

Dating Balbirnie: recent radiocarbon dates from the stone circle and cairn at Balbirnie, Fife, and a review of its place in the overall Balfarg/Balbirnie site sequence

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To the memory of Graham Ritchie

ABSTRACT

The interpretation of the sequence at the Balbirnie stone circle and cairn was based largely on stratigraphy and the then-perceived chronology of ceramic styles. An increased radiocarbon database and the facility to date cremated bone have now allowed the sequence at this site to be refined and reinterpreted. The construction of the stone circle can be demonstrated to have begun 1,000 years earlier than originally reported and the stone circle can be shown to have been in use for over 1,500 years. These new data, as well as an increased and growing amount of research on later Neolithic and earlier Bronze Age ritual monuments in Britain as a whole, has further allowed the position of this site within the Balfarg/Balbirnie ritual complex to be reconsidered and as a result it is possible to suggest a revised sequence for the complex.

INTRODUCTION

The dating of stone circles is fraught with problems. Unlike the posts of timber circles, stones cannot themselves be dated by radiocarbon. Even the integrity of organics from the stoneholes needs strict scrutiny as residual material can easily become incorporated into the backfill and intrusive material can work its way into the packing, particularly if the latter comprises a loose stony matrix. Broad artefactual associations may also be unreliable as it is not always clear exactly at what point in a site's history those artefacts were deposited. Relative dating may not always be possible as stratigraphic relationships between the stones and any features that they may enclose are rarely visible: were

burials added to the circle or was the circle built to enclose an existing cemetery? Even in the case of circles with central cairns, the exact sequence may not be discernable until excavation. Thus at Balbirnie, Fife, Graham Ritchie (1974) concluded that the stone circle was the primary monument, whilst at Tomnaverie, Aberdeenshire, Richard Bradley (2005) demonstrated the reverse sequence. At Croft Moraig, Perth and Kinross, it has been shown that there were at least four phases of modification over a period of almost a millennium (Piggott & Simpson 1971) and that even well-excavated sites such as this are open to re-interpretation (Bradley & Sheridan 2005). Furthermore, stone circles have long been seen as icons in British and Irish prehistoric studies and, since their

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construction, have been visible elements in the landscape. As a result, they have attracted attention (excavation, ‘embellishment’ and destruction) through time as might be demonstrated by the deposition of two metal pails beside Stone 1 at Balbirnie (Ritchie 1974, 3) or the 19th- and 20th-century pottery from low in the socket of Stone 8 at Mitchells Fold, Shropshire (Blore 1995).

Aubrey Burl, in his magisterial study of stone circles (2000) was acutely aware of these problems and many of the radiocarbon dates that he cites (2000: 376–7) have, in fact, little to do with the *construction* of stone circles but rather with the activities that took place within their confines. Though Burl speculated that stone circles may have originated in the forecourts of chambered tombs, he suggested that their true emergence came after what he saw as a ‘time of crisis’ during the middle Neolithic or the last centuries of the 4th millennium BC (2000: 29). He regarded them as an upland response to lowland henges, and saw their construction and use continuing until the end of the Early Bronze Age. While Burl’s broad-brush approach was admirable at the time, it now seems appropriate, given the advances in radiocarbon dating, to review the question of chronology to determine whether the construction of sites, as opposed to their use, can be more tightly dated. Similarly, it is now questionable whether stone circles should be seen as responses to lowland henges given that recent research at Dyffryn Lane, Powys (Gibson 2010) and Broomend of Crichtie, Aberdeenshire (Bradley & Clarke 2007) is indicating that at least some henges were constructed to enclose pre-existing stone circles: a scenario that seems equally possible at Balfarg, Fife and which will be discussed further below. (The present writer uses ‘Henge’ with regard to Balfarg as a shorthand term in the full understanding that

previous authors (Mercer 1981; Mercer et al 1988) acknowledge the site’s peculiarities by labelling it ‘henge-type enclosure’.)

The cairn and stone circle at Balbirnie, just outside Markinch, Fife, was partially excavated by Balfour in 1883 and completely excavated by Graham Ritchie in 1970 and 1971 in advance of road widening works. This excavation was swiftly published (Ritchie 1974) and the circle was re-erected in its current position by the Glenrothes Development Corporation. Based on stratigraphic observation, Ritchie identified three major phases of activity at Balbirnie.

Phase 1 was represented by the construction of a near circle of ten stones (measuring 15m × 14m in diameter) surrounding a central rectangular setting defined by edge-set slabs (illus 1). The uprights of the circle were associated with deposits of cremated human bone. It must be stated at the outset that, although some of the cremated remains from the site comprised scatters rather than discrete deposits, none of the deposits seems to amount to that expected for a complete individual (Table 1). Even the largest of the deposits (Cist 2, Cremation 1, adult female and child – 1635.3g) seems too small to represent the complete remains of two individuals (McKinley 1989). Indeed, of the 24 deposits of cremated remains described by Bernard Denston in his bone report (Appendix A in Ritchie 1974), only four weigh over 500g and fourteen weigh under 250g. Even allowing for a considerable loss of material during cremation under some weather conditions, it would seem that we are dealing with token deposits of cremated human bone rather than interments of the complete remains of discrete individuals.

In Stoneholes 1 and 2, deposits of cremated remains (III and IV) are recorded from the base of the socket or low within it. In Stonehole 9, one deposit (VI) was found

in the lower fill. The other deposit (VII) was located in the upper fill at the west end of the stone. The deposit in Stonehole 10 (VIII) was also within the fill of the stonehole. Four fragments of cremated remains (V) were found within disturbed Stonehole 7. In the case of Stonehole 1, there can be no doubt that the cremated remains (III) were deposited when the stone was set in place since Denston refers to the deposit as being beneath the stone. There is no reason to doubt that this was also the case at Stoneholes 9 (VI) and 10 (VIII) as no traces of later insertion were noted. The primacy of VII at the west end of Stone 9 is less certain. Stone 2, however, was collapsed and the deposit of cremated remains here may well have been placed prior to the collapse, at the time of the collapse or indeed later (see below). Ritchie dated this primary phase to the 'later third or early second millennium BC' on the basis of the recovery of two sherds of Grooved Ware from the packing of Stonehole 10 (however, as the Grooved Ware was represented by small sherds the question of residuality needs to be considered). Shortly after the excavation, unidentified charcoal from the soil fill of the central rectangular setting was dated to 2840 ± 80 BP (GaK-3426): a date that is clearly too late for this phase and is rejected here for reasons given below.

Phase 2 was defined as the period when the interior of the circle was used as an Early Bronze Age cist cemetery. Cists 1 to 4 had been dug into the natural subsoil but only to a depth that would have left the capstones visible above the ground. Cup- and ring-marked stones were associated with Cists 1 (side slab) and 3 (from the outer packing material). A third cup-marked stone had also been found during Balfour's 19th-century excavations. Each cist was associated with a deposit of cremated human bone as well as artefacts typical of the Early Bronze Age

(Table 1). A disc bead of cannel coal or shale and a flint flake were recovered from Cist 1, a square-sectioned bone bead from Cist 2, a bowl Food Vessel and flint knife from Cist 3 and a V-perforated jet button from close to (and considered to have been derived from) Cist 4. This jet button has been used by Ian Shepherd to describe an entire type of V-perforated button: 'the Balbirnie Type' (Type 6b: Shepherd 2009). In the case of Cist 3, the cremated remains were found both within the cist and from amongst the packing material. Cists 3 and 4 damaged the central rectangular setting and therefore provide a *terminus ante quem* for this feature clearly demonstrating its primacy over the cists. Also on the natural subsoil surface was a crushed Beaker associated with a disc bead of cannel coal or shale and an angular arrangement of charred wood possibly representing part of a box. This unidentified charcoal produced a date of 3280 ± 90 BP (GaK-3425).

Phase 3 was identified as the building of the kerbed cairn within and incorporating the stone circle. This took up the entire internal area of the circle and had also been the focus of ritual activity in terms of the deposition within the cairn material of both concentrations and spreads of calcined human bone (Table 1).

