

# The Recumbent Stone Circles of North-East Scotland

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*A recumbent stone circle consists of a circle of stones graded in height, the two tallest often in the SW quadrant flanking a prostrate block. Within the circle there is commonly a ring-cairn.*

## SUMMARY

a The recumbent stone circles (RSCs) of NE Scotland (fig 1) probably derived from the Clava cairns of Inverness which have many features in common with them. The recumbent stone is an Aberdonian innovation.

b Other features of RSCs appear to confirm this derivation.

c The primary area of settlement lies just to the east of Insch and southwards through the Correen-Bennachie Gap towards Alford.

d Analysis of apparently early features in the circles is independently confirmed by the archaeological finds that can be dated.

e Later forms of RSCs are found around the primary areas, particularly to the west and north. The latest stone circles in the region retain only a few of the 'classical' features associated with RSCs, and it is these forms that further south in Perthshire appear as 4-Posters and small six- or eight-stone circles.

f RSCs are a local development and show few signs of influence from more southerly sources.

g Present archaeological evidence does not reveal any RSC much earlier than 1800 BC or later than about 1400 BC.

## INTRODUCTION

Much of the data is derived from F R Coles (1900 to 1907 inclusive) whose detailed descriptions and plans of circles in NE Scotland remain the starting point for any new study. Some of his work was amplified by J Ritchie (1917-20 and 1923). Keiller (1934) published a short paper concerned mainly with RSCs in which he summarised his fieldwork but, regrettably, did not later enlarge this.

Early excavations by Dalrymple and others were described by Stuart (1867). More recent investigations have been by Childe (1934) and Kilbride-Jones (1935; 1936). The only other work in depth on RSCs is by Henshall (1963, 32-39; 1972, 273-76) in which she has discussed possible origins and dates.

The present paper is based on an examination of seventy-four certain RSCs (Appendix A)

and eighteen other probable sites (Appendix B). The lists are not exhaustive. Coles and Ritchie proposed many other possible sites which have been left as 'not proven' but it is unlikely that their

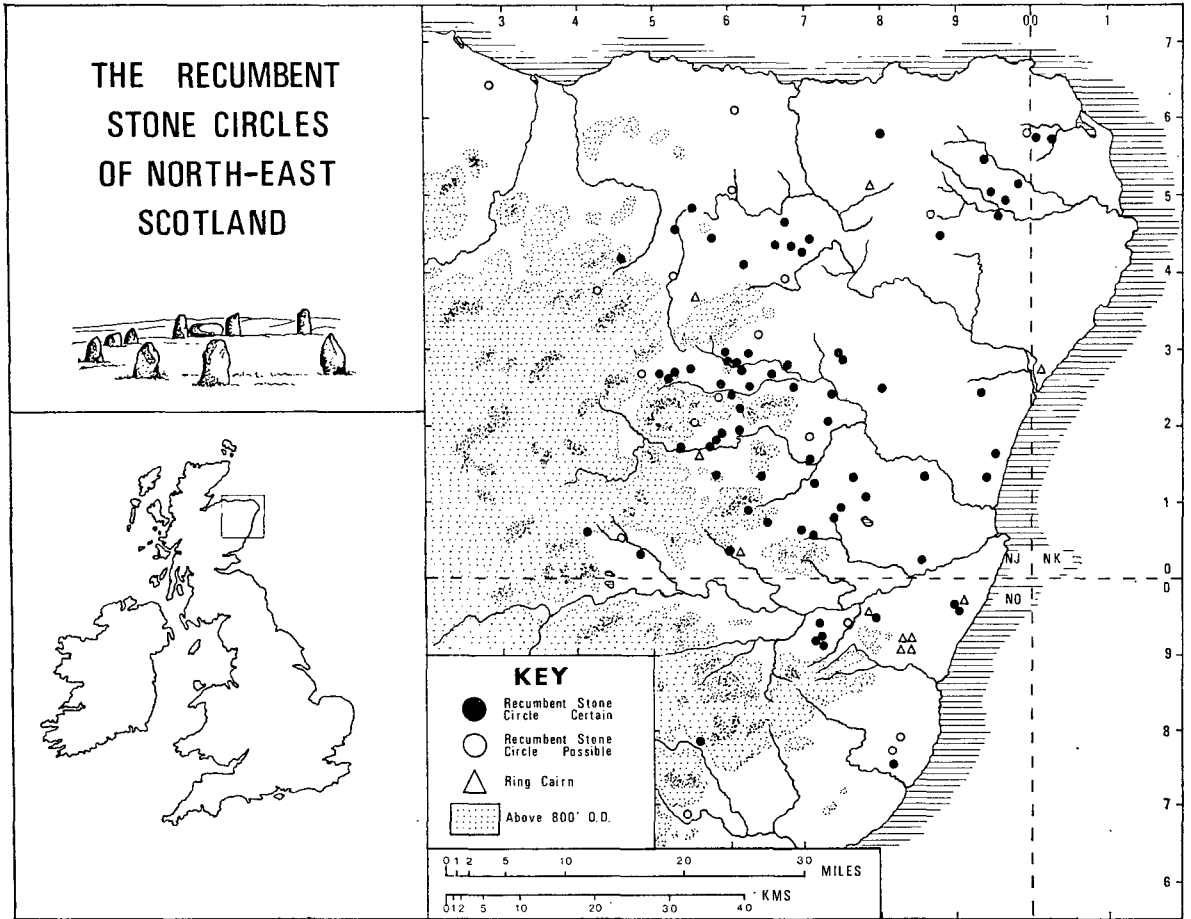


FIG 1

inclusion would have advanced this particular study as they are all unexcavated and either very badly ruined or totally removed.

