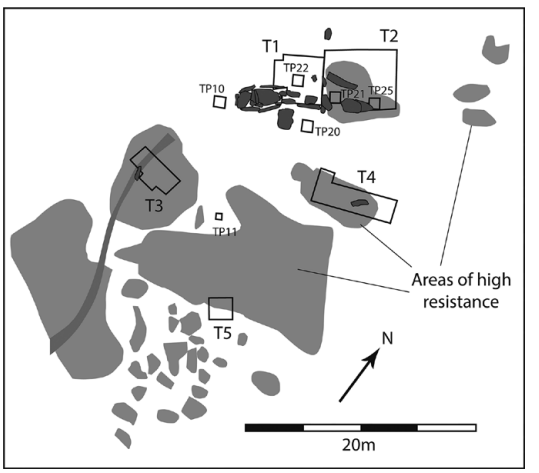
Within C1, rubble (1009) abutted displaced stone S19. Its excavation exposed a horizon of loamy peat and rubble (1003) that extended eastwards beyond compartment C2 and surrounded the fallen orthostat S9. A cleaner rubble (1014) underlay (1003), the excavation of which exposed part of the internal elevation at the base of the in situ orthostat S8 and adjacent façade stone S25. The base of orthostat S8 was set 0.3m lower than façade stone S25, which was underpinned by a rough drystone walling (1024), constructed from perpendicularly set and wedged flat stones abutting the end of orthostat S8 (Illus10). Orthostat S8 itself was underpinned by stones, which rested on the base of the chamber. These stones could not be distinguished from the

TABLE 3
Radiocarbon dates from the Giant's Grave

Sample lab no.	*Material*	*Context*	*Radiocarbon age (BP)*	*$\delta^{13}C$ (‰)*	*Cal BC/AD 95.4%*
Beta-421421	Basal peat	TP20, 101	240±30	-27.1	AD 1526 (6.4%) AD 1557 AD 1631 (51.3%) AD 1684 AD 1735 (34.9%) AD 1804 AD 1929 (2.9%) to present
Beta-421420	Basal peat	TP20, 201	101±30	-28	AD 1683 (26.1%) AD 1735 AD 1802 (69.4%) AD 1935
Beta-421419	Salicaceae	TP20, 202	2300±30	-27.8	408 BC (70.2%) 352 BC 286 BC (24.6%) 228 BC 217 BC (0.7%) 211 BC
Beta-421418	Salicaceae	TP20, 202	2390±30	-26.4	724 BC (3.0%) 706 BC 664 BC (2.1%) 651 BC 545 BC (90.4%) 394 BC
OxA-40052	cf Maloideae	3007	2424±19	-27.53	730 BC (7.6%) 700 BC 664 BC (4.2%) 650 BC 546 BC (83.6%) 408 BC
OxA-40129	*Erica* sp	1018	2414±25	-25.99	734 BC (7.6%) 696 BC 664 BC (3.7%) 650 BC 546 BC (84.1%) 402 BC
OxA-X-3070-31	*Calluna*/*Erica* sp	4005	2505±25	-27.14	776 BC (21.0%) 720 BC 708 BC (19.1%) 662 BC 652 BC (55.3%) 543 BC
OxA-40133	*Erica* sp	4011	2631±26	-24.71	828 BC (95.4%) 778 BC
OxA-40134	*Calluna*/*Erica* sp	4002	2828±26	-26.01	1054 BC (95.4%) 904 BC
OxA-40104	indet, but likely *Calluna*	TP20, 202	3410±19	-26.77	1751 BC (95.4%) 1624 BC
OxA-40049	Maloideae	1033	4608±20	-25.04	3496 BC (52.6%) 3452 BC 3443 BC (0.5%) 3440 BC 3379 BC (42.3%) 3348 BC
OxA-40050	*Corylus avellana*	1033	4545±20	-26.05	3368 BC (38.6%) 3321 BC 3236 BC (33.5%) 3176 BC 3161 BC (23.4%) 3104 BC
OxA-40048	*Calluna*/*Erica* sp	1013	3410±19	-26.35	1751 BC (95.4%) 1624 BC
OxA-40130	*Corylus avellana*	1013	4652±29	-24.80	3516 BC (95.4%) 3366 BC
OxA-40051	*Corylus avellana*	3008	4731±21	-27.46	3629 BC (42.5%) 3556 BC 3537 BC (22.8%) 3498 BC 3435 BC (30.2%) 3378 BC

TABLE 3
Continued

Sample lab no.	*Material*	*Context*	*Radiocarbon age (BP)*	*$\delta^{13}C$ (‰)*	*Cal BC/AD 95.4%*
OxA-40132	*Corylus avellana*	4014	4746±29	-23.38	3634 BC (79.2%) 3505 BC 3430 BC (16.3%) 3380 BC
OxA-40131	*Corylus avellana*	3008	4929±31	-25.19	3771 BC (95.4%) 3644 BC
SUERC-97388	*Erica* sp/*Calluna*	5002	3041±24	-26.8	1394 BC (35.9%) 1334 BC 1325 BC (59.6%) 1220 BC
SUERC-97389	*Erica* sp/*Calluna*	5002	2426±24	-26.1	744 BC (13.5%) 691 BC 665 BC (5.8%) 646 BC 550 BC (76.1%) 406 BC



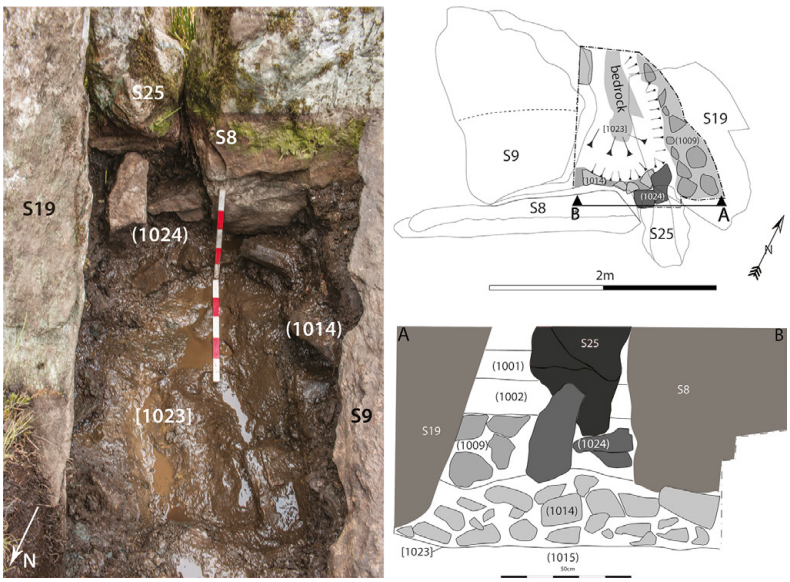
ILLUS 9 Location of trenches T1–5 in relation to the remains of the chamber and the results of the electrical resistance survey. (Image by Darko Maričević)

rubble fill (1014), so it is not clear whether they were placed during the construction or were later pushed in to fill a gap under the orthostat.

The base of the chamber in C1 was only visible in the small opening exposed by the excavation between fallen orthostat S9, in situ orthostat S8 and displaced capstone S19 (Illus 10). Rubble deposit (1014) continued under S19. While this prevented further excavation, the inward slope of the base of the chamber suggested it had been cut into underlying pale brown clay (1015). This cut [1023] continued under the drystone walling (1024) and the in situ orthostat S8, suggesting it was for the chamber. The cut could not be followed in the opposite (north-west) direction towards the base of orthostat S9, because an unexcavated baulk was required to support in situ façade stone S24 (Illus 11).

To the north-west of the chamber, Trench 1 encompassed test-trench TP22. Removal of the peat (1001) exposed a horizon of flat stones with an appearance of a pavement (1000) over a further peat horizon (1002), which was in turn over rubble (1003) and, in the western part of the trench, rubble layers/deposits (1006, 1007, 1010, 1011) (Illus 11). Removal of 1001 in the north corner of Trench 1 revealed two large stones S32 and S26 lying over disturbed rubble (1003) and approximately parallel with the line of the façade from which they may have derived and next to the upstanding façade stone S24. All three stones were syenitic gneiss. The excavation was unable to continue in this part of the trench due to lack of space between the stones and the baulk.

A deposit of peaty silt (1004) filled a hollow between the north-west face of in situ orthostat S5 and rubble (1007) in the opposite (southern) corner of the trench (Illus 11). Rubble (1006) abutted the face of orthostat S6 and overlay rubble (1007). Both (1007) and (1010) were below rubble (1003) and over a scatter of larger stones, designated (1011). Some of these had been stacked against each other resting on their



Illus 10 Photo, plan and elevation drawing of the front part of chamber compartment C1 at the end of the excavation. (Images by Darko Maričević)

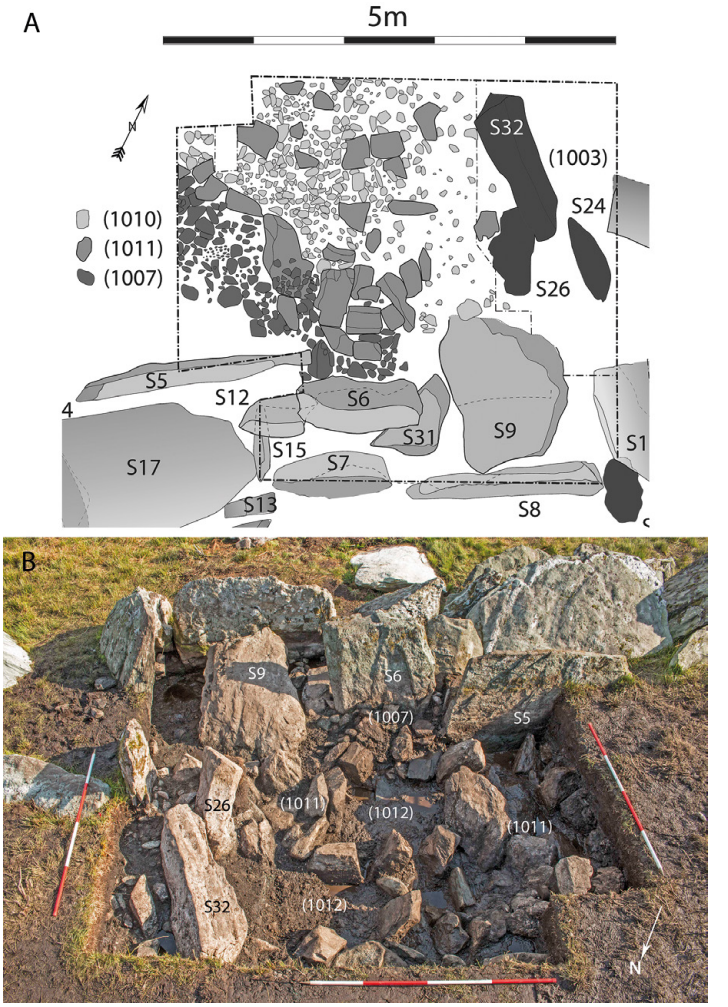
shorter sides and leaning towards the south-west. Deposit (1011) was interpreted as in situ remains of the cairn, showing the method and direction of construction, although there were many gaps between the stones where robbing occurred (Illus 11). The stones within (1011) were pressing into a clay silt (1012) which was above the natural, a clay till (1015). Deposit (1012) had been cut by slot/stone socket [1022] for the placement of S5, the north-west orthostat of C3 (Illus 12A), which had been packed with a fill of small rubble (1013). Two charcoal samples from deposit (1013) were taken for radiocarbon dating (OxA-40048, OxA-40130, Table 3). The excavation in Trench 1 demonstrated the massive size of the orthostats. Three-quarters of in situ S5, for example, were below the current ground surface (Illus 12B).

Excavation of (1012) was constrained by its limited exposure within the trench. Its removal in the northern part of the trench revealed three small depressions or cut features [1017], [1019], [1021] filled with dark grey silty clay fills (1016), (1018), (1020) that were indistinguishable from (1012) (Illus 13). A charcoal sample from fill (1018) was submitted for radiocarbon dating (OxA-40129, Table 3). Appendix 1 provides the matrix for Trench 1.