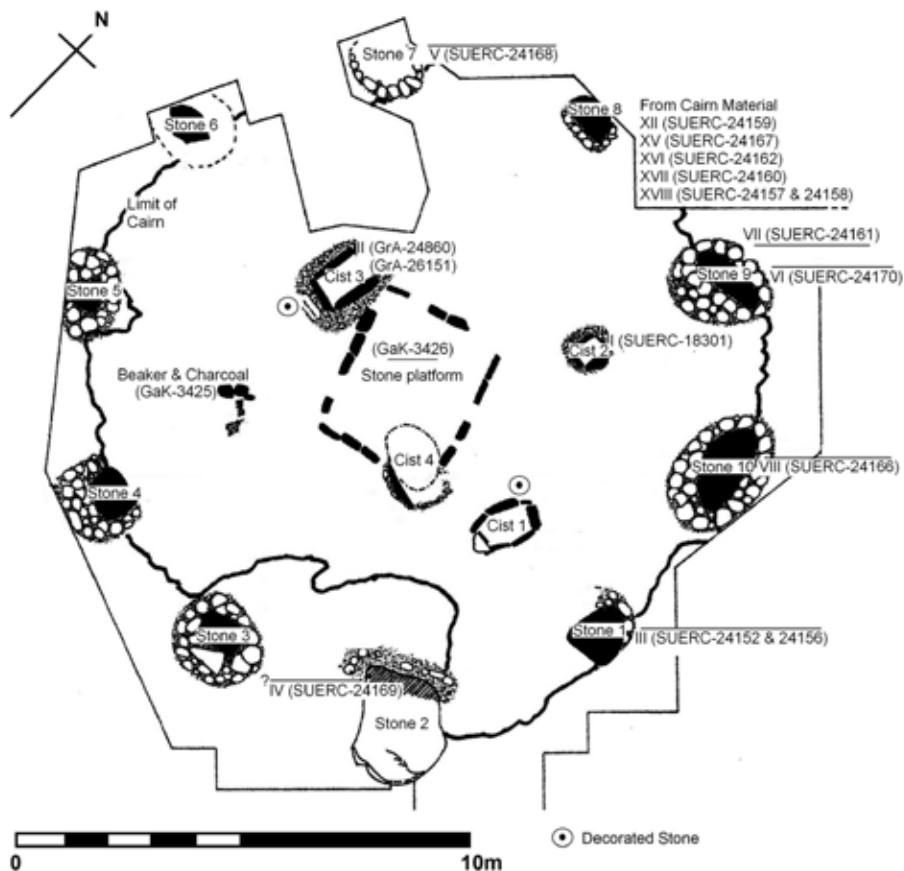
As can be seen from the above, representing a very brief summary of Ritchie's detailed excavation account, Balbirnie is a fairly unusual site in that it preserves stratigraphic relationships between structural elements or features and furthermore the deposition of cremated human remains in sealed contexts is associated with all three major phases. Unfortunately the facility to date cremated bone was not available to Ritchie at the time, but when it did become available, from the late 1990s (Lanting & Brindley 1998), the opportunity was taken by Alison Sheridan to obtain dates for cremated bone from Cists 2 and 3 as part of the (then-named) National

TABLE 1
Deposits of cremated remains from Balbirnie organised by site phase

<i>Cremation no</i>	<i>Context description</i>	<i>Wt (grams)</i>	<i>Summary of cremated remains</i>	<i>Associations</i>	<i>Existing dates</i>
<i>Phase 1</i>					
III	Beneath Stone 1	157.2	Adult, possibly male plus remains of a child or female		
IV	Base of Stone 2 (Ritchie)				
	Cairn material (Denston)	817.4	Adult, possibly female		
VI	Fill of Stonehole 9	373.3	Adult, possibly female		
VII	W end of Stone 9	257.5	Adult, possibly female		
VIII	Stonehole 10	279	Child		
V	Disturbed Stonehole 7	3 small fragments			
	Soil within rectangular setting		charcoal		2840 ± 80 BP (GaK-3426)
<i>Phase 2</i>					
Crem I: Cist 2		1635.3	Adult female and child	Bone bead	3625 ± 35 BP (SUERC-18301)
Crem II: Cist 3		421.9	Adult and child	Food vessel, flint knife	3335 ± 40 BP (GrA-24860) 3320 ± 40 BP (GrA-26151)
Beaker					3280 ± 90 BP (GaK-3425)
<i>Phase 3</i>					
IX	Cairn	155.7	Possible adult		
X	Cairn	68	Possible adult and child	Above rectangular structure with sherd x	
XI	Cairn	604.6	Possible adult and child		

TABLE 1 (continued)

<i>Cremation no</i>	<i>Context description</i>	<i>Wt (grams)</i>	<i>Summary of cremated remains</i>	<i>Associations</i>	<i>Existing dates</i>
<i>Phase 3</i>					
XII	Cairn	54.7	Possible adult		
XIII	Cairn Trench D	56.8	Possible child		
XIV	Cairn	92.2	Possible child or female		
XV	Cairn	86.4	Possible adult male	Basal layer of cairn N of cist 1	
XVI	Cairn Trench D	137	Adult	5.50m Stone III, 3.30 central peg	
XVII	Cairn Trench D	208.9	Adult, possibly male.	Cairn fill	
XVIII	Cairn	172.5	Adult, possibly female and child	Abraded urn sherds	
XIX	Scattered over cairn	61.6	Possible adult		
XX	Scattered over cairn	49.5	Possible adult female		
XXI	Scattered over cairn	180.1	Fragments		
XXII	Scattered over cairn	654.7	Adult, possibly male and child		
XXIII	Scattered over cairn	425.5	Adult, possibly male and child		
XXIV	Scattered over cairn	401.2	Adult, possibly male.		



ILLUS 1 Balbirnie Stone Circle and Cairn showing location of the samples. Line above the laboratory number indicates that the sample was from low in the stonehole, line below indicates that the sample was from high in the fill. From Ritchie 1975 with additions

Museums of Scotland *Dating Cremated Remains Project* (Alison Sheridan 2004a; 2008; and see Table 1). During 2009 the present author undertook a more ambitious radiocarbon dating project, in which cremated bone representative of all the phases was dated (see illus 2, Table 2 and below). The aim of the first part of this paper then, is not to re-interpret Ritchie's site sequence but rather to complete his excavation report by setting the sequence within an absolute chronology. This then prompts a reassessment of Balbirnie's place within the Neolithic and Early Bronze Age history at the Balbirnie/Balfarg

ceremonial complex (Mercer 1981; Mercer et al 1988; Barclay & Russell-White 1993). The paper is also able to offer some direct dating evidence for this iconic but poorly understood monument type: the stone circle.

THE SAMPLES

The cremated remains as reported by Denston in Ritchie's report are summarised below (Table 1) and the provenances of the pre-cairn samples are given in illus 1. The radiocarbon dates obtained before the current

initiative (being the two obtained by Ritchie on unidentified charcoal in the soil filling of the rectangular structure and associated with the Beaker on the natural subsoil surface and the two aforementioned cremated bone dates obtained by Sheridan) are listed in Table 1 while Table 2 integrates these with the dates obtained from the current programme.

Whilst the cremation deposits can be identified within the collection held in the Leverhulme Centre for Human Evolutionary Studies, University of Cambridge (formerly known as the Duckworth Laboratory), the task of identification was hindered by there being two sets of Roman numerals allocated to each cremation. One, in lower case, seems to have been the number allocated during the excavation and the second set, in upper case, refers to the number as published; the bags and boxes are labelled with the original set of numbers. Denston's original typescript report, however, records weights and some contextual details allowing the two sets of numerals to be reconciled. Unfortunately, a remaining uncertainty concerning deposit IV, recorded in the report as coming from the base of Stonehole 2, has proven more difficult to resolve. The weight cited in the published report identifies this as Denston's cremation deposits III and XXI combined and yet in his original typescript he records IV as coming from the cairn material. If this is the case then no report can be located for the cremation from Stonehole 2. However, a hand-written note from Graham Ritchie, accompanying some extra cremated remains from the 1971 excavations, lists cremation xxi as a 'Deposit/scatter beneath Stone II and in stone hole ie additional to (iii) examined 1970'. Denston's report does indeed list this deposit and the combined weights confirm that it was added to his cremation deposit iii. Ritchie's note also lists cremated remains (xxiii, xxiv and xxv) coming from Stoneholes XI and XII, which

is at first sight puzzling given that there are only ten stones in the circle. This again must relate to a pre-publication field numbering system as the weights of the deposits clearly identify them as coming from Stones 7 and 9. Unfortunately the site archive for Balbirnie in the NMRS does not include a field drawing with the initial numbering system on it. The current author has compiled a concordance list between the initial numbers for the cremated bone and stoneholes and the final, published versions; this has been deposited in the NMRS Balbirnie archive. The numbers that are henceforth used to describe the deposits of cremated bone are as listed in the publication report (Table 2).

All the cremated bone deposits from the stoneholes were sampled. As already mentioned, the cists and wood associated with the Beaker from Phase 2 had been previously dated, the latter at the time of excavation by Ritchie and the former by Alison Sheridan during the first decade of this century. Deposits of cremated bone from the cairn material representing the final visible prehistoric activity at the site were also sampled. In the cases where more than one individual was represented in a bone deposit, those individuals had been kept separate by Denston and a fragment from each was sampled to test for curated bone.

RESULTS

The results are presented in illus 2 and Table 3. Calibrations were performed using OxCal v4.1 (Bronk Ramsey 2010) and the IntCal09 curve (Reimer et al 2009). The results can be seen to support Ritchie's sequence although they extend his putative chronology by a millennium. Two more phases, one relating to the deposition of cremated remains in the upper fill of the stoneholes and another indicating

TABLE 2
C14 Samples from Balbirnie, Fife

<i>Cremation</i>	<i>Bone identification</i>	<i>Wt (grams)</i>	<i>Context</i>	<i>Lab No</i>	<i>Date (BP)</i>
<i>Ritchie's Phase 1</i>					
III	Individual 1 Cranium: parietal: adult:	4.6	Beneath Stone 1	SUERC-24152	4355 ± 35
III	Individual 2 Cranium: parietal: adult Cranium: Rt greater wing sphenoid, zygomatic suture	4 (total)	Beneath Stone 1	SUERC-24156	4370 ± 30
VIII	Radius shaft	3.5	Stonehole 10	SUERC-24166	4405 ± 30
V	Longbone: femur or tibia	1.2	Stonehole 7	SUERC-24168	4345 ± 30
IV	Fibula or distal ulna	2.1	? Beneath Stone 2 ?	SUERC-24169	3630 ± 30
VII	Cranium with suture	3.3	Concentrated deposit W end of Stone 9	SUERC-24161	4150 ± 30
VI	Longbone: femur or tibia	3.9	Filling of Stonehole 9	SUERC-24170	4330 ± 30
Charcoal	Unidentified		Soil fill of rectangular setting	GaK-3426	2840 ± 80
<i>Ritchie's Phase 2</i>					
XV	Fibula	1.7	Scatter next to cist 1, with charcoal, sherd and jet beads	SUERC-24167	3310 ± 30
I			Cist 2	SUERC-18301	3625 ± 35
II	Individual 1		Cist 3	GrA-24860	3335 ± 40
II	Individual 2		Cist 3	GrA-26151	3320 ± 40
Charcoal	Unidentified		Associated with Beaker	GaK-3425	3280 ± 90
<i>Ritchie's Phase 3</i>					
XVIII	Individual 1 longbone possible tibia	4.9	Scatter, associated with abraded Urn sherds	SUERC-24157	3345 ± 30

TABLE 2 (continued)

Cremation	Bone identification	Wt (grams)	Context	Lab No	Date (BP)
<i>Ritchie's Phase 3</i>					
XVIII	Individual 2				
	longbone: distal ulna	2.2	Scatter, associated with abraded Urn sherds	SUERC-24158	3305 ± 30
XII	longbone: possible tibia	2.2	Scatter c 30cm above NW corner of rectangular structure in cairn material	SUERC-24159	3365 ± 30
XVII	longbone: femur or tibia	3.1	Scatter in cairn material	SUERC-24160	3340 ± 30
XVI	Cranium: parietal: adult	2.3	From cairn material	SUERC-24162	3285 ± 30

a prolonged period of ‘inactivity’ or at least activity that has left no archaeological trace, can also be added to Ritchie’s scheme. There is also a degree of uncertainty concerning the cairn itself. Ritchie’s plan (1974: Fig 1a) suggests a kerbed cairn with rather larger stones on the circumference; however there seems to be a parallel internal kerb shown between Stone 1 and 2 in the eastern arc. This might suggest that the cairn had originally been a ring-cairn that had subsequently been in-filled in which case the cairn itself would have been a two-phased monument. This said, the fact that this internal kerbing is not shown anywhere else on the plan suggests to the present writer that the single-phased kerb cairn is the preferred interpretation. The new phasing and absolute dates for these phases can be summarised as follows.

PHASE 1

This corresponds with Ritchie’s Phase 1 and uses the cremation deposits within the stoneholes of Stones 1, 7, 9 and 10 to date the foundation of the circle (Tables 1 & 2). These dates form a very tight group around 3000 cal BC. Cremation deposit IV (SUERC-24169) is published as forming a foundation deposit in Stonehole 2 but, as mentioned above, there is some doubt over the exact provenance of this sample and, as also noted above, Stone 2 had collapsed. Certainly the date suggests that it is more in keeping with the pre-cairn cist burial phase. Given this doubt, this sample has not been included in the model (illus 2; Table 3).

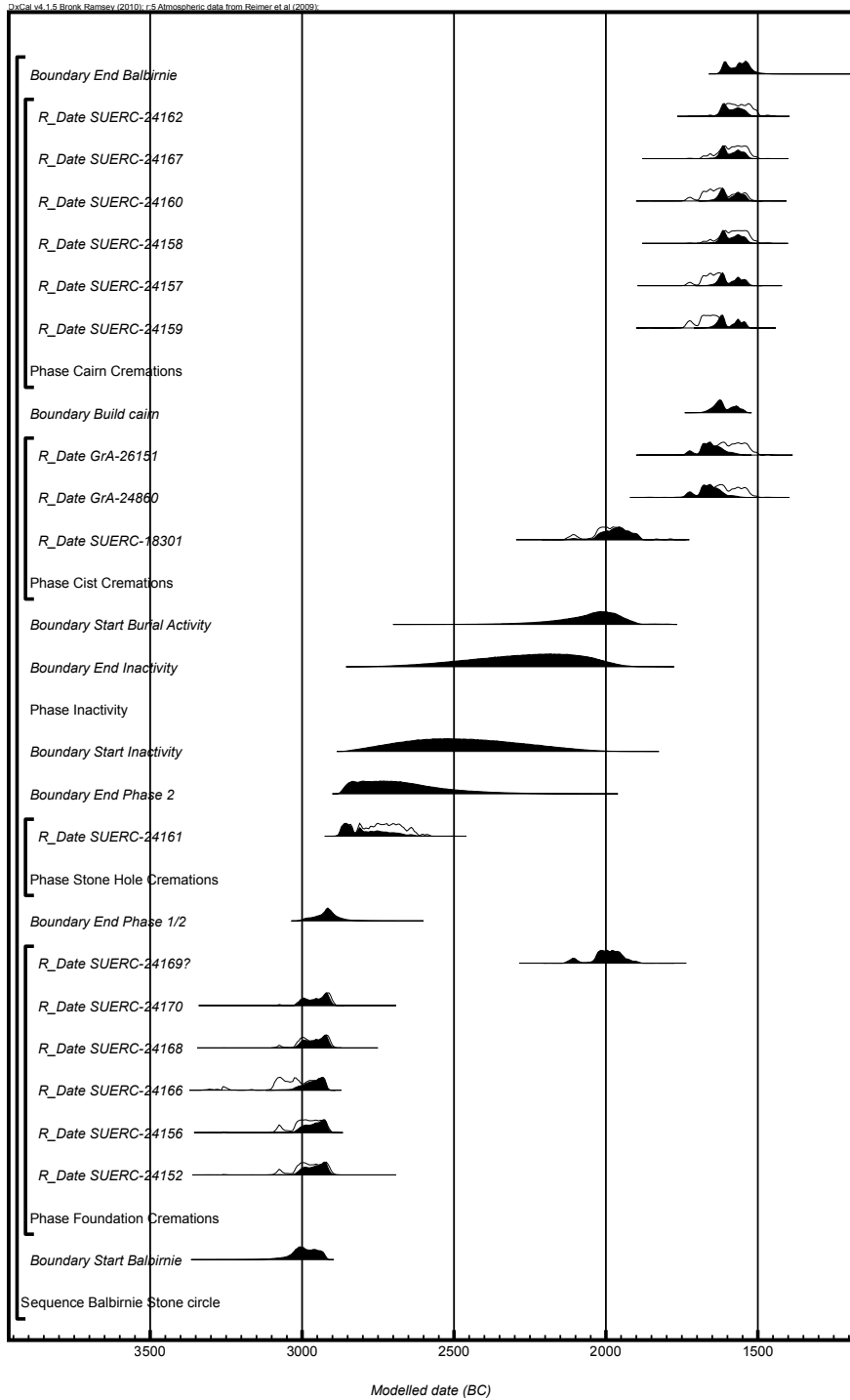
The radiocarbon date for the earth fill of the rectangular structure must be regarded at best as a *terminus ante quem* for the paved area but this date is also untrustworthy. Ashmore et al (2000: 45) have suggested that these early dates should have their margins of error tripled and indeed questions of accuracy have been raised elsewhere regarding the basic

TABLE 3
Calibrated radiocarbon data for Ballbirnie using Intcal09 (Reimer et al 2009)