TRENCH 2

Trench 2 was contiguous with Trench 1, measuring 7m × 6m (Illus 9). It focused on the forecourt of the monument and encompassed test-trenches TP21 and TP25. The removal of peat (1001/1002) exposed the full extent of the prone stone S23 lying over a spread of rubble (1026) that formed a distinct mound (1025) in the north-west corner of the trench. Stone S23 was not removed or undermined by excavation, providing a baulk within the trench. A section through (1025) showed that it was continuous with (1026), forming a spread of rubble sloping gradually to the north-east, away from the line of the façade (Illus 14).

The excavation of (1025/1026) exposed three distinct rubble deposits in the western half of the trench (1027), (1028), (1031), and a linear feature composed of large stones (1030) (Illus 15). Rubble (1026) abutted (1030), which was



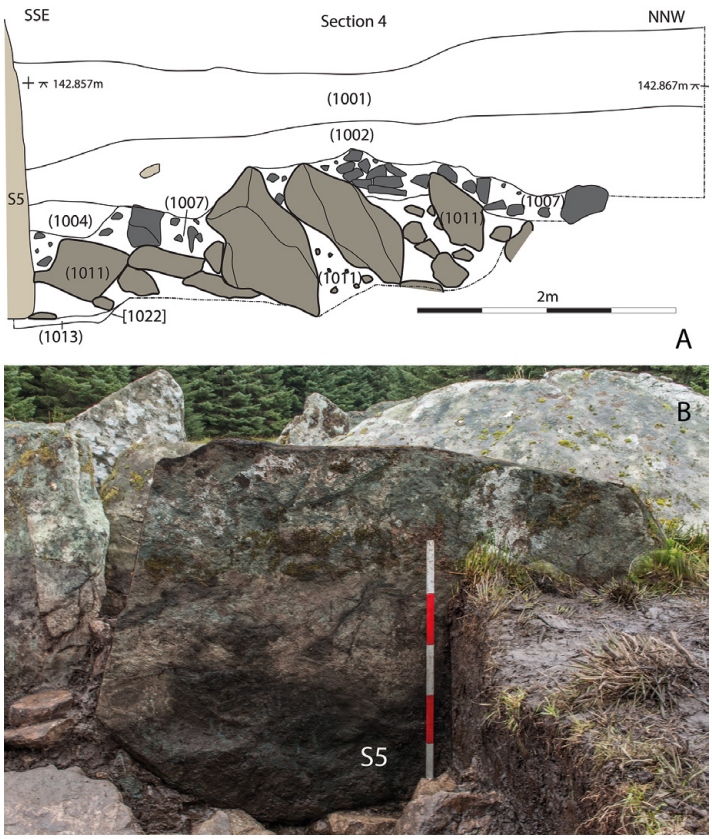
Illus 11 (a) Plan of Trench 1 showing the extent of rubble deposits (1007) and (1010) overlying protruding larger stone blocks (1011); (b) rubble (1011) from the north-west. (Images by Darko Maričević)

running on an north/south alignment underneath and perpendicular to prone monolith S23. It incorporated a large stone of syenitic gneiss S37, similar to S32 on the other side of the façade as seen in Trench 1.

To the north of S23, stones (1030) overlay a deposit of mainly flat angular stones (1028), some lying over each other. These stones were overlying a discrete deposit of rubble set in yellow/brown silt (1027), which was resting on top of a further megalith, S33. To the south of S23, stones (1030) were over a rubble of greenish metagabbro (1031), occupying the entire space between S23, S24, S20 and S19 (Illus 15).

The removal of peat (1001/1002) in the far south-west corner of the trench exposed two upright stones, S28 and S34, that were in line with S21 and S28. Of these, S21 and S34 were above rubble (1026) while S28 was firmly set into this rubble.

The excavation of rubble (1026) revealed a horizon of more regular stones (1029), many of which were flat and sub-rectangular/square in shape and underlying the linear feature (1030).

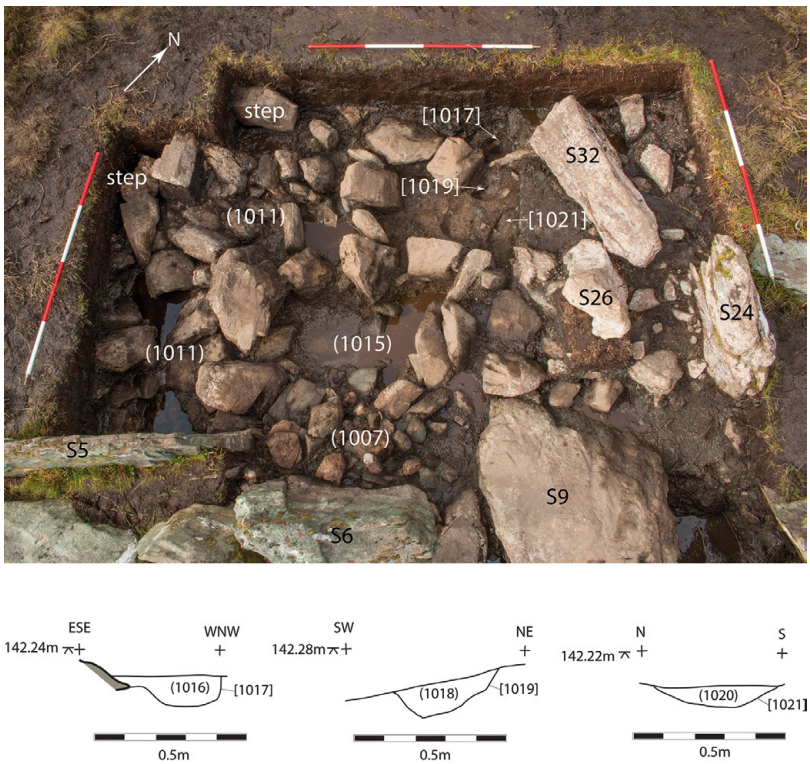


Illus 12 (a) ENE-facing baulk section 4 in Trench 1 showing the stratigraphic sequence including construction cut [1022]; (b) orthostat S5 at the end of the excavation. (Images by Darko Maričević)

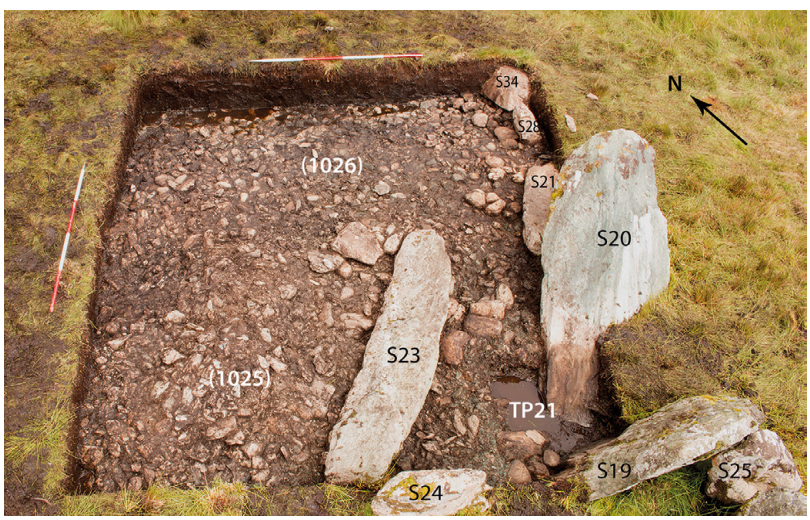
The frequency of regular and flat stones increased with depth, with the lowermost embedded into an underlying silty clay (1033) (Illus 16A), which was above the natural (1015). The base of a ceramic vessel (SF24) was found resting on one of the slabs of (1029). Deposit (1033) was exposed across the eastern half of the trench, which was free from fallen megaliths, and ran below S33 (Illus 16). A sondage through (1033) was made next to S33 and the north-west baulk of the trench, from which a block sample was taken for micromorphological analysis (SA194) (Illus 16B, 16C). This demonstrated (1033) to be a buried land surface with no traces of trampling or other anthropogenic activity (Appendix 2). Two samples were also radiocarbon dated from this deposit (OxA-40049, OxA-40050, Table 3). A sondage was excavated next to S24. This found that (1031) overlay a greenish gritty deposit (1032) that abutted stones S19 and S24 and was above the natural, a yellow/brown silty clay (1034=1015). There was no sign of a cut or packing for S24. Appendix 1 provides the matrix for Trench 2.

TRENCH 3

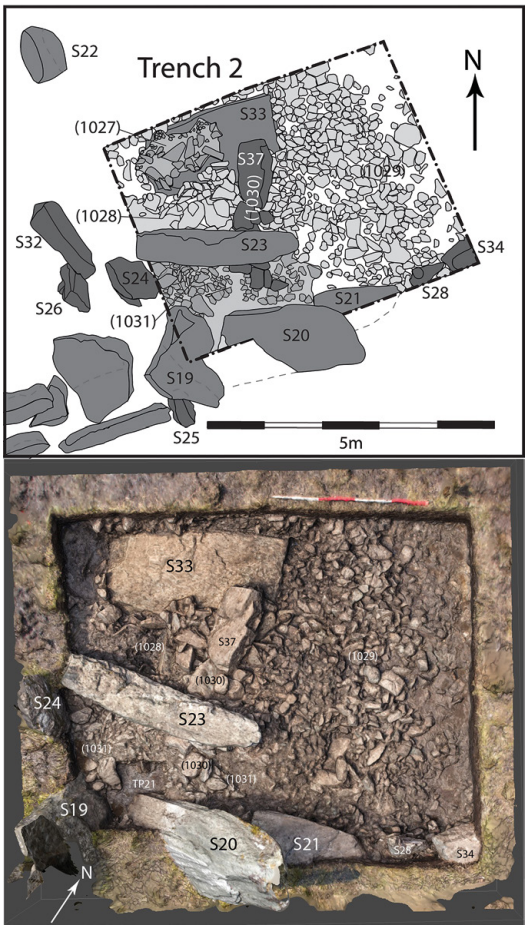
Trench 3 was aligned WNW/ESE and measured 5m × 2m with a 2m × 1m extension along its SSW side. It was positioned to investigate the outlier stone S40, situated 10m south of the chamber, and the surrounding area of high electrical resistance (Illus 9). Excavation of a brown (3000) and then black (3001) peat exposed a wall



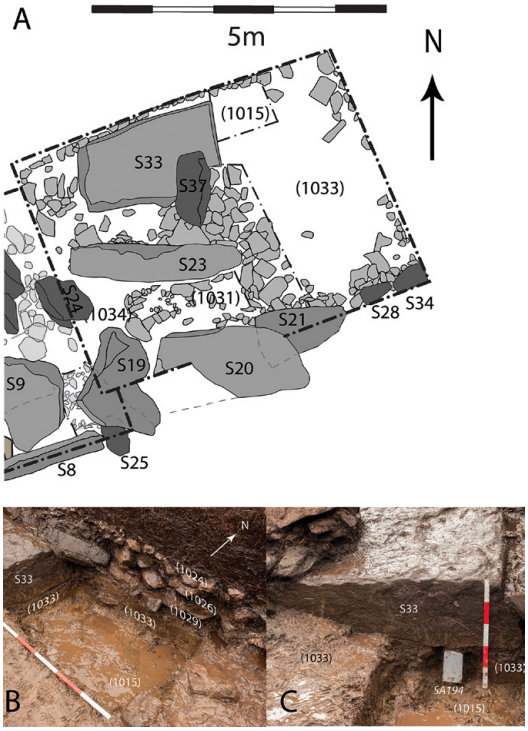
Illus 13 Photo of Trench 1 from the south-east showing robbed cairn material (1011) and the location of underlying depressions [1017], [1019] and [1021] and their section drawings. (Image by Sarah Lambert-Gates and Darko Maričević)



Illus 14 Trench 2 from the south-west showing rubble (1025/1026) in the forecourt area. The line of the façade is marked by in situ stones S24 and S25. (Image by Sarah Lambert-Gates and Darko Maričević)