<i>Context</i>	<i>Lab No</i>	<i>Date (BP)</i>	$\delta^{13}C$ (‰)	<i>Date cal BC (68.2%) Modelled data</i>	<i>Date cal BC (95.4%) Modelled data</i>
<i>Phase 1 – foundation deposits</i>					
Crem III (beneath Stone 1)	SUERC-24152	4355 ± 35	-26.8	3009–2977 (24.2%) 2972–2914 (44.0%)	3083–3065 (3.4%) 3030–2898 (92.0%)
Crem III (beneath Stone 1)	SUERC-24156	4370 ± 30	-25.9	3006–2923 (68.2%)	3085–3061 (5.1%) 3031–2907 (90.3%)
Crem VIII (Stonehole Stone 10)	SUERC-24166	4405 ± 30	-26.9	3077–3068 (4.3%) 3034–3003 (18.8%) 2995–2927 (45.2%)	3091–2921 (95.4%)
Crem V (Stonehole Stone 7)	SUERC-24168	4345 ± 30	-19.7	3010–2978 (26.0%) 2961–2908 (42.2%)	3025–2897 (95.4%)
Crem IV (?beneath Stone 2?)	SUERC-24169	3630 ± 30	-25.1	2031–1949 (68.2%)	2127–2090 (9.0%) 2045–1904 (86.4%)
Crem VI (Stonehole Stone 9)	SUERC-24170	4330 ± 30	-20.7	3009–2981 (21.1%) 2939–2898 (47.1%)	3017–2895 (95.4%)
Stone setting (Soil over)	GaK-3426	2840 ± 80		1374–1336 (3.6%) 1323–800 (64.6%)	1606–1574 (0.8%) 1561–1548 (0.3%) 1537–410 (94.3%)
<i>Phase 2 – secondary stonehole cremation</i>					
Crem VII (W end of Stone 9)	SUERC-24161	4150 ± 30	-22.2	2868–2837 (14.2%) 2816–2803 (5.5%) 2777–2670 (48.5%)	2876–2627 (95.4%)
<i>Phase 3 – no visible archaeological activity</i>					
<i>Phase 4 – Pre-cairn cist burials</i>					
Crem I (Cist 2)	SUERC-18301	3625 ± 35		2031–1940 (68.2%)	2129–2088 (9.3%) 2048–1892 (86.1%)

TABLE 3 (continued)

<i>Context</i>	<i>Lab No</i>	<i>Date (BP)</i>	$\delta^{13}C_{org}$	<i>Date cal BC (68.2%) Modelled data</i>	<i>Date cal BC (95.4%) Modelled data</i>
<i>Phase 4 – pre-cairn cist burials</i>					
Crem II (Cist 3 – food vessel and flint knife)	GrA-24860	3335 ± 40		1731–1718 (10.0%) 1692–1646 (58.2%)	1742–1624 (95.4%)
Crem II (ditto)	GrA-26151	3320 ± 40		1728–1721 (5.2%) 1691–1644 (63.0%)	1741–1618 (95.4%)
Beaker (carbonised planking)	GaK-3425	3280 ± 90		1937–1261 (66.9%) 1235–1216 (1.3%)	2288–1904 (95.4%)
<i>Phase 5 – construction and use of cairn: cremations from cairn material</i>					
XV	SUERC-24167	3310 ± 30	-23.3	1621–1540 (68.2%)	1661–1519 (95.4%)
XVIII	SUERC-24157	3345 ± 30	-24.3	1662–1606 (54.0%) 1574–1558 (10.0%) 1549–1541 (4.2%)	1676–1532 (95.4%)
XVIII	SUERC-24158	3305 ± 30	-27.1	1618–1543 (68.2%)	1659–1650 (1.7%) 1644–1515 (93.7%)
XII	SUERC-24159	3365 ± 30	-23.9	1667–1611 (68.2%)	1684–1603 (77.1%) 1590–1534 (18.3%)
XVII	SUERC-24160	3340 ± 30	-25.7	1656–1605 (45.0%) 1580–1557 (15.9%) 1552–1540 (7.3%)	1673–1528 (95.4%)
XVI	SUERC-24162	3285 ± 30	-28.2	1610–1544 (60.2%) 1539–1529 (8.0%)	1628–1501 (95.4%)



ILLUS 2 Radiocarbon dates from Balbirnie calibrated using OxCal 4.1 (Bronk Ramsey 2010).
 Dates followed by a '?' have been excluded from the model

reliability of radiocarbon dates obtained at the Gakusan laboratory (Spriggs & Anderson 1993). As this date (GaK-3426) is also clearly later than the rest of the dates in this phase and, when adjusted, has such a large calibrated date range, this too has been excluded from the model.

Phase 1, then, sees the building of the stone circle probably in the 31st to 29th centuries cal BC associated with foundation deposits of cremated human remains and possibly with Grooved Ware pottery which now can be regarded as primary rather than residual: the circle now fits better with the currency of Grooved Ware than it did when originally considered to be a millennium later. The rectangular stone setting may also belong to this phase as it does seem integral to the overall circle design but it remains undated by radiocarbon.

PHASE 2

This period of activity is represented by the secondary deposit of human remains high in the fill of the Stonehole 9 (VII). It now seems that this deposit was made soon after the construction of the stone circle and in particular, seems to have been deposited in the 29th–27th centuries cal BC (SUERC-24161). This seems to be broadly analogous to the similar cremation/standing stone arrangement at Orwell near Milnathort (Perth and Kinross) where a date of 4130 ± 35 BP (SUERC-18309) was obtained from the deposit of cremated bone at the top of the stonehole (Ritchie 1974: 8–9; Sheridan 2008: 201).

PHASE 3

This phase is labelled ‘inactivity’ in the model (illus 2). In reality, it is a period of presumed use but during which the associated ritual activity has left no visible archaeological trace. This

prolonged period lasted some 600–700 years, possibly from the 28th to the 22nd or 21st centuries cal BC. It is difficult to envisage that the site was completely abandoned when so much was happening elsewhere in the Balfarg/Balbirnie area (see below) but certainly there is nothing detectable at Balbirnie until sepulchro-ritual activity recommences just before the beginning of the 2nd millennium cal BC.

PHASE 4

This phase marks the conversion of the site into an Early Bronze Age cemetery featuring interment in cists. The dates from the cremation deposits (I and II) in Cists 2 and 3 must stratigraphically represent a pre-cairn phase as no excavation through the cairn material was noted. The date from Cist 2 (SUERC-18301) is considerably earlier than the two dates from Cist 3 (GrA-24860 & GrA-26151) which are in statistical agreement. It has already been noted that the late date for Cist 3 is particularly late for Scottish Food Vessels (Sheridan 2004b: 249) and in this context Alison Sheridan had discussed the stratigraphy of the sample with Graham Ritchie (Alison Sheridan pers comm). Ritchie argued that the bone is unlikely to represent a secondary deposit in the cist as this had been securely sealed with a massive capstone. It may be that, in keeping with other Early Bronze Age graves elsewhere, the Beaker may already have been old when deposited (Woodward 2002) but there is also increasing evidence for the post-mortem manipulation of human remains in the Bronze Age (Gibson 2007) and it must remain a possibility that the cist had been revisited at, or just before the construction of the cairn. This would also tally with the evidence for the disturbance noted at Cists 1 and 4. If we follow the ring-cairn hypothesis suggested above, and noted below at Balfarg

Riding School, then the central area may have been open for a considerable time before the infilling phase. For the present, this quandary must remain unresolved. The date obtained from cremation deposit IV (SUERC-24169) also fits into this phase, albeit at its beginning. Published as forming a foundation deposit in Stonehole 2, the doubts surrounding the exact provenance of this deposit have already been outlined. It may well be that this deposit was placed during Phase 4 however it would be dangerous to read too much into this given the uncertainties surrounding the sample.

The end of Phase 4 is more difficult to define. The dates from Cist 3 (cremation deposit II) date to the 18th–17th centuries cal BC and are indistinguishable from the dates for the cremation deposits located within the cairn; it may be worth noting that Ritchie records cremation deposit II as coming from the outside packing as well as from the interior of the cist. The date from the Beaker (GaK-3425) is broadly contemporary but, in view of the doubts over early GaK dates expressed above, it is considered safer not to include it in the model.

Phase 4, then, still relies largely on stratigraphy for its definition and starts around the end of the 21st century and, with the uncertainty over the Cist 3 dates in mind, lasts until the end of the 17th century cal BC.

PHASE 5

The closeness of the radiocarbon dates suggest that this phase rapidly followed the former and its identification as a separate phase is purely based on the logical building event of the cairn itself. It sees the disturbance of the Phase 4 cemetery, the building and use of the cairn and the continued deposition of cremated human remains within and over the cairn, some evidently having originally been in cinerary urns (Tables 1–3). The cairn was

probably built between 1667 and 1542 cal BC (95.4%). The dates for this phase (from deposits XII, XVI, XVII and XVIII) also form a tight group and seem to have started soon after Phase 4. The dates are clearly later than that from Cist 2 but overlap considerably with those from Cist 3. The remains seem to have been deposited in the 17th to 16th centuries cal BC and therefore the cairn phase seems to represent a short period of activity, sealing and therefore perhaps closing the site (illus 2). The spread of cremated remains through the mound as noted by Ritchie, however, suggests that some manipulation of the deposits was still taking place, spreading what may have at one time been discrete urned and bagged deposits. The stone circle at Balbirnie, therefore, can be shown to have been in use for in the region of one and a half millennia.

DISCUSSION

Balbirnie, of course, is not a site in isolation but rather forms a component (or more correctly a series of components) within the larger Balfarg/Balbirnie landscape (see Barclay & Russell White 1993: fig 4 for a map of the site). In the one-and-a-half millennia during which Balbirnie was constructed, used, modified and closed, other sequences were taking place at various locales within the immediate landscape. Now that we have almost as many radiocarbon dates from Balbirnie as from the rest of the monuments combined, it seems appropriate to review the sequence at this important ritual complex. In an attempt to understand this activity a brief summary of the sequences at Balfarg Riding School and at the Balfarg Henge is necessary.

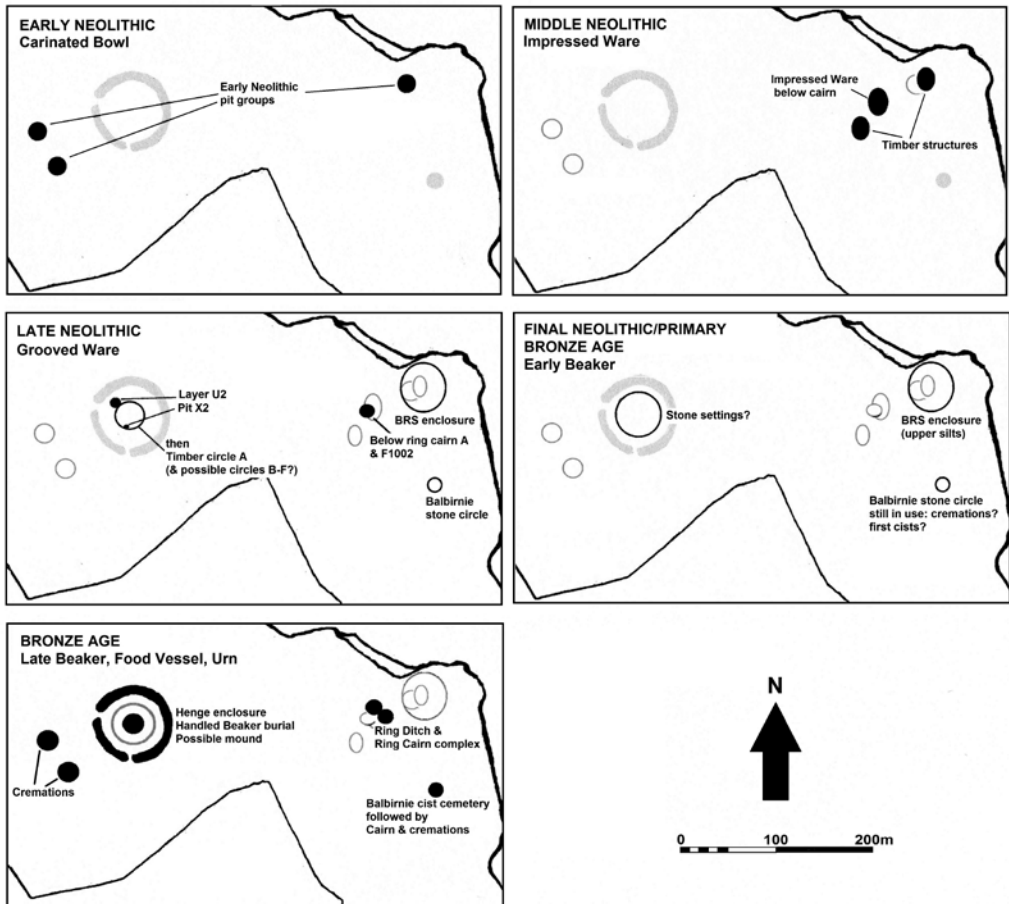
The archaeological sequence at Balfarg Riding School (hereafter BRS) has been very clearly set out by Barclay & Russell-White (1993). The sequence at the Balfarg Henge

(hereafter the Henge) is less well understood largely because of the lack of stratigraphic relationships between the severely plough-truncated features and the lack of datable material from the various structural elements of the site (Mercer 1981).

The earliest activity so far recognised in the Balfarg complex comprises earlier Neolithic pits from BRS areas A and C (illus 3). These are associated with Carinated Bowl (Cowie's Group 1) and Plain Bowl (Group 2) Pottery (Cowie in Barclay & Russell-White

1993: 65–76). These assemblages comprise what would now be called 'traditional' and 'modified CB' pottery (Sheridan 2007a) and the radiocarbon dates that they have produced place this activity at BRS to the 37th–34th centuries cal BC (with an outlier spanning the 43rd to 38th centuries cal BC (GU-2604)).

Impressed Ware pottery was found below ring cairn A at BRS (illus 3). The BRS timber structures might also belong to the end of this phase given the appearance of Grooved Ware late in their histories (see below). In England



ILLUS 3 Suggested phases at Balfarg/Balbirnie. Balfarg Henge and Balbirnie stone circle are in grey throughout for reference purposes and become black when they are in use

and Wales, Impressed Ware may have been in use from as early as the 36th century cal BC (Gibson & Kinnes 1997) and this would seem to be the same in Scotland (MacSween 2007: fig 33.4). (The present writer prefers to use 'Impressed Ware' rather than 'Peterborough Ware' as the latter is largely confined to England and Wales, whilst 'Impressed Ware' covers the clearly related yet individual styles found in Scotland and Ireland.) The end of the tradition in southern Britain was much more difficult to determine (Gibson & Kinnes 1997) but it appeared to have been almost certainly still in currency in the first quarter of the early second millennium BC. In Southern Britain, then, Impressed Ware appears earlier than Grooved Ware but there then would seem to have been a period of contemporaneous use. In Scotland, of course, Grooved Ware appears rather earlier than it does in England and Wales and so Grooved and Impressed Wares may have had an even greater degree of concurrency in the North. However, many of the dates for Scottish Impressed Ware are, unfortunately, problematical. Those from Grandtully, Perthshire (Simpson & Coles 1990) are once again early GaK dates and must be regarded as unreliable. Those from Meldon Bridge, Peeblesshire (Speak & Burgess 1999) have such large margins of error (when adjusted) that they span the 4th and earlier half of the 3rd millennia cal BC. The dates for the Impressed Ware from Kinbeachie, Highland would indicate a date in the second half of the 4th millennium cal BC (Barclay et al 2001). Unfortunately, there is a plateau in the calibration curve in the later 4th millennium, but nevertheless the date from Bubton Farm, Brechin suggests that Scottish Impressed Ware is current by the 36th century cal BC (MacSween 2007) whilst the dates from the Upper Forth Crossing, Clackmannanshire, together with the Kinbeachie dates already cited, firmly anchor the tradition in the second

half of the 4th millennium (MacSween 2007; Alison Sheridan pers comm). It is only the dates from Meldon Bridge with their wide margins of error (as adjusted) that push Scottish Impressed Ware later than the 31st century cal BC.

Work in progress by Peter Marshall (pers comm), using Bayesian modelling of the radiocarbon dates, suggests that it is difficult to extend Impressed Ware beyond the 30th century cal BC in either Scotland or England and Wales. This means that there would now appear to be far less overlap between the currency of Impressed Wares and Grooved Wares than previously thought and allows us, by analogy, to be rather more certain about the place of the BRS Impressed Ware in the site sequence. Despite lacking radiocarbon dates of its own, the Impressed Ware activity at Balfarg must now be placed in the second half of the 4th millennium BC: it is clearly stratigraphically earlier than the BRS ring cairns and Cowie noted that some of the material showed considerable signs of abrasion suggesting that it may have been redeposited (Cowie in Barclay & Russell-White 1993: 122). Using the unfortunately rather imprecise dates so far available from Scotland (and unavailable to Barclay & Russell-White), the second identifiable phase of activity at BRS is almost certainly Impressed Ware-related rather than Grooved Ware-associated as previously postulated. Barclay and Russell-White seem to have been uncertain as to the place of this Impressed Ware in their sequence and it does not appear in their chronological chart (1993: illus 2). Unfortunately the full nature of the activities taking place within the Impressed Ware phase remains elusive.

Grooved Ware is much more widely spread within the complex than its preceding ceramic traditions and is represented at BRS, the Henge and Balbirnie (illus 3). The two rectilinear timber structures in BRS Area C

and a number of pits within the BRS enclosure were associated with Grooved Ware and were only some 100m north of Balbirnie's original location. Indeed the multiple incisions on the Balbirnie Grooved Ware (Ritchie 1974: fig 4, no 29) find parallel at BRS (Barclay & Russell-White 1993: 41,42, illus 27). In his review of Scottish Grooved Ware dates, Ashmore (1998: 145) commented that although the dates for Barnhouse and Skara Brae 1 could start as early as 3400 cal BC, they were more likely to start from the 31st century cal BC. It is also to this period that the earliest Grooved Ware in the North of England can be dated (Manby 1999) and dates from Sewerby Cottage Farm, Bridlington, East Yorkshire place the Grooved Ware in the first half of the 3rd millennium cal BC (Fenton-Thomas 2009: 294–301). Southern English Grooved Ware may start about a century later (Garwood 1999). Grooved Ware continues to be current at the time of early Beakers with two dates from Milfield North, Pit 1 ranging between 2620–2340 cal BC (Passmore & Waddington 2009: 200–1) and some late residue dates from Littleour, Perth & Kinross perhaps extending to the end of the 3rd millennium (quoted in MacSween 2007: 374). Generally, however, it is difficult to suggest that Grooved Ware continues in currency beyond the 23rd century cal BC.