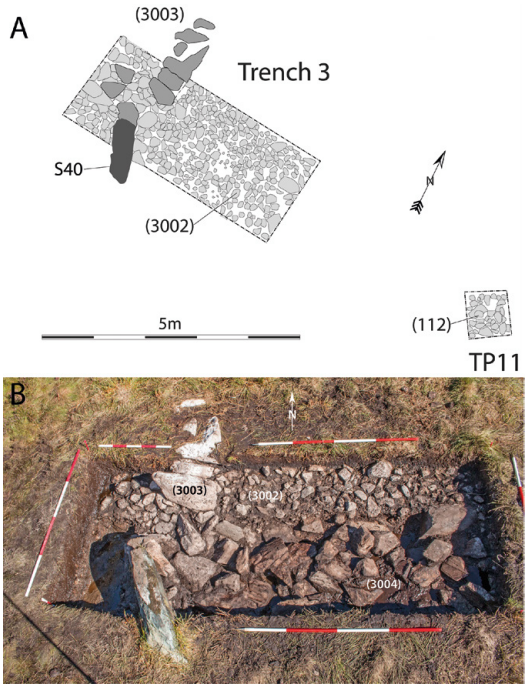
Illus 15 Plan of Trench 2 showing deposits (1027), (1028), (1030) and (1031) and the corresponding photogrammetry image after the excavation of (1027) revealing S33. (Images by Sarah Lambert-Gates and Darko Maričević)



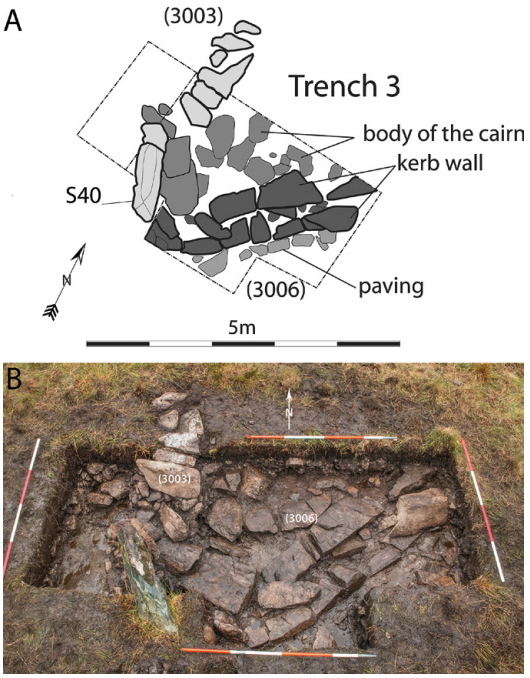
Illus 16 (a) Plan of Trench 2 at the end of the excavation showing the extent of exposure of deposit (1033); (b) sondage through deposit (1033), showing the sequence of overlying rubble deposits in the baulk section; (c) the location of micromorphology sample SA194 underneath megalith S33. (Images by Darko Maričević)

consisting of single course of irregular boulders on a north/south axis (3003). This wall incorporated stone S40, which was the only green metagabbro block in the structure. The geophysics had demonstrated that the wall continued southwards in a sinuous line to the edge of the clearing. It was built on a cobbled surface (3002) which covered the entire trench (Illus 17). A similar surface had been recognised in the base of a test-pit TP11 located 4m to the east of Trench 3. If these are the same, then surface (3002) could also cover the extensive area to the east and south of TP11 (Illus 7 & 9). The excavation of cobbled surface (3002) exposed an uneven layer of larger stones (3004) (Illus 17B), which were lying on top of a thin layer of dark, smooth silt (3007) that had accumulated on the surface of a stone-built structure (3006) (Illus 18). A similar brownish silt (3005) filled the voids between the stones of this structure. A charcoal sample from (3007) was taken for radiocarbon dating (OxA-40052, Table 3).

Structure (3006) had three components. First, a two-course double-skinned wall constructed with large sub-rectangular blocks up to 1.2m



Illus 17 (a) Plan of Trench 3 and test-pit TP11 showing corresponding cobbled surfaces (3002) and (112); (b) view of Trench 3 from the south showing wall (3003) overlying cobbled surface (3002), which is overlying larger rubble (3004) exposed in the southern half of the trench. (Images by Sarah Lambert-Gates and Darko Maričević)



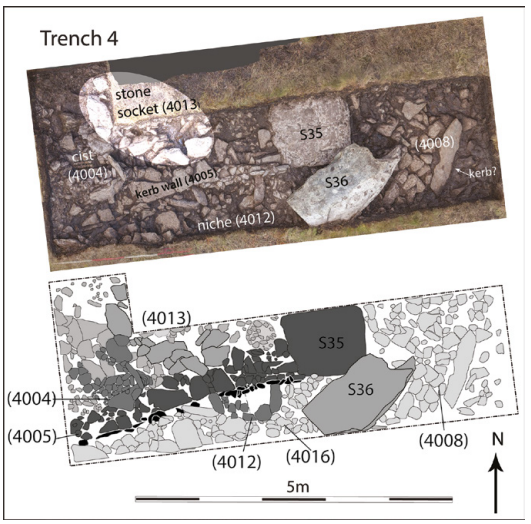
Illus 18 (a) Annotated plan of the different components of structure (3006); (b) photo of structure (3006) in Trench 4 at the end of the excavation. (Images by Sarah Lambert-Gates and Darko Maričević)

long and 0.6m in width running north-east/south-west underneath the later wall (3003) and stone S40. Second, remains of the cairn comprised of large stone blocks lying flat and abutting the wall from the north-west. Third, a line of paving made from much thinner and smaller slabs abutting the lower course of the wall from the south-east (Illus 18). The wall of (3006) was interpreted as the kerb of the chambered cairn. The removal of selected stones, which were later reinstated, showed that the entire structure was built on a grey-brown silt (3008), which was over natural (3009=1015) that was mottled with manganese. A fragment of burnt hazelnut shell from deposit (3008) was submitted for C14 dating (OxA-40131, Table 3). Appendix 1 provides the matrix for Trench 3.

TRENCH 4

Trench 4, 8m × 2m, was approximately aligned east/west. It was positioned to investigate the area of high resistance around stone S36, located 8m south of Trench 2, but also targeted the location where the projected line of the façade would meet the projected line of wall (3006), hence testing if that wall was the kerb (Illus 9). The removal of peat (4000) revealed a rubble layer (4001) either side of stones S36 (metagabbro) and S35 (syenitic gneiss), which bisected the trench (Illus 19A). In the south-east corner of the trench, rubble deposit (4001) dipped and was over a dark silt (4003) and a further rubble deposit (4006), which also dipped in an eastward direction. In the south-west corner, rubble layer (4001) was over a more compact rubble (4007) that was partly cemented by iron pan concretions.

Illus 19 (a) Plan of Trench 4 after removal of peat (4000); (b) view of cist (4004) during the excavation showing position of pot SF17. (Images by Sarah Lambert-Gates and Darko Maričević)



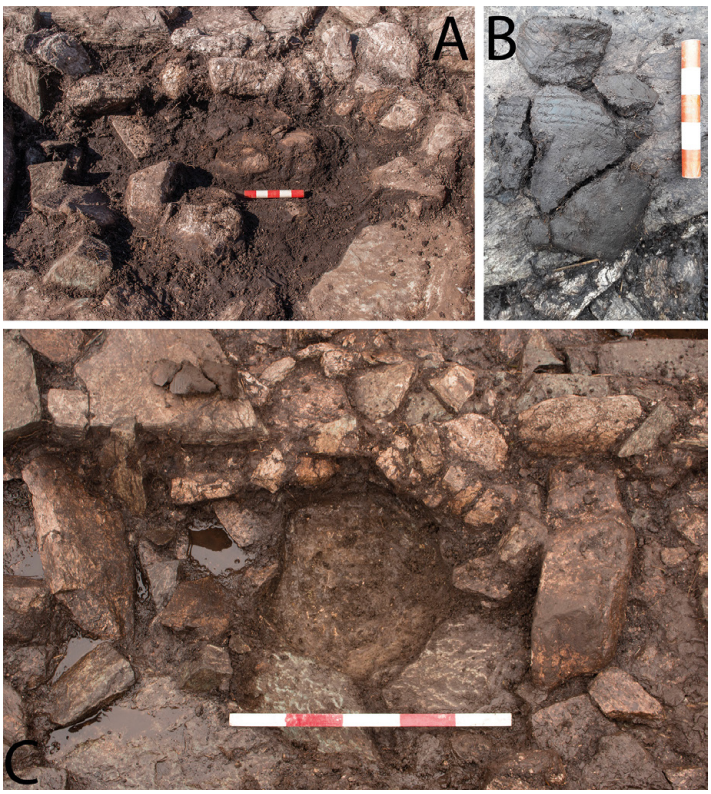
Illus 20 Annotated photogrammetry image and a plan of Trench 4 at the end of the excavation. (Images by Sarah Lambert-Gates and Darko Maričević)

The excavation of (4001) and (4007) exposed a roughly built cist (4004) at the western end of the trench, consisting of two flat slabs set on edge and lined with smaller stones on all sides. It contained a stony fill (4002) containing a ceramic vessel SF17, which lay on its side, slightly crushed, but seemingly complete (Illus 19B). Additional pottery sherds were jammed on top and around the vessel but did not appear to be part of it. The fill of the cist was fully excavated and sampled 100% to enable the lifting of the vessel, the content of which was excavated in the laboratory prior to its conservation. A sample of charcoal retrieved from fill (4002) was taken for radiocarbon dating (OxA-40134, Table 3). Neither the fill of the cist nor the pottery vessel contained visible human remains; had any been present, they are unlikely to have survived in the peaty acidic soil.

On its southern side, cist (4004) overlay a south-west/north-east wall (4005), constructed from flat stone slabs with a straight south-east face and aligned with wall (3006) in Trench 3 (lllus 20). The face of this wall (4005) was edged by smaller stones set between the wall and the abutting rubble (4009). To its north-west, the wall abutted several large, angled stones (4013), which lined an oval feature situated next to the northern edge of the trench and filled with loose rubble fill (4010). A 1m northward extension of the trench identified stones (4013) as packing for a socket aligned with the façade of the cairn (Illus 20).

To the east of the socket, wall (4005) continued until it met and abutted flat lying stone S35, which formed its terminus. Soil from underneath one of the flat stones of the wall was sampled for radiocarbon dating (OxA-X-3070-31, Table 3).

Excavation of rubble (4009) exposed a three-sided stone structure (4012) that abutted the face of wall (4005) from the south and set into an underlying and unexcavated rubble, (4016) (Illus 20 & 21). The interior of (4012) was half-sectioned, identifying a fill of dark brown silt (4011) above a compact yellowish silt (4015). Both fills contained pottery sherds, which formed two clusters suggesting separate vessels, SF27 in the lower fill and SF25 in the upper fill (Illus 21). Charcoal



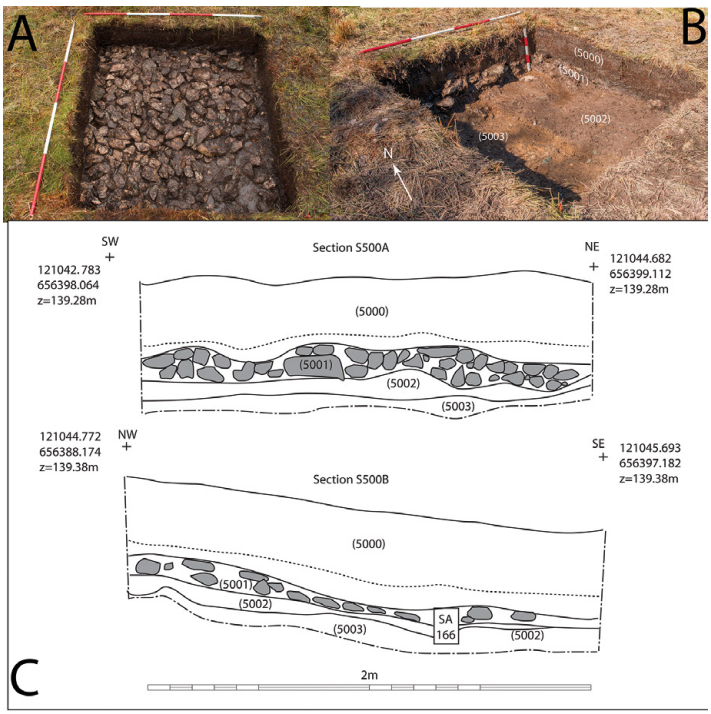
Illus 21 (a) Pot SF25 in fill (4011) of niche (4012); (b) some of the decorated sherds of pot SF27 from fill (4015); (c) half-sectioned fill (4015) after the removal of pot SF27 showing the shape of structure (4012). View north. (Images by Darko Maričević and James Osborn)

from both fills was taken for radiocarbon dating (OxA-40133, OxA-40104, Table 3).