Grooved Ware appears late in the history of the BRS timber structures which most likely belong to the Impressed Ware phase (see above) (Barclay & Russell-White 1993: 177). The Grooved Ware may originate from a ploughed-out mound once associated with the BRS enclosure (Barclay 2005: 89) and therefore the timber structures were probably in use before Grooved Ware appeared at the site. The excavators regarded the charcoal from which the dates for Structure 2 were obtained to have been intrusive and therefore regarded as a *terminus ante quem* for the structure. Grooved Ware also came from the middle silts

of the BRS enclosure, from below Ring Cairn A and from Pit F1002 (illus 3). At the Henge, it was principally found in a layer (U2) to the NW of Timber Circle A, in the postholes of the western arc of Circle A and with Feature X2 – a pit exhibiting evidence for in situ burning (Mercer 1981: 97, figs 24 & 25). The Grooved Ware in the postholes of timber circle A is likely to derive broadly from the earlier activity in layer U2 and/or around feature X2. Unfortunately the radiocarbon dates for Circle A are mainly derived from charcoals in the packing of Posts A11 and A13. This charcoal included oak, a long-lived species that may produce an 'old wood effect' unless sapwood is specifically identified. Furthermore, this charcoal may also have been derived from residual material. Conscious of this possibility, Mercer commented on the fresh appearance of the charcoal and therefore suggested that it was relatively unweathered at the time of its deposition. The dates obtained, however, span the 31st–25th centuries cal BC (GU-1160–2) with an outlier spanning the 18th–15th centuries cal BC (GU-1163). This does indeed suggest that some mixing has taken place. If one excludes the oak-generated dates, those derived from alder (GU-1160 & 1161) provide a date range in the 29th–25th centuries cal BC. These dates must be regarded as *termini post quem* for the construction of Circle A having been incorporated into the backfill of the postholes. Given Mercer's original observations noted above, the gap between the death of the wood and the construction of the timber circle need not have been a great one. The dating of the other concentric possible timber rings (Circles B–F) must remain unresolved. The absence of Grooved Ware from the Henge ditch may be noted here and is an observation to which we shall return.

It is to the beginning of this Grooved Ware-associated phase of activity that the stone circle at Balbirnie must now be

attributed with its radiocarbon dates forming a tight cluster around the end of the 4th and start of the 3rd millennium BC (illus 2 and 3). Loosely associated with Grooved Ware from the packing of Stonehole 10 (and other possible Grooved Ware sherds from the cairn material identified amongst the 'Urn' sherds by Henshall in Mercer 1981: 132–3), this building phase at Balbirnie is also associated with pyro-ritual activity in the form of the deposits of cremated human bone in Stoneholes 1, 2, 9 & 10 and recalls the Grooved Ware-associated burning in the area of Structure 2 at BRS, in the middle fills of the BRS enclosure ditch, and in Feature X2 at the Henge. The fragments of calcined bone from Postholes A6, A11 and A7 from Timber Circle A within the confines of the Henge must also be considered in this connection. These calcined bone fragments, however, are likely to be animal, in contrast to the human bone at Balbirnie (Harman in Mercer 1981: 139). If correct, this suggests that there may have been differences in ritual at different points of the complex and, given the imprecision of radiocarbon dating, at slightly different times. At Balbirnie, the secondary deposit in Stonehole 9 dated to the 29th–27th centuries cal BC may also be part of this widespread pyro-ritual activity.

Where stratified, early Beaker (ie pre-2000 cal BC) pottery largely came from the upper fills of the BRS enclosure ditch (illus 3) and at the Henge the later handled Beaker was found in the near-central pit-grave. The Beaker from Balbirnie is fragmentary and, although probably originally associated with a burial, had been disturbed. As noted by Cowie and Barclay (in Barclay & Russell-White 1983: 135 & 197) the BRS Beaker is predominantly cord-decorated (both AOC and zoned) whilst the Balfarg and Balbirnie vessels are both late forms in traditional Beaker chronologies. In his report on the assemblage, Cowie (wisely)

declined to give a specific date for the BRS vessels, seeing them as long-lived types (Cowie in Barclay & Russell-White 1993: 135). However, given the larger corpus of radiocarbon dates now available for Scotland and elsewhere, the largely mid- and high-carinated forms within the BRS assemblage might place these vessels in Needham's Period 2 (post fission horizon) between *c* 2250–2050 cal BC (Needham 2005). The handled Beaker from the Henge was dated in 2004 to the 21st–20th centuries cal BC (2023–1916 cal BC at 1 sigma; Sheridan 2007b) and therefore may be considered later (though not necessarily by much) than the BRS assemblage.

Early Bronze Age activity, possibly starting at a time broadly contemporary with the Balfarg handled Beaker, is represented in the complex by Food Vessel burials (BRS Cairn B, Balbirnie Cist 3) and cist burials (illus 3). The dates from Balbirnie suggest that this seems to have taken place between the 21st and 17th centuries cal BC. The disc-bead necklace from BRS is also noteworthy at this point given its similarity with the beads found in the cairn material at Balbirnie and also broadly associated with the Balbirnie Beaker.

Finally, Bronze Age activity is further represented by a series of cremation deposits associated with bucket urns in BRS area A, Cooking Pit F3001 at BRS datable to the 17th–14th centuries cal BC and the cremation deposits within the cairn at Balbirnie datable to the 17th and 16th centuries cal BC. The Scottish Cordoned Urn series, with which at least some of the Balbirnie cairn cremation deposits originally must have been associated, can now be dated from the 19th–15th centuries BC (Sheridan 2007c) whilst the Scottish Bucket Urn series, associated with the BRS cremation deposits, has a broad date range spanning the 16th to the 8th centuries BC (ibid: 170–1).

Two major monumental elements are missing from this briefest of overviews

which does not do justice to the complexities of chronologies or argument expressed by Barclay, Russell-White and Mercer in their original and seminal reports already cited. Those elements are the Balfarg stone circle(s) or settings (including the portal stone) and the Henge itself. With regard to the stone settings, once again it is imperative to point out Mercer's recognition of the limitations of the data when he states that 'the evidence for the existence of stone settings at Balfarg is, in the writer's opinion, so poor that he feels it to be unlikely that the presence of stone settings on the site would have been put forward at all had the surviving stones not existed' (1981: 160). Nevertheless, Mercer identified two arcs of possible stoneholes with distinctive packing-stone fills, an outer arc near the inner lip of the ditch (S'1–S'6) which, if forming a circle rather than a setting, might have originally comprised 24 stones, and an inner arc or circle with an estimated diameter of *c* 50m, possibly originally comprising 12 stones of which only one still survived (S1–S5) (illus 4). It is also worth considering the possibility that this was a single irregular circle or oval, perhaps like that at Cairnpapple (Piggott 1948) or Arbor Low (Barnatt 1978). There is no dating evidence from any of the stoneholes and the only relative dating comes from the fact that S'3 of the outer stone setting cuts one of the postholes of the outermost timber circle/Outer Palisade F. Mercer concluded that the stone settings therefore post-date those of timber. There is no reason to doubt this interpretation and it is certainly a recurring pattern at other timber circles (Gibson 2004; 2005: 53–5) notwithstanding the reinterpretation of Croft Moraig (Bradley & Sheridan 2005) where the placing of the timber circle within the revised sequence is by no means unequivocal and where the timber monument concerned is somewhat different in form to the apparently free-standing circles of posts that normally

constitute timber circles of the later Neolithic and Earlier Bronze Age. Indeed, the present writer thinks that the primacy of the timber circle over the stone circle at Croft Moraig is still the preferred sequence (contra Bradley & Sheridan 2005). In Piggott & Simpsons' plan (1971: Plate 1A), Stone 4 of the circle does not quite encroach upon but is extremely close to the edge of the northern trench of the porch of the timber circle. It is difficult to see how timber uprights could have stood in the trench when the stone was *in situ*. However, it is conceded that the stratigraphy is not clear cut and it is undeniable that there was a considerable period when circles of timber, stone and earth were in contemporary use.

If we accept the *terminus post quem* dates for Circle A at Balfarg, then the stone settings may have been constructed sometime after the 29th–25th centuries cal BC. Even if at the beginning of this date range, it suggests that the stone settings at Balfarg were later than the Balbirnie stone circle and that whilst the Balbirnie stone circle was being constructed, Grooved Ware-associated pyro-ritual activity was taking place elsewhere in the complex: post-dating the rectilinear timber structures at BRS and pre-dating the circular timber structures at the Henge. It is clear that the stones from the Henge settings had been removed from the site leaving only two of the originals *in situ*. It would have been tempting to consider that they might have been removed to and reused at Balbirnie but the radiocarbon dates now deny this hypothesis. We are left to conclude that the circle at Balbirnie possibly survived due to its modern woodland setting in private parkland whereas the stones of Balfarg were within an arable environment and were consequently both a nuisance to the plough and more easily accessible for removal and transportation. One wonders whether Balfarg is the origin of the medieval 'Bull Stone' on The Green in nearby Leslie (RCAHMS 1933:

189–90, no 395). It is also possible that the stone circle was dismantled at the time of the construction of the Henge enclosure as appears to have been the case at Cairnpapple Hill in West Lothian but this is considered less likely since it begs the question as to why only two stones were left in situ.

The last remaining monumental presence not yet considered at Balfarg is the Henge itself. Once again there were no stratigraphical relationships between the Henge ditch and the internal features: the possibility that some of the sockets of the outer stone setting had been destroyed by the Henge ditch is attributed to the weathering of the ditch rather than the cutting of it. The Henge is clearly not the primary event on the site. Mercer's 'Event 0' relates to the pyro-technic activity already discussed. The Henge is then attributed to the later 'Event 1' contemporary with the timber circle(s) and a cluster of burnt postholes near the centre of the monument. However, Mercer is clear in pointing out that the place of the Henge within the sequence is uncertain. 'Event 2' is marked by the stone settings and 'Event 3' by the Beaker burial.

Given the recent work at henge monuments elsewhere one might now propose moving the Henge to Mercer's 'Event 3'. Work by Richard Bradley at Broomend of Crichie, Aberdeenshire (small, oval Class II; Bradley & Clarke 2007) and by the present writer at Dyffryn Lane in Powys (circular Class I; Gibson 2010) has demonstrated that the henge element of the site post-dates the stone circle. Radiocarbon dating of cremation A *below* the bank at North Mains, Perthshire (oval Class II) has demonstrated that the henge was constructed *after* the 23rd–20th centuries cal BC. This demonstrates that the construction of the henge is more chronologically related to the internal Early Bronze Age burials (Burial B: 2150–1500 cal BC; Burial F with Beaker/Food Vessel hybrid: 2150–1940 cal BC) than

with the internal timber circle (Barclay 2005: 86–8). The Beaker pottery from the basal silts at Arminghall, Norfolk (circular Class I) might also be recalled in this context (Clark 1936). The Dyffryn Lane stone circle has *terminus ante quem* radiocarbon dates suggesting that it was constructed in the 29th–28th centuries cal BC and was probably in a state of disrepair by the 27th or 26th century cal BC. The enclosing Class I henge monument has *terminus post quem* dates of 2580–2460 cal BC (Gibson 2010). Recent work at the large Wessex henge enclosure at Durrington Walls, Wiltshire is clearly showing that the bank and ditch were constructed after the timber circles and Grooved Ware occupation at the site (Parker Pearson 2007) and indeed Beaker pottery is reported to have been found below the bank in earlier investigations (Farrer 1918). Bradley & Clarke (2007) have demonstrated that the stone circle and henge at Broomend of Crichie are on different alignments. This can also be demonstrated at Arbor Low, Derbyshire (oval Class II; Gray 1903, Thompson 1963, Barnatt 1978: fig 17) where both axes of the stone circle (NW/SE and NE/SW) are clearly different to that of the earthwork (NNW/SSE). At Balfarg, the entrance porch of Circle A (if such it is) is also to the south of the Henge's north-eastern entrance (Mercer et al 1988: fig 3) demonstrating a different alignment and therefore suggesting a different phase of construction. This is also the case at Cairnpapple Hill (Piggott 1950) where the entrance to the inner setting of uprights is slightly to the east of the southern henge entrance. Piggott originally interpreted this oval as the sockets for stone orthostats but the sockets were re-interpreted as representing a timber circle by Mercer (1981: 155). Mercer's hypothesis was followed by others (*inter alia* Barclay 1999; Gibson 1994, 2005; Noble 2006) but Piggott's original conclusions have refound favour with Richard Bradley and

Alison Sheridan for exactly the same reasons that Piggott himself considered, namely that the number of sockets coincides with the number of large stones forming the later kerb cairn and cist covers (Alison Sheridan pers comm). This can be further supported by the recent reinterpretations of the Aubrey Holes at Stonehenge (Catling 2009).

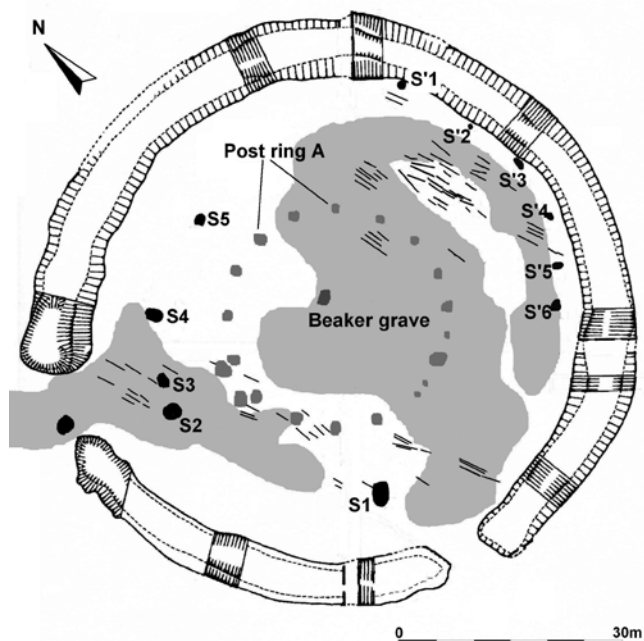
It has been suggested here and elsewhere (Gibson 2004, 2008, 2010) that henges may be later than the Grooved Ware-associated later Neolithic that is generally assumed (inter alia Russell 2002; Harding 2003). The majority of early 3rd millennium dates come from the primary silts of the ditches and the risk of residuality is therefore high. Rather than the traditional view that henges represent the primary monument that later receives embellishment (Burl 2000: 33; Russell 2002: 123), henges may in fact be the last monumental element serving to close and contain an area that has been ritually significant for often a considerable time. It has also been suggested that this might account for the internal ditches of henges (Gibson 2010). If one is to enclose an already important site with a bank and ditch, it is logical to dig the ditch around the area to be enclosed. Dumping of the resulting spoil on the *inside* would encroach on this 'sacred space' and further encroachment would ensue from the settling of the bank. Were the bank to be thrown to the *outside* then no such compromise of space would result. This hypothesis certainly fits the observable pattern at the Balfarg Henge where the outer stone setting and outermost timber circle were situated very close to the inner edge of the ditch. The ditch has tightly respected these features and only its weathering has encroached upon them: an observation that may also be made at Arbor Low (Gray 1903).

Analogy has been drawn above with the sequence at Dyffryn Lane, Powys (Gibson 2010). This site comprised a sequence of

Impressed Ware pits, stone circle and henge after which the interior was covered by a low turf mound below which was a central pit. Unfortunately, the terms of the Scheduled Monument Consent did not permit the excavation of this partially exposed feature, but it is very likely that it was a central grave. Despite the lack of evidence in the small area excavated for a timber element at Dyffryn Lane, the sequence is remarkably similar to that envisaged for Balfarg and it remains a possibility that there was also a central mound here too. This possibility was originally considered by Mercer in his discussion of the Beaker pit grave (1981: 79) but due to the massive plough-erosion, Mercer concluded that any mound had 'certainly been totally destroyed'. Nevertheless, later in the report Fig 37 shows the distribution of modern ploughmarks which are notably absent in the central area and Fig 38 shows the distribution of subsoil stone which shows a remarkable increase in density in the same area (illus 4). This density also has a 'halo' of stone particularly in the east, south and west quadrants which Mercer relates to the timber circles (1981: 108). It may be that these two combined distributions represent the 'ghost' of a mound. Even if this tentative hypothesis is valid, the earthwork cannot be directly related to the Henge construction but may have been a slightly later feature, possibly associated with the burial with the handled Beaker. This, as originally suggested by Mercer, does not seem to be beyond the realms of probability.

In the present writer's view, the revised sequence at the Balfarg Henge may be suggested as follows:

- Event 1 An undefined period of Grooved Ware-associated pyro-ritual activity taking place in the area of Layer U2 and broadly datable to the end of the 3rd millennium.