On the east side of megaliths S35 and S36, the excavation of rubble (4006) exposed a coarse but more rounded rubble (4008) which ran below the megaliths and contained a long, flat metagabbro slab (Illus 20). A small sondage into (4008) exposed a thin layer of brown silty clay (4014) over the natural (4017=1015). A fragment of burnt hazelnut shell was taken from (4014) for radiocarbon dating (OxA-40132, Table 3). Appendix 1 provides the matrix for Trench 4.

TRENCH 5

Trench 5, 2m × 2m, was located 17m south of the chamber to explore an area of high resistance (Illus 9). Removal of peat (5000) exposed a rubble horizon (5001) that was not dissimilar to that exposed in Trench 3 (3002) (Illus 22A). This was over a silt clay (5002), within which a flint flake, SF19, and leaf-shaped arrowhead, SF15 (Illus 23), were found. Deposit (5002) contained both rounded and angular pebbles, suggesting it may have been colluvium. It overlay an orangey brown sandy clay (5003), interpreted as natural glacial till (Illus 22B, C). Sample block SA166 was taken through (5002) and (5003) for micromorphology (Appendix 2), which indicated little distinction between (5003) and (5002), these having a diffuse and irregular boundary. The only observable difference between these contexts is a slight colour change and looser microstructure in (5002). Two radiocarbon dates were obtained from charcoal samples within (5002) (SUERC-97388, SUERC-97389, Table 3).

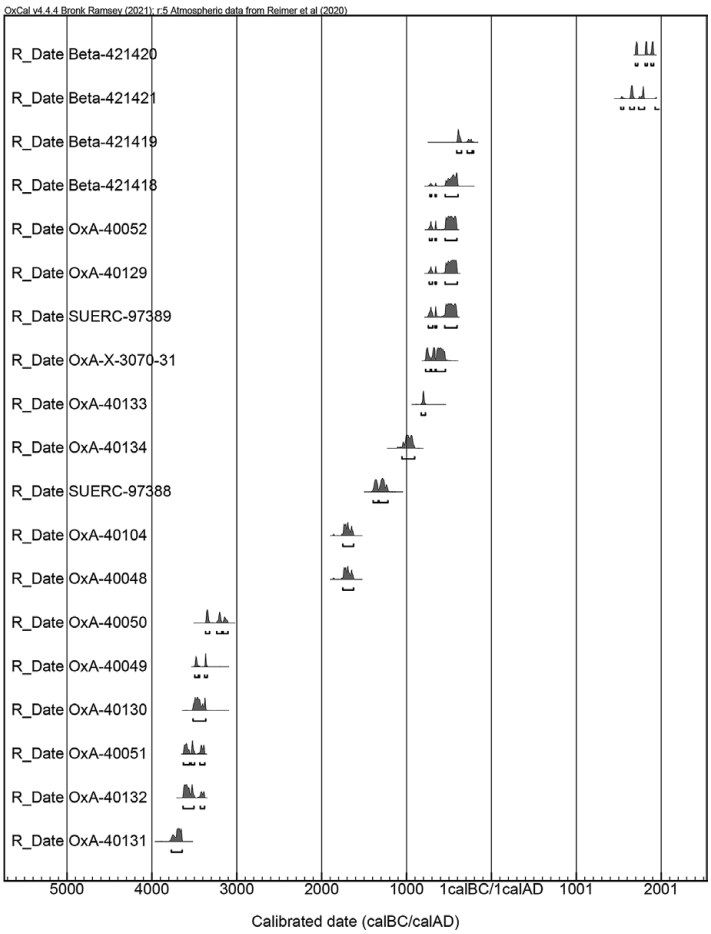


Illus 22 (a) Trench 5 from the south-east showing rubble (5001); (b) Trench 5 from the south showing excavation of deposit (5002) above glacial till (5003); (c) south-east-facing and south-west-facing sections of Trench 5 showing the location of micromorphology sample SA166. (Images by Sarah Lambert-Gates and Darko Maričević)

Illus 23 Arrowhead SF15 from deposit (5002) in Trench 5. (Image by Steven Mithen and Darko Maričević)

RADIOCARBON DATES

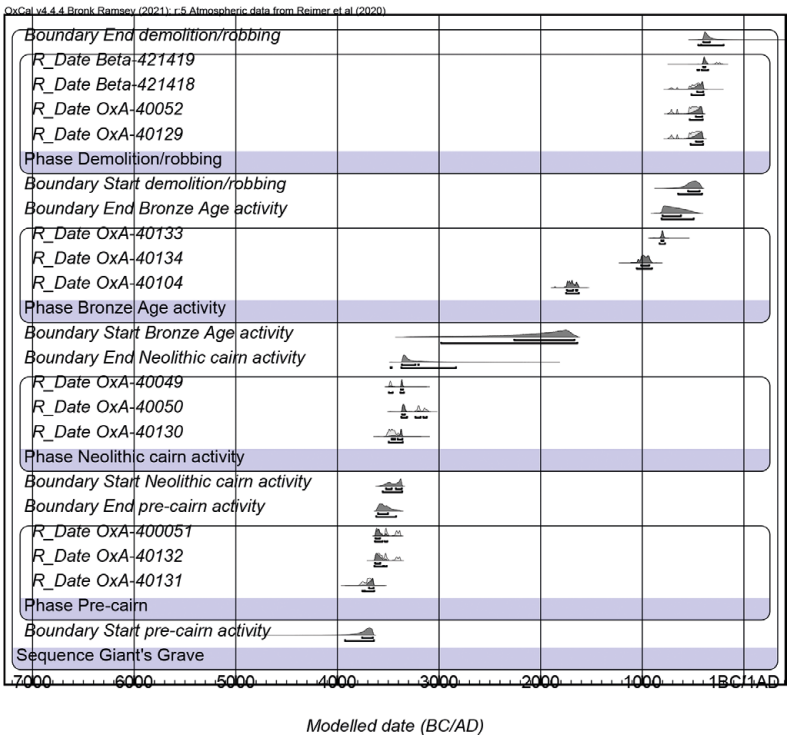
Nineteen radiocarbon dates were obtained, with the dating carried out in three different laboratories. Four dates from Beta Analytical (prefix Beta) come from test-trenches TP10 and TP20 and were the initial dating following the evaluation in 2015. Thirteen dates were provided by the Oxford Radiocarbon Accelerator Unit (ORAU, prefix OxA). Two further dates came from Trench 5, these made by the Scottish Universities Environmental Research Centre (prefix SUERC). The dates were calibrated in OxCal 4.4.4 (Bronk Ramsey 2021) using IntCal2020 (Reimer et al 2020). All date ranges in the text are presented at 95.4% probability unless otherwise specified and rounded to the nearest decade/half decade, as repeated calibration runs produce slightly different results. Table 3 lists all dates and presents



Illus 24 Plot of calibrated C14 dates (n=19) from the Giant's Grave. (Image by Darko Maričević)

the details of the radiocarbon ranges and their associated probability ratios. Tables containing modelled dates and the associated data can be found in Appendix 5. A plot of all dates from the Giant's Grave is shown in Illus 24, while Illus 25 shows the modelled dates. Further Bayesian models are presented in Illus 28 and 29, showing the 4th-millennium dates for Islay and the combined model for the Giant's Grave and Port Charlotte chambered cairns, respectively.

All but two dates were consistent with the archaeological interpretation of the stratigraphic sequence. The first of the inconsistent dates is OxA-40048 from deposit (1013). This deposit is interpreted as the fill of the construction cut for the chamber and would, therefore, date to the Early Neolithic. The date obtained, however, falls in the Early Bronze Age and was 3410±19 BP (OxA-40048) calibrated to 1750–1625 cal BC. This came from a short-lived charcoal sample (*Calluna/Erica*) and no issues were reported by the laboratory. A second charcoal sample (*Corylus avellana*) from the same environmental soil sample (SA125) was dated to the Early Neolithic (OxA-40130, 4652±29 BP, 3520–3370 cal BC). The presence of later charcoal suggests that the deposit was disturbed, which brings the reliability of OxA-40130 for dating of the construction of the cairn into question. Be that as it may, the date is interpreted



Illus 25 Modelled dates (n=13) for the Giant's Grave prehistoric sequence, excluding early modern peat dates, two dates from mixed colluvium in Trench 5 and two intrusive dates from Trenches 1 and 2 (A_{model}=131, $A_{overall}$=130.9). (Image by Darko Maričević)

as the most likely representative date for the construction of the cairn or later activity and as such it serves as a *terminus ante quem* for the construction.

The second inconsistent date was sample OxA-X-3070-31 taken from underneath a flat stone slab in the make-up of kerb wall (4005), which was also expected to produce an Early Neolithic date, but was of an Early Iron Age date, 2505±25 BP, 780–540 cal BC. The laboratory report states that this sample had unexpectedly low %C value on combustion (21.8%), implying that the sample was not completely homogeneous or was degraded, suggesting mixing with intrusive material possibly arising from root action. Early Iron Age activity at the Giant's Grave is well attested by several other radiocarbon dates; wall (4005) is abutted by features dated to the Early and Late Bronze Age by both radiocarbon and pottery.

Bayesian modelling was used as means of improving chronological precision of calibrated ranges. The Giant's Grave model considers a prior stratigraphic interpretation in which a secure pre-cairn phase of activity is clearly recognised and represented by three dates obtained from buried soil deposits underlying the monument (OxA-40131, OxA-40132 and OxA-40051). The three remaining Early Neolithic dates are more problematic. We already discussed OxA-40131, which comes from a disturbed fill of a construction cut, while two dates (OxA-40050, OxA-40049) from context (1033) have no stratigraphic relationship with the construction phase of the monument, being directly overlain by the demolition/robbing phase in the forecourt. Nevertheless, these three dates were grouped together into a separate phase of Neolithic activity associated with the cairn. The next phase of activity is represented by three dates related to

Bronze Age burial activity (OxA-40104, OxA-40134, OxA-40133). Although deriving from backfilled features, these dates are sufficiently contextually and chronologically distinct. The final phase is represented by four dates deriving from the contexts associated with the demolition and robbing of the monument (OxA-40129, OxA-40052, Beta-421418, Beta-421419), which all fall into the Early Iron Age. For the purposes of the model, we did not include the dates that were clearly intrusive in their stratigraphic position, ie OxA-40048 and OxA-X-3070-31, as *a priori* information regarding their stratigraphy is insecure. We have also excluded two dates from colluvium (5002) in Trench 5 (SUERC-97388 (GU57539): 3041±24 BP, SUERC-97389 (GU57540): 2426±24 BP), which are unrelated to the main sequence and clearly come from a mixed deposit.

CHIPPED STONE

Inger M Berg-Hansen

Fragments of quartz were abundant through the excavated deposits. A sample was analysed, but no pieces were determined to have been worked. We interpret the quartz as deriving from natural fragmentation of the quartz veins within the metagabbro and a syenitic gneiss. Six pieces of worked flint were recovered (Table 4). The only worked artefact was an unfinished Early Neolithic leaf-shaped point, made from a thin flake (SF15), from context (5002) (Illus 23). Half of the point has surface retouch made by pressure flaking. The removal of small pressure flakes was unsuccessful around the middle part of the point, possibly caused by a small inclusion/flaw in the flint. The rest of the surface is left unmodified except for some small edge retouch along the concave base. It seems likely that the point was discarded during manufacture, leaving it somewhat asymmetrical; the flake is very thin in the basal part. Maximal measures: L: 28.27mm, W: 20.41mm, Th: 3.01mm, Wt: 1.4g.

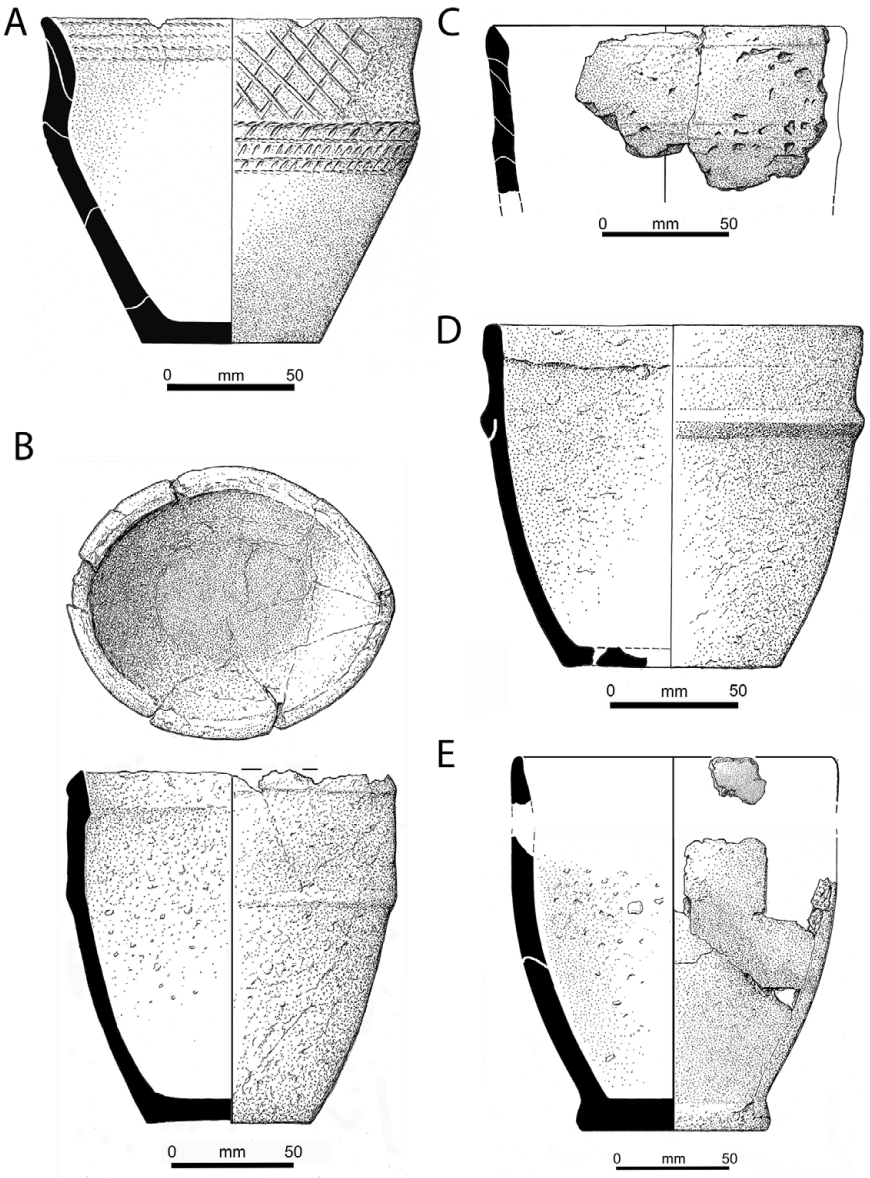
POTTERY

Alison Sheridan

The remains of five small, flat-based pots were discovered during the excavations, all in contexts that are clearly secondary to the construction and initial use of the monument. Two of these pots, Pot 1 (SF27: Illus 26A) and Pot 4 (SF25: Illus 26D), were found in the lower and upper fills respectively of a 'niche' (4012), a small enclosure built abutting the outside of a wall at the south-east end of the façade in Trench 4. Pots 2 and 3 (both SF17: Illus 26B, C) were found in a cist (4004)

TABLE 4
Flint artefacts from the Giant's Grave

SF/SA number	*Context*	*Description*
SF7	1003	Fragment of a large cortical flake with heavy direct, partly invasive, retouch along one lateral edge, stretching from the proximal to the distal end of the flake. Some abrasion in the distal end of the retouch might represent macroscopic use-wear. Two small flakes removed from the distal end might represent retouch or edge damage/use-wear. The flake is probably from a primary core preparation.
SA178	1032	A tiny fragment/chip of burnt flint
SF26	4014	A flake
SF21	4006	A fragment, accidently removed during knapping
SF19	5002	A flake, possibly from core correction/preparation. Traces of trimming and abrasion are present on the dorsal side along one edge.
SF15	5002	Leaf-shaped arrowhead



Illus 26 (a) Pot 1 (SF27); (b) Pot 2 (SF17); (c) Pot 3 (SF17); (d) Pot 4 (SF25); (e) Pot 5 (SF24). All to same scale. (Images by Marion O'Neil)

inserted into the cairn in the same area, while Pot 5 (SF24: Illus 26E) was found on rubble in the forecourt in Trench 1. Pot 2 was complete but crushed, while around half of Pot 1, a third of Pot 3, two-thirds of Pot 4, and the lower two-thirds of Pot 5 (along with one rim sherd) survived. Virtually all the conjoining sherds of all five pots have been refitted. Also present were four sherds that do not appear to belong to Pots 1–5 (namely two sherds from among SF17; SF20 from Trench 4; and an unnumbered sherd from Trench 5), and material that looks to be kneaded but probably unfired clay (SF14, from context 3008). The pottery was examined

macroscopically and using a binocular microscope at magnifications up to ×30. Technical descriptions are provided in Appendix 4.

The same lithic inclusion – rotten sandstone – is present in Pots 2–5, in sherd SF20 and in the unlabelled sherd from context (5002). The site lies in an area south of sandstone outcrops in the north part of the Rhinns, where the bedrock geology is the Colonsay Group of mildly metamorphosed Neoproterozoic sedimentary rocks, including sandstone. Alternatively, sandstone is a primary lithology of the Bowmore Sandstone Group located directly across Loch Indaal from the Giant's Grave. It is highly likely that one of these local sources is accountable for the sandstone inclusions. The rock seems to have been deliberately crushed and added to the pots as a filler, to prevent them from cracking during firing. It appears, therefore, that the same local source of clay and sandstone inclusions was used for all of the pottery recovered from the Giant's Grave.

POT 1

Based on its style and context, Pot 1 is attributed to the Early Bronze Age. Although such pottery is represented on Islay at the settlements of Kilellan (Ritchie 2005) and Ardnave (Ritchie & Welfare 1984), there are no pots in those assemblages that offer a close parallel for Pot 1. This is likely to reflect chronology, because those settlements pre-date the deposition of Pot 1. Similarly, there is no close parallel for Pot 1 among the Early Bronze Age funerary pottery found on Islay, that from the cists at Keills (Ritchie & Welfare 1984: fig 22), Traigh Bhan (Ritchie & Stevenson 1983) and Kentraw (Ritchie 1987). The least dissimilar are the bipartite vase from Traigh Bhan and the tripartite vase from Kentraw. The Traigh Bhan pot differs from Pot 1, however, in having a markedly everted, heavy rim and no decoration on its exterior apart from a horizontal line on the external rim bevel. It is also taller and wider than Pot 1, standing 198mm high and with a rim diameter of 188mm, but its associated radiocarbon date (GU-1379, 1550–800 cal BC) is unreliable (Sheridan 2004). The vase from Kentraw, which is slightly larger than Pot 1 (145mm high and 140mm in rim diameter), differs from Pot 1 in having a kinked neck, more everted rim and narrower base. Its decorative scheme also differs from that from the Giant's Grave, although both share the use of an incised lattice design and decoration inside the neck. The Kentraw vase was found in a cist that was used for successive interments; this pot and a small accessory vessel are believed to be associated with radiocarbon-dated human bone (GU-2189, 3510±50 BP) calibrated to 2010–1690 cal BC, which suggests that it is likely to pre-date Pot 1.

The best parallels for Pot 1 are found in a series of vessels labelled as 'Irish-Scottish Vases' (ApSimon 1969: 40–4), also known as Tripartite Vase Food Vessels (Ó Ríordáin & Waddell 1993: 25–6, 235) and 'Stage 3 vases' (Brindley 2007). These are found mostly in the northern counties of Ireland, but with at least 30 examples from Scotland (Simpson 1965). They are characterised by upright or slightly everted necks, usually kinking out to a carination, with the belly tapering in a straight line to a fairly broad base. Decoration is often by incision, and varies in its overall extent. Radiocarbon-dated examples from Ireland fall between *c* 1830 and *c* 1740 cal BC (Brindley 2007: table 69). While this is still slightly earlier than the date associated with Pot 1 (OxA-40104, 3410±19 BP; 1750–1620 cal BC), these vessels offer the closest comparanda for the Giant's Grave pot.

The niche in which Pot 1 was found is of sufficient size (at 0.83m × 0.4m internally) to have served a funerary purpose, although no human remains were recovered; any unburnt remains would been either tightly bound or disarticulated. An alternative possibility is that the pot was deposited as a votive offering, with the niche being constructed to protect it. Thin organic residue noted on the inside of the pot (Appendix 4) may be an indication that the pot contained a liquid.

POTS 2–4

These three Late Bronze Age pots can be discussed together as they are all similar in shape and size (Illus 26B, C, D). The associated

radiocarbon dates suggest deposition between the 11th/10th and 8th century BC. There is only one known sample of pottery dating to this period from elsewhere on Islay, the two squat cinerary urns at Sanaigmhor Warren, one found inside a cist and the other in a pit under a cairn; both had been buried upright, containing cremated human remains (Cook 1999). Initial radiocarbon dating of incompletely calcined bone produced dates that were inconsistent with the style of this pair of pots (AA-26244, cal AD 250–540 for the remains from the cist, and AA-26243, 510–200 cal BC for the remains from the cairn. Redating, using fully calcined bone, produced more reliable dates of (GrA-17598, 970–800 cal BC) and (GrA-17600, 900–600 cal BC) respectively (Aerts et al 2001; Sheridan 2007: 184. Note: all four dates have been recalibrated using OxCal *c* 4.4.3). Neither pot offers a close parallel for Pot 2 from the Giant's Grave; both are squatter, lack the horizontal cordon, and have novel features: the one from the cist is coarse and has a ledge-like protrusion on the interior of the rim, suggesting a support for a lid; the other pot has a groove immediately below the rim on the exterior (Cook 1999: illus 7.1, 7.2).

As Lane and Cowie argued in their discussion of pottery from sites on Coll (Lane & Cowie 1997), information on the typochronology of Late Bronze Age and Iron Age pottery in the Inner Hebrides is very sparse indeed. There are no obvious comparanda for Pots 2–4 among the Coll pottery that they documented. Looking more widely, while there is a superficial similarity with some Bipartite Urns from elsewhere in Scotland, with their neck–belly junction marked by a horizontal cordon (eg Stevenston Sands, North Ayrshire: Mann 1906), these are mostly larger than Pots 2–4 and are earlier in date, probably belonging to the second quarter of the second millennium. Moreover, the proportions of these urns are different, having a more marked taper. Some of the 'Bucket Urns' or 'Flat-rimmed Ware' pots that have been (or can be) dated to the Late Bronze Age (Bradley & Sheridan 2005; Sheridan 2007) are comparable in size to Pots 2–4 but lack the horizontal cordon.

Pots 2–4 are therefore important in being rare examples of reasonably well-dated Late Bronze Age pots from Islay. Their small size and absence of calcined bone within their fills suggests they were not cinerary urns. The possible traces of evaporated residues of the vessels' liquid contents suggests they had been deposited as votive offerings at a by-then ancient monument.

POT 5

In contrast to the Outer Hebrides, there is no evidence for a major ceramic tradition in the Southern Hebrides after the Bronze Age (Cowie 2005; Parker Pearson 2012). Iron Age pottery on Islay is rare, and what there is offers no parallels for Pot 5 (Illus 26E). That from Kilellan Trenches J and K (Cowie 2005) is of Middle Iron Age and bears no resemblance to Pot 5; similarly, the Late Iron Age pottery found at Ardnave (Ritchie & Welfare 1984: fig 10, 26–7) is wholly different from Pot 5. As with Pots 1–4, there is no indication that Pot 5 had been a funerary item; the band of thin organic residue on its exterior suggest that it, like the other pots, may have contained liquid and it could have been deposited as an offering to the original occupants of the monument.