ILLUS 4 Balfarg Henge diagrammatically showing the main concentration of stone (light grey) and plough marks. The absence of plough marks in the central area suggests the possibility of a former mound. The stone settings S and S', the timber ring A and the central grave are shown for reference purposes but probably all pre-date any mound (after Mercer 1981: figs 37, 38, 40 and Mercer et al 1988: illus 3)

- Event 2 At least one timber circle with a *terminus post quem* in the 29th–25th centuries cal BC.
- Event 3 Replacement of the timber circle with stone circles/settings *possibly* in the second quarter and almost certainly by the middle of the 3rd millennium BC.
- Event 4 Construction of the Henge to enclose the stone settings towards the end of the 2nd half of the third millennium. It is possible that this may be contemporary with the burial associated with the handled Beaker and flint knife in Feature XI. If this contemporaneity is assumed by analogy with the North Mains sequence, then this is likely

to date to the 21st–19th centuries BC.

- Event 5? Possible construction of a barrow over the central area. If this was the case, then this phase may be associated with the near-central Beaker burial at the turn of the 2nd millennium.

It must be stressed that Mercer's observations on the limitations of the stratigraphy and the agricultural damage at the site are fully acknowledged by the present writer. It must also be admitted that the revised sequence suggested here is not based on any stratigraphic revelations that have come to light since Mercer's work and the stratigraphy lacking to Mercer is equally lacking to the present writer. However as archaeologists,

we constantly rely on analogy and parallels within similar sites and sequences elsewhere and it is recent analogous work that allows an alternative hypothesis to be proposed. More work is clearly needed on the issue of the dating of henge monuments and a review of the evidence is currently underway however a pattern is emerging regarding their late positions within site sequences: a pattern into which Balfarg could sit very well.

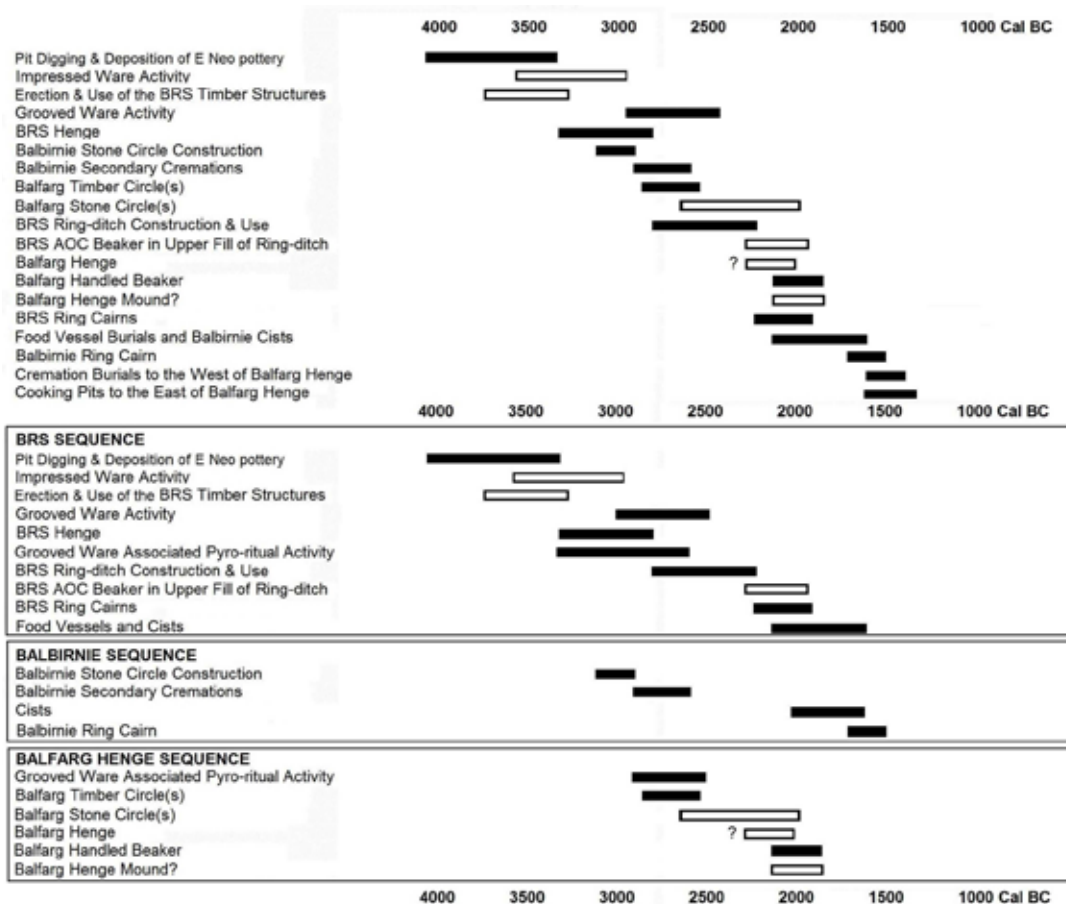
CONCLUSIONS

We can therefore advance a sequence for the Balfarg/Balbirnie complex slightly differing in detail from that proposed by previous scholars (illus 5). The main divergences from the earlier scheme are clearly in the dating of Balbirnie, the proposed revised sequence for the Balfarg Henge and the addition of an Impressed Ware phase. The longevity of the activities performed at the ceremonial centre is unaffected by the present work.

We can now demonstrate that the Grooved Ware activity 'on the site of the Balbirnie stone circle' at *c* 3000–2500 cal BC suggested by Barclay & Russell-White is now associated with the actual construction of the stone circle and dates somewhat earlier to the 31st–29th centuries cal BC. The construction of the Balbirnie stone circle is now unlikely to be contemporary with the stone constructions at the Henge but rather it is here proposed that Balbirnie pre-dates the Balfarg circles by at least a century and probably by as much as half a millennium. The construction of the Henge is not specifically dated by Barclay & Russell-White but rather is mentioned in conjunction with the 'timber phase' implying that it was envisaged that the timber circle(s) and Henge enclosure formed a single entity. Analogy with comparable and better dated sites as well as a re-assessment of the integrity of the Henge

radiocarbon dates suggests that this is unlikely to be the case. Specific analogy with sites such as North Mains and even the multiple timber ovals at Woodhenge, Wiltshire, suggests that the Balfarg timber circle stood as a discrete freestanding monument (Gibson 2004, 2005: 66; Barclay 2005).

The dating of the AOC Beaker from the upper fills of the BRS enclosure ditch may now, following the work of Needham (2005), be refined to the 23rd–21st centuries cal BC, starting slightly later than previously envisaged, and slightly pre-dating the handled variant from Balfarg (21st–20th centuries cal BC). The disturbed late Beaker from Balbirnie may be broadly contemporary with its handled relative. It is probably also to this period, or slightly before, that the Henge earthwork belongs, its bank and ditch formally constructed to enclose symbolically an area of ritual focus that already possessed a powerful and venerable biography. Balbirnie was treated and 'closed' in a slightly different way. Whereas at the Henge a process of development can be proposed culminating in an enclosure, at Balbirnie, the sequence seems to have been much simpler with far less visible activity. After the founding of the circle, little activity is detectable until the cist phase around *c* 2000 cal BC, once again broadly contemporary with the Beaker pit burial at Balfarg but extending into the second quarter of the 2nd millennium. The site is then 'closed' not by a bank and ditch but by the construction of the cairn associated with the deposition of yet more cremated human remains in the 17th–16th centuries cal BC. It might be argued that this closure was much more permanent than that of the Henge, there being entrances at the latter that still would have afforded access to the central place: at Balbirnie the interior was buried. This may yet have happened at Balfarg if the low central mound hypothesis is accepted.



ILLUS 5 Suggested chronology for the revised sequence for the Balfarg/Balbirnie complex. This illustration uses the same format as the scheme proposed by Barclay and Russell-White (1993: 47, fig 2) where the open blocks represent inferred date ranges and the solid blocks represent date ranges supported by radiocarbon dating

There are therefore common threads of ritual throughout the 3 millennia of activity at Balfarg:

- the deposition of ceramics (4th to late 2nd millennia)
- the construction of timber monuments (late 4th to mid-3rd millennia)
- the excavation of circular enclosures (later 4th to mid-3rd millennia)
- the construction of circular mounds (later 3rd to mid-2nd millennia)
- the pyro-ritual activity (3rd–1st millennia)
- the construction of orthostatic monuments (early 3rd to late 3rd millennia)
- the deposition of cremated human remains (early 3rd and late 3rd to mid-2nd millennia)
- and the deposition of artefact-associated human remains (final 3rd to early 2nd millennia).

Ever mindful of the vagaries of archaeological survival, these various elements seem to take place at different parts of the known complex

sometimes in association/sequence and at other times and/or locations more discretely (illus 3 above). The archaeological evidence suggests a varied tapestry of diverse though related and long-lived ritual activities in this rich and tantalising ceremonial complex. It also demonstrates how much is yet to be learned about the archaeology of this dynamic period.

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