INTERPRETATION: CHRONOLOGY, ARCHITECTURE AND ACTIVITY AT THE GIANT'S GRAVE

The Neolithic chambered cairn, as far as revealed within the limits of the excavation, was built in one phase of construction but was modified and reused on at least four occasions during the Early and Late Bronze Age. It was extensively robbed of cairn material during the Early Iron Age. The façade either collapsed or was demolished at this time. Although the outer two compartments of the chamber were completely cleaned out, it remains unclear whether this is the case with the better-preserved and less accessible inner compartments. Large amounts of rubble, stones and megaliths were moved, disturbing stratigraphy and redepositing sediments, all of which complicated the interpretation of the excavated

contexts, finds and radiocarbon samples. Within those constraints, we recognise four broad phases of activity.

PRE-CAIRN ACTIVITY, EARLY/MID-4TH MILLENNIUM BC

At least two episodes of activity occurred prior to the construction of the cairn on a soil (3008, 4014) that had formed above the glacial till. An earlier episode was dated to 3770–3640 cal BC (OxA-40131) and one or more later episodes to period between 3630 and 3380 cal BC (OxA-40132, OxA-40051). The modelled dates provide a posterior date estimate for the end of pre-cairn activity between *3620–3420 cal* BC (Illus 25). This involved the burning of hazel, suggesting possible clearance (Appendix 3). Neither context produced finds to indicate whether these episodes were associated with a Mesolithic or an Early Neolithic community.

ARCHITECTURE AND CONSTRUCTION OF THE CAIRN IN THE MID-4TH MILLENNIUM BC

The construction cut [1022, 1023] for the chamber was most likely made between *3620–3360 cal* BC based on the modelled dates for the end of pre-cairn activity and the later Neolithic dates acting as the *terminus ante quem*. This remains uncertain because a second sample from the fill of the construction cut (1013) returned an early 2nd-millennium BC date (OxA-40048), indicating that some charcoal had been redeposited. Even without modelling, however, the pre-cairn dates (OxA-40131, OxA-40132, OxA-40051) suggest a construction date around the middle of the 4th millennium BC and certainly not any earlier than *c* 3630 cal BC.

The excavation did not find any evidence for multi-phase construction of the chamber, indicating it was built in one continuous effort within a shallow linear cut made into glacial till. The construction involved setting eight large, thin metagabbro slabs (S2–S9) on their edges in two parallel lines so that each opposing pair of orthostats formed the walls of the corresponding compartments (C1–C4). An additional orthostat S1 was inserted to form the back wall of the chamber. Stone wedges and pinning below the orthostats was used, as in the case of orthostat S8. The apparent misalignment of the two rear (C4 and C3) and the two front (C2 and C1) compartments was shown by the excavation in Trench 1 to be result of the way orthostats S6 (C2) and S9 (C1) lean towards the south-east and were subsequently obscured by peat. Originally, S6 and S9 would have been in line with orthostat S5 of compartment C3 and façade stone S24, which therefore represents the second entrance jamb, the other being S25.

The compartments were divided by septal stones, two of which (S14, S15) have survived, but the third is missing. Their main role, other than dividing the compartments, was to keep the orthostats from caving inwards. This was achieved via three pairs of jamb stones flanking the septal stones and overlapping with the orthostats from adjacent compartments, thus transferring the inward pressure on an empty chamber from its lateral sides onto the septal stones, which braced the structure. Five out of six jamb stones (S11–S13, S31) were still present, S11 and S31 having toppled inwards. The jamb stones may have also additionally supported the weight of the massive capstones (S16, S17, S18, S19).

The corrected alignment of orthostats S6 and S9 confirmed that stones S24 and S25 were a pair of jamb stones marking a 2m-wide entrance, which is in keeping with the overall width of the chamber ranging between 1.5m and 2.3m. Unlike the chamber, which was built in its entirety from metagabbro slabs, the entrance jamb stones S24 and S25 were both of syenitic gneiss.

Capstone S19, having probably been pushed forward over the entrance, caused stone S20 to lean forward and came to rest on top of it, while also resting back on jamb stone S25. Excavation in Trench 2 showed that S20 had stood around 4m tall within the entrance of the chamber, directly next to jamb stone S25. Allowing for its part burial, the overall length of S20 could be close to 6m. Its central position in the façade, its size and appearance with a prominent quartz vein, would have made it a striking feature of the monument. It is probable

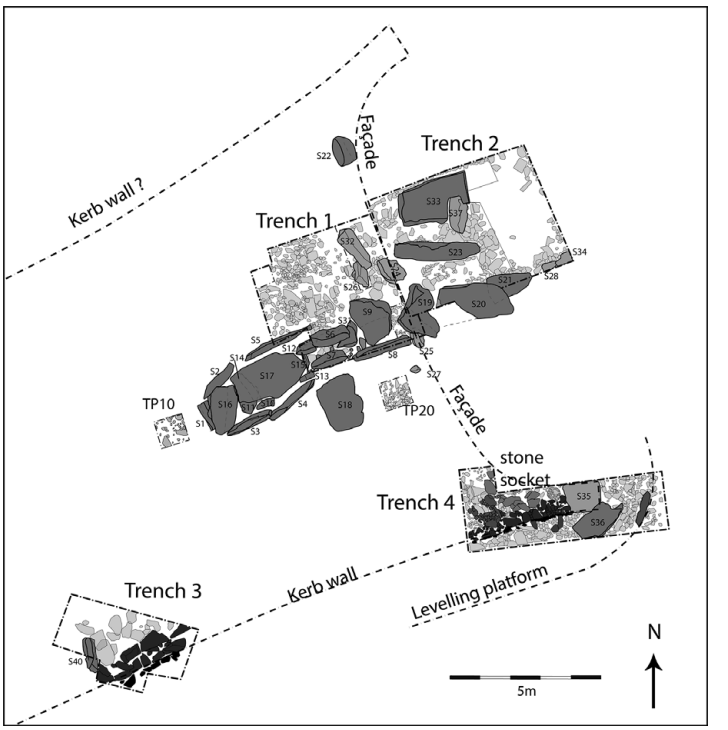
that S20 was one of a pair of portal stones, as is common among the Clyde cairns (eg Brackley (Henshall 1972: ARG28, Canmore ID 38894), Cairnholy I and II (Henshall 1972: KRK 2 and 3, Canmore IDs 63705 and 63716, etc). The partner for S20 at the Giant's Grave is likely to have been either S21 or S23, which is narrower and 3m in length, unless another large stone had been removed and broken down into rubble or reused elsewhere – most likely now within the post-medieval field walls within the vicinity of the Giant's Grave. The two portal stones would have provided a focal point at the entrance of the chamber, while modifying the access from a 2m-wide space between jambs S24 and S25 to a much smaller gap.

The excavation provided further information about the appearance of the façade (Illus 27). The whole of this appears to have either collapsed or been pushed over into the forecourt area. It appears to have been built in a 'post and panel' fashion, where metagabbro monoliths (S20, S21, S22, S23, S37) were linked with stretches of drystone walling represented by rubble (1028, 1029). This rubble was comprised of predominantly flat rectangular metagabbro blocks, which retained the stacked shape of a fallen drystone wall adjacent to S33. The façade may have further incorporated the displaced syenitic gneiss stones (S26, S32, S37) or these may have been used elsewhere in the cairn. One scenario, based on the current position of the stones, is that the portal stone S20 had been pushed forward by a displacement of capstone S19, causing a domino effect that flattened stone S21, which now lies in its shadow. If this conjecture is extended, then stones S28 and S21 would have once created an ascending line of monoliths culminating with portal stone S20. Alternatively, stone S28 could be a later addition in the forecourt, while S21 may have been a recumbent closing stone, as identified at Cairnholy I and II (Piggott & Powell 1951).

In addition to the heavily leaning portal stone S20 and the entrance jamb stones S24 and S25, the only façade stone that remained standing was metagabbro S22, located 4.15m to the north-west and leaning towards the south-west. Considering the depth of 0.75–0.80m at which Neolithic buried soil was revealed in Trench 2 and the test-pit nearest stone S22 (TP12), it can be estimated that the stone is *c* 2m tall. The angle of the lean of S22 above the current peat surface suggests its base is *c* 0.5m further to the north-east from the point where it currently enters the peat, thus giving the façade a crescentic shape, rather than being straight as proposed by Henshall (1972: 432) and Scott (Scott 1973; RCAHMS 1984: 50). The crescentic shape was confirmed by excavation at the southern end of the façade in Trench 4, where the end façade stone socket (4013) and the projecting hornwork terminating with large flat gneiss slab S35 were discovered (Illus 27). Metagabbro stone S36, which was an outlier in this area and hypothesised by Henshall (1972: 432) to be a displaced façade stone, was probably just that, lying less than 2m away from an empty socket lined with packing stones (4013).

The overall appearance of the façade must have been striking and involved considerable forethought and planning exemplified by the positioning and the choice of two contrasting pairs of stones forming a complex entrance. Smaller jamb stones S24 and S25, made of pinkish gneiss, framed the entrance and would have stood out in the otherwise greenish hue of the metagabbro megaliths (S20 and S21 or S23) and drystone walling. The colour of freshly quarried metagabbro stones may have been initially much brighter, almost gleaming white, as observed on rubble and stones that were trodden on during the excavation. Other smaller gneiss monoliths (S26, 32S, S37) may have been incorporated elsewhere in the façade, dominated by larger metagabbro megaliths. Overall, the façade would have had crescentic shape with a decreasing height from the tall portal stones in the centre to lower horned ends, defining the area of the forecourt.

The earliest activity within the forecourt is represented by charcoal embedded within buried soil (1033), dated to *3500–3350 cal* BC (OxA 40049) and *3370–3120 cal* BC (OxA 40050). Whether these dates relate to the initial construction of the cairn or the subsequent activity in the forecourt is unclear, although the latter option



Illus 27 Post-excavation plan of the site showing interpretative projections depicting the original geometry of the chambered cairn. (Image by Darko Maričević)

may be more plausible in the light of the overall dating range for Clyde cairns, which is discussed below. There was no evidence from Trenches 2 and 4 for the nature of the activity within the forecourt.

The south-eastern kerb of the cairn is represented by wall (4005) in Trench 4 and wall (3006) in Trench 3. Despite being 11m apart and with differences in their construction, these are aligned and meet the expected form for a Clyde cairn. Wall (3006) is the more substantial, retaining cairn material on the inside and a slender line of paving to its exterior. Wall (4005) lacked the revetment capabilities as it was built from much smaller stones. This indicates that the cairn was also less substantial at this location, perhaps descending in height not only from the direction of the chamber in the north-west, but also lengthwise from the south-west, which would make sense considering the low, narrow hornwork projection at its end. The hornwork and kerb wall (4005) were set into rubble (4008, 4014) and abutted by further rubble (4016), presumably with an idea to level the construction site and prevent lateral movement of the cairn material down the slope. This is a nice indication of how practical problem-solving contributed to the construction methods.

If these interpretations are correct, and assuming that the chamber had been centrally located within the cairn with a symmetrical façade and body, then it follows that the front of the cairn would have been *c* 20m wide, narrowing to *c* 16m over a distance of 20m where Trench 3 provides the last available evidence for its extent in this direction. Considering that the geophysical survey and test-pitting could not locate the back of the cairn beyond this point, the overall length remains unknown. One possible line of evidence is the sharp bend in the field wall that gives the forestry clearing its shape and is aligned with the axis of the chamber, which could suggest that it

was originally constructed around the butt end of a still-existing mound. This would give the cairn a length of *c* 35m.

MODIFICATION AND REUSE, PLACEMENT OF CERAMIC VESSELS IN EARLY 2ND TO EARLY 1ST MILLENNIUM BC

It is not possible to say how long the chamber was in use, because the excavated part had been cleaned out in antiquity. It is unclear whether the absence of evidence dating to the 3rd millennium BC is a consequence of the limited extent of the excavation and dating programme or reflects an absence of activity at the Giant's Grave.

The next dated episode was the construction of a small three-sided structure (4012) that abutted the south-east side of the kerb wall (4005) and was set into rubble (4016). This niche-like space was built to receive a small pot SF27 (Pot 1), found fragmented in a fill (4015) that contained charcoal dating to the first half of the 2nd millennium BC (OxA-401041, 1750–1625 cal BC). Rather than having accompanied human remains, the pot may have contained liquid and been a votive offering.

Having excavated only a small part of the monument, we cannot say whether this was the only such placement at this time. Charcoal from the fill of the construction cut of the chamber excavated in Trench 1 produced an identical date (OxA-40048, 1750–1625 cal BC), suggesting either some dismantlement of the cairn at this time or that residual Early Bronze Age charcoal became redeposited into the cut at a later date.

The placement of small ceramic vessels continued in the Late Bronze Age when a small makeshift cist (4004) was created within the cairn rubble between the kerb and immediately behind a façade stone. The cist contained two squat vessels SF17, one of which was complete and still maintaining its shape (Pot 2), while the sherds of the other (Pot 3) were scattered in the fill, perhaps indicating two separate interments, the second involving Pot 2 disturbing the previous placement of Pot 3. The date for this activity from the charcoal obtained from fill of the cist (4002) was 1055–905 cal BC (OxA-40134).

A second pot SF25 (Pot 4) was placed within niche (4012) between 830–780 cal BC (OxA-40133). This was placed above the Early Bronze Age vessel SF27 (Pot 1), although it is unknown whether that pot had been evident at the time.

DEMOLITION/COLLAPSE AND STONE ROBBING, MID TO LATE 1ST MILLENNIUM BC

Within a couple of hundred years of Pot 4 (SF25) being placed in niche (4012), much of the cairn was demolished. Charcoal of Early Iron Age date has been recovered from several areas of the site in association with the evidence for disturbance, demolition and robbing. In Trench 4 an intrusive charcoal dating between 780–540 BC (OxA-3070-31) was recovered from underneath a loose slab of the Neolithic kerb wall (4005).

The cairn material from the north-west side of the chamber was almost entirely robbed, where a date of 730–400 cal BC (OxA-40129) was retrieved from one of three small depressions [1017, 1019, 1021], in the underlying soil (1012). These depressions are interpreted as arising from the removal of large stones that had been part of the cairn foundation (1011). The disturbance extended into the chamber compartments C1 and C2, which were probably cleared out at this time. This may have been when EBA charcoal (OxA-40048) became redeposited into the fill of the construction cut for the chamber.

In Trench 3, the robbed remains of the kerb and the remaining basal layer of the cairn (3006) were covered in silt (3007), dated to 730–410 cal BC (OxA-40052), indicating that here too most of the cairn was dismantled by this time. Silt (3007) was sealed by the cobbled surface (3002) associated with wall (3003) in which small megalith S40 was incorporated. This presumably derived from the chamber or the façade of the cairn. It is not clear whether the wall and the hard standing are Iron Age or later in date. The results of the electrical resistance survey show that the wall continues south for at least 25m before it enters the conifer plantation, while the hard standing extends over the area of at least 20m × 10m between Trenches 3 and 5. The younger of two charcoal samples from Trench

5 dates to 740–410 cal BC (SUERC-97389) and came from colluvium (5002) that also contained dating sample (SUERC-97388, 1390–1220 cal BC) and the Neolithic leaf-shaped arrowhead SF15. The overlying rubble (5001) likely derived from the eroding cairn.

In addition to these four statistically consistent dates with combined range of 780–400 cal BC (OxA-X-3070-31, SUERC-97389, OxA-40129 and OxA-40052), two dates from disturbed rubble (202) at the south-east side of the chamber in test-trench TP20 (Beta-421418, 540–390 cal BC and Beta-421419, 410–230 cal BC) provide evidence for another, probably slightly later, episode of activity. Thus, there is evidence for general denudation of the cairn in the Early Iron Age in the form of well-dated layers across the site, although whether this was systematic effort or piecemeal process remains unclear.

Even though we do not have equivalent radiocarbon dates from the forecourt, there is a strong possibility that the façade either collapsed or was tipped at a similar time. Ceramic vessel SF24, which was found on top of rubble (1029), interpreted as collapsed dry walling of the façade, is not particularly diagnostic but fits with the Early Iron Age date that marks the robbing and demolition of the monument elsewhere. The pattern of the façade collapse uncovered in Trench 2 suggests one big event that saw stone S33 fall forward together with a large portion of surrounding drystone walling, but nearer the entrance the events may have taken place somewhat later. Stone S23 certainly came to rest in its current position after further accumulation of rubble on top of primary collapse and the manipulation of rubble to create short wall (1030). It is tempting to see this activity in the same light as the building of wall (3003) and hard standing (3002) in Trench 3, even though neither can be confidently placed into a broader picture of what was happening around the chambered cairn at this time.

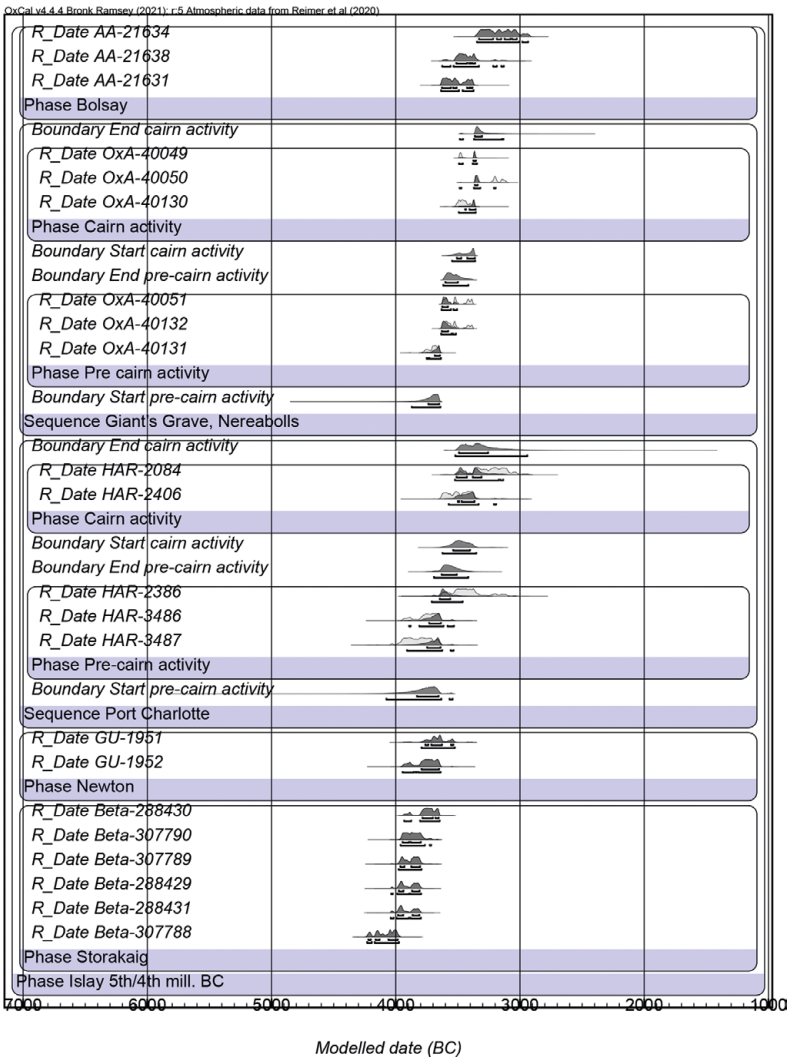
The robbing of the cairn may have continued into historic times. There was, however, a complete absence of glazed pottery and glass that one would expect if there had been substantial activity. The onset of peat formation began relatively recently, in the 16th and 17th centuries (Beta-421421; Beta 421420), after which slabs were laid across the accumulating peat, appearing to provide paving (1000). The final act of deposition was a small whisky bottle found in the chamber during the vegetation clearance.

CONCLUSION

To conclude this report, we will return to the three research questions that motivated the excavation at the Giant's Grave.

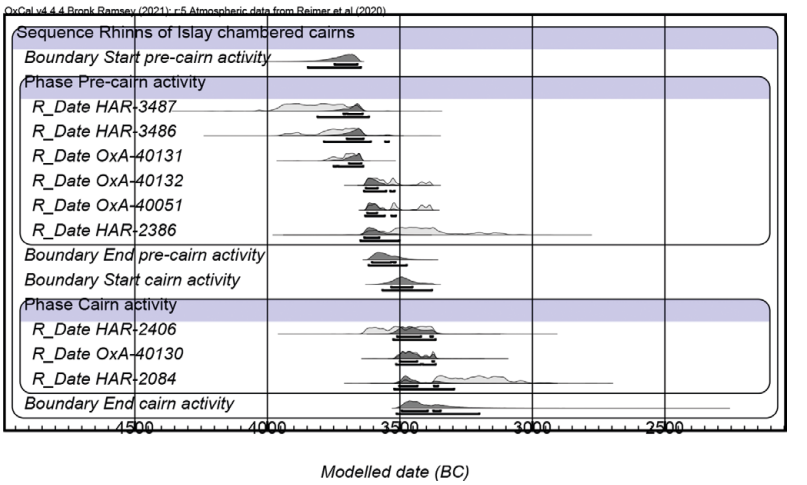
THE GIANT'S GRAVE AND THE MESOLITHIC/NEOLITHIC TRANSITION

The radiocarbon dates from the Giant's Grave contribute little to our understanding of the Mesolithic–Neolithic transition. The excavation identified pre-chambered cairn activity as from 3770–3640 cal BC (OxA-40131), consisting of at least two separate events, interpreted as vegetation clearance but without any artefactual evidence. Pre-cairn activity identified at Port Charlotte chambered cairn by a deposit of burnt hazelnut shells, animal bone and chipped stone artefacts, located several metres south of where the chamber was subsequently built (Harrington & Pierpoint 1980), was, according to the radiocarbon dates, also more than a single event. The pre-cairn dates from both sites overlap with each other and with Mesolithic activity at Storakaig (Wicks et al 2014); for all relevant dates see Illus 28. Dates from pits containing Carinated Bowl Early Neolithic pottery at nearby Newton confirm a Neolithic presence on Islay prior to the construction of the Giant's Grave and Port Charlotte chambered cairns, which may have also overlapped with a Mesolithic presence. The latest date for pre-cairn activity at Port Charlotte is 3640–3100 cal BC (HAR 2936) and the earliest date from the inside of the chamber is 3630–3370 cal BC, indicating that the construction of the cairn falls in the period 3640–3370 cal BC, which is almost identical to the construction date proposed for the Giant's Grave, 3620–3370 cal BC



Illus 28 Modelled C14 dates (n=22) for the 4th millennium on Islay (A_{model}=94.7, $A_{overall}$=95.3). The corresponding table can be found in Appendix 5. (Image by Darko Maričević)

(OxA-40130). Both sets of dates are later than the last-dated Mesolithic activity at Storakaig, dated to 3930–3650 cal BC (Beta-288430). The interpretation of 4th-millennium BC dates from Bolsay remains a matter of debate. These may either relate to the Neolithic community associated with the Giant's Grave and Port Charlotte chambered cairns, a continuation of a separate Mesolithic population on the island, or evidence for the interbreeding and cultural integration between the indigenous Mesolithic and incoming Neolithic people (Mithen 2022). Close similarities in the construction of the Giant's Grave and Port Charlotte cairns support the dating evidence that they were constructed within a short span of time of each other, as demonstrated by the combined Bayesian model of pre-cairn and post-construction dates from the two sites (Illus 29). We assume this was either by the same or by two closely affiliated communities.

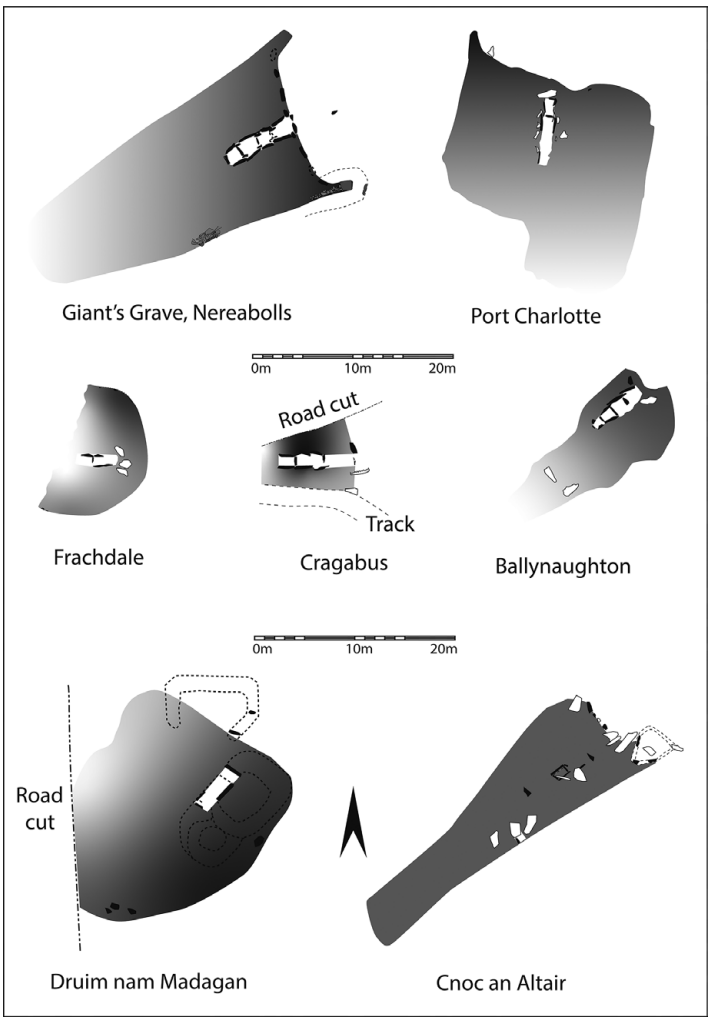


Illus 29 Radiocarbon dates from Port Charlotte (prefix HAR, n=5) and the Giant's Grave (prefix OxA, n=4) modelled together to show pre-cairn and the earliest post-construction phases at both sites (A_{model}=84.9, $A_{overall}$=85.6). HAR-2084 has been left in the model, but note that it had a low agreement index (A=57.5%). (Image by Darko Maričević)

CHAMBERED CAIRNS ON ISLAY: LANDSCAPE, ARCHITECTURE AND CHRONOLOGY

Distribution of chambered cairns on Islay, much as that of the Bronze Age cairns, is spread unevenly in the Rhinns, the Oa and the south of the island (Illus 1), away from the best agricultural land in the central belt along the Sorn and Laggan valleys. To what extent this distribution is likely to be a matter of preservation due to the intensive historic and modern farming in these areas is unclear. Cummings (2016: 49) states that the chambered cairns on Islay were positioned to overlook the sea; however, neither Cragabus nor Cnoc an Altair has a view of the sea. Frachdale and Cragabus both command extensive inland views to the north and north-east. The Giant's Grave is 2.3km from the coast at 140m OD. Prior to the 1980s conifer plantation, the site offered 180° views over eastern Islay and the Paps of Jura, Loch Indaal, the Oa and, on any reasonably clear day, Ireland. There is no certainty, however, that these views could be seen in the Early Neolithic, because of tree cover in the vicinity of the Giant's Grave. The wood charcoal from the excavation as described in Appendix 3 suggests hazel scrub, while the pollen record from nearby Loch a' Bhogaidh indicates only small-scale clearance until the Middle Bronze Age (Edwards & Berridge 1994). Nevertheless, the altitude of the tree line, extent of land cover and height of trees within the mid-Holocene landscape of the Rhinns all remain unclear, this being the most exposed region of Islay. Even without clearance, the Giant's Grave might have provided impressive views across both land and sea, especially in winter when trees were not in leaf, as Cummings & Whittle (2003) note for cairns surrounded by trees. In this regard, the Giant's Grave is most similar to Ballynaughton and Druim nam Madagan, although tree cover may have been more substantial in the south of Islay. Port Charlotte chambered cairn is on the east coast of the Rhinns, which was a separate island until the end of the first millennium BC (Dawson et al 1998).

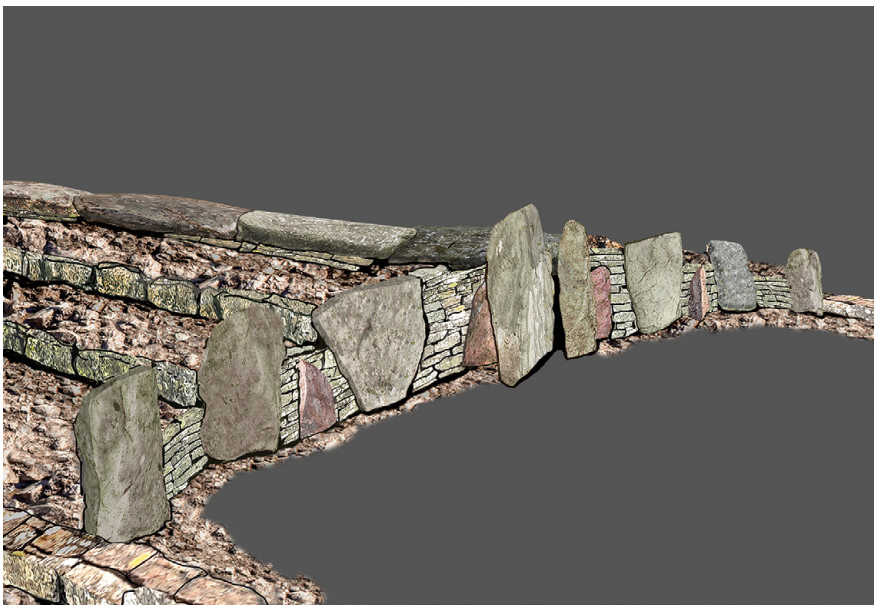
The Giant's Grave excavation has confirmed architectural similarity with the Port Charlotte chambered cairn, which differentiates these Rhinns chambered cairns from the others on Islay (Illus 30). Like most Clyde cairns elsewhere in the region, those in the Oa and the south of Islay implemented imbrication of orthostats to achieve the desired length of the chamber. This is



Illus 30 Comparative plans of chambered cairns on Islay including the reconstructed plan of the Giant's Grave based on the results of the excavation. Druim nam Madagan surveyed by Maričević and showing later structures. All other cairns redrawn after RCAHMS (1984). (Image by Darko Maričević)

an elegant and simple way of extending and linking the construction of multiple compartments by the unidirectional overlapping of the ends of consecutive orthostats. These are internally braced by septal stones to keep the sides of the chamber from caving in. At the Giant's Grave and Port Charlotte, the same requirement was resolved with the use of jamb stones positioned at either side of the septal stones with overlaps front and back with the adjacent orthostats. This technique was recognised by Scott (1962, 1969, 1973) as 'Irish' in origin due to its common use among the Court cairns in Ireland. In addition to the Giant's Grave and Port Charlotte, Scott (1969, 1973) also identified Achnagoul II (ARG 8) and Creag Mhor, Auchindrain (ARG 10), two neighbouring Loch Fyneside cairns (all in Argyll & Bute), as having chambers built in the same technique. Scott also postulated that concave façades were indicative of an Irish influence. Although he and others had stated that the Giant's Grave had a flat façade, excavation has shown this to

be erroneous, the façade being concave and featuring low hornwork. While the use of jamb stones and a concave façade at the Giant's Grave alludes to the Irish Court cairns, other architectural features relate to the Clyde cairn tradition. This is best seen in the inclusion of tall portal stones at the entrance, a feature characteristic of the Clyde cairns in Argyll, Arran and Galloway but uncommon in Court cairns in Ireland, where the entrance is usually lintelled and the entrance stones in proportion or sometimes smaller than the monoliths making up the rest of the façade. The Giant's Grave façade, unlike its chamber, which would not be visible, combined pinkish gneiss and greenish metagabbro stones, forming an impressive public front of the monument (Illus 31). Deliberate choreography of different stone sources in the construction echoes similar practices in the Clyde cairns on Arran (Jones 2002) and in Kintyre (Cummings & Robinson 2015). Our understanding of the chronology of Clyde and Court cairns has been improved by recent fieldwork and dating programmes, which have given us closely comparable date ranges for the start of activity in both groups of monuments. Bayesian modelling of dates obtained from human bone found in the chambers places the onset of Court cairns to *3700–3570 cal* BC and that of Clyde cairns to *3765–3645 cal* BC (Schulting et al 2012; Sheridan & Schulting 2020). In both cases their use continues into the late 4th millennium BC. The date for the construction of two cairns on the Rhinns of Islay, with the combined range of *3640–3370 cal* BC, falls in the period after the initial activity modelled for Clyde cairns. At another recently excavated Clyde cairn at Blasthill, Kintyre, a smaller primary cairn was converted into the Clyde cairn most likely sometime between 3630 and 3360 cal BC. Here too, Court cairn influences have been suggested due to the remodelling of the façade to create a more enclosed forecourt (Cummings & Robinson 2015). The implication of the dating for the architecture of Giant's Grave and Port Charlotte is that, as Scott postulated, they reflect contacts between the two regions during the fully developed phase of construction of Court and Clyde cairns, rather than the initial development stage,



Illus 31 Artistic impression of what the Giant's Grave may have looked like, taking into account the evidence and the stone textures from the excavation. Stepped cairn construction based on evidence from Carn Ban, Arran and Port Charlotte, Islay. (Image by Darko Maričević)

although this must have also featured a steady rate of cross-fertilisation of ideas.

POST-NEOLITHIC USE OF THE GIANT'S GRAVE

Chalcolithic and Early Bronze Age communities took a considerable interest in Neolithic chambered cairns (Armit 1996; Wilkin 2016). The fact that no evidence has been found at the Giant's Grave for any activity during the entire 3rd millennium BC could be due to the limits of the investigation or the preservation of the monument. Beaker sherds have been found inside the chamber at Cragabus, while at Bolsay, in the vicinity of the Giant's Grave, at least two phases of activity during the 3rd millennium BC are reflected in a set of C14 dates with ranges of 3080–2760 cal BC (AA-21635: 4290±45 BP), 2910–2620 cal BC (AA-21637: 4200±55 BP), and 2570–2280 cal BC (AA-21636: 3930±45 BP).

The earliest identified post-Neolithic activity at the Giant's Grave belongs to the 18th/17th century BC, when the chambered cairn becomes focus of either burial or votive deposition associated with Pot 1 (SF27) in a small niche constructed against the kerb of the cairn, perhaps after a period of abandonment. This is followed by another long gap in evidence, lasting around 600 years, after which two further similar episodes of deposition occur in the 11th/10th and 9th/8th centuries BC associated with Pots 2 and 3 (SF17) in a small cist and Pot 4 (SF25) in the niche already containing much earlier Pot 1. We suspect the long lapses of time between these depositions reflect the limited extent of excavation and preservation rather than the use of the monument. The evidence suggests a focus on the façade of the monument, but it is possible that the later clearance of the chamber had removed not only the Neolithic but also any possible Chalcolithic and Bronze Age deposits.

Activity at the Giant's Grave chambered cairn continued throughout the period between the 8th and the 3rd century BC, but its nature changed from one of prolonged veneration to near obliteration. Systematic robbing took place during the Early Iron Age. This removed most of the cairn material, and parts of the façade toppled forwards, or was pushed over. Some of the megaliths were most likely broken up and taken away, but the majority were left in disarray, either leaning or fallen. The front two compartments of the chamber were perhaps also cleared out at this time, while the back two may have been protected by the weight of the caved-in capstones. These remain uninvestigated. Pot 5, rather than being another votive offering, may have been caught up in all this destruction and left lying broken on the spread of façade rubble.

While most of this activity was destructive, there were attempts to modify the monument and its environs into a more utilitarian arrangement. The cobbled surface in Trench 3 post-dated the robbing and was most likely Iron Age in date with the *terminus post quem* of 730–408 cal BC from the underlying silt layer. The associated north/south wall was at least 25m long, suggesting division of a substantial area, and indicates how some of the cairn material had been used. A small metagabbro megalith S40, perhaps the missing jamb, had been incorporated into this wall. The situation on Islay at this time may have been one of deteriorating climate and increased storminess (Kylander et al 2020), which, in addition to the encroaching peat, may have been pushing the population towards more intensive utilisation of uphill areas for pasture. At the same time, society was undergoing fundamental changes, evident in the appearance of monumental drystone architecture in the form of duns, crannogs, brochs and forts.

Supplementary material: appendices available online at https://doi.org/10.9750/PSAS.152.1357

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