### CLAVA CAIRNS AND RSCs

The Clava cairns of Inverness and the RSCs of Aberdeen share in common an isolated position around the north-east fringes of the Grampians; megalithic circles with stones graded in height; an interest in the south-west quadrant; ring-cairns; cupmarks; quartz pebbles; and cremations and pits containing burnt material within the central area.

But there are two differences that must be explained if a positive relationship is to be proved.

a. *Position of sites*

Henshall (1963, 20) points out that Clava cairns are low-lying, even in slight hollows, often ignoring a slight knoll immediately adjacent. Yet RSCs are normally on a step or spur with wide views. Certain Clava cairns, however, do occupy higher situations and these appear not in the central but peripheral areas where later versions might be expected.

Dalcross Mains (Henshall 1963, 374) on a hillock crest with wide views across the Moray Firth; Culduthel (*ibid*, 372) and Gask (*ibid*, 378) on slight rises; and Carn Daley (*ibid*, 367-8) on a hillcrest, are all in prominent positions, the last three being to the south of the main and probably primary Clava area, supporting the suggestion that a choice of high positions might be a later development. To the north-east of Inverness one could expect to find sites intermediate between the classical Clava forms and the RSCs. Here Clava cairns also sometimes have the higher positions associated with RSCs. As well as Dalcross Mains there are Easter Clune (*ibid*, 387) at 500 ft OD with wide views to north and west; Moyness (*ibid*, 388) in a flat field but with a good view to the north; and Little Urchany (*ibid*, 388) at 450 ft OD in a gently sloping field. This is the only cupmarked Clava site outside the main group and it may lie on the eastward route from Inverness to Aberdeenshire and the heavily cupmarked RSC at Rothiemay, Banff. (References for RSCs are given in the appendices).

Even further to the east than the Nairn sites are Upper Lagmore (*ibid*, 389-90; Coles 1907, 141-9) and Marionburgh (Henshall 1963, 391) in the Spey valley. The first is in a level position but in a sharply sloping field at 600 ft OD; and the second is on a terrace above the river. The positions of these sites are sufficiently similar to RSCs for one to hypothesise that the RSCs of Aberdeen may be traced from the Clava cairns.

b. *Recumbent stone* (pl 7)

This is a feature that never appears in any Clava cairn. Nor in those sites is there any large blocking stone of which the recumbent could be a copy. Its origin remains a problem and at present it is possible only to put forward several different theories.

Atkinson (1962, 17-20) suggested an origin in a comparable feature at Lyles Hill cairn, Co. Antrim (Evans 1953, 5), pointing out that apparent Lyles Hill fluted ware had been found at both Loanhead of Daviot RSC and East Finncery cairn, Aberdeen. The Lyles Hill cairn-kerb 'recumbent', however, has no close resemblance to the Aberdonian stone circle recumbents and has more affinities with the 'false portals' of cairns like Kintraw A and B, Argyll (Simpson 1967); Temple Wood, Argyll (Craw 1930); and Auchagallon, Arran (Bryce 1910), cairns geographically close to Ireland and in which all the 'recumbents' are kerbstones unlike those in Aberdeen.

These Scottish cairns, however, do appear to be culturally related to the Clava group (Ritchie and Maclaren 1973, 11; Burl 1973, 40) and the discovery of a kerb-cairn at Culcharron, Argyll (Peltenburg 1973) with false portals and a cupmarked prostrate stone at the SSW in a position similar to the supine stones at Kintraw A and at Croft Moraig, Perthshire, increases the possibility that the origin of recumbent stones may lie within the Clava tradition, one version developing at the foot of the Great Glen in Argyll, the other in Aberdeenshire.

Another possible origin may be found in the makers of AOC beakers who entered Aberdeen shortly after 2000 BC, using in particular the R. Don as a port of entry. From present data it appears that both the position and the date are broadly coincidental with those for primary RSCs. It is noteworthy that the position of the recumbent stone on a SSW-NNE axis is in keeping with the orientation preferred by these people for their burials (Clarke 1970, 62, 455). The association in a ritual circle of a recumbent stone at the S-SSW has been noted at two sites outside Scotland where AOC sherds were found, in both cases being added to an existing monu-

ment. At the Sanctuary, Wilts, a concentric stone circle succeeded a free-standing timber structure (Musson 1971, 371). Just outside the inner circle there was a long stonehole at the SSW (Cunnington 1931, pl II). At Woodhenge, Wilts, a sarsen 'recumbent' stone was added just W of S to timber ring 'B' subsequent to the erection of posts B8 and B9 (Cunnington 1929, 14). At both these sites there were AOC sherds (Clarke 1970, nos 1064F and 1107F). It is notable that at Loanhead of Daviot RSC there was also AOC pottery in conjunction with flat-rimmed ware. An analogous mixture of AOC and Knockadoon II ware was found at the ritual circle of Cashelbane, Co. Tyrone (Davies and Mullen 1940) with a loose cupmarked stone at the S.

It is just possible that the makers of this beaker pottery sometimes placed a recumbent stone at the S-SSW within ritual enclosures, perhaps related to the axial orientations of their burials. Certainly the distribution of early RSCs and AOC beakers coincide along the middle reaches of the R. Don in the first quarter of the second millennium. A recumbent stone circle might thus be the result of a fusion of beliefs from different cultures, a hybrid monument, predominantly Clava with its graded stone circle, ring-cairn and burial customs, but with the innovation of a recumbent stone.

Failing this explanation, one must return to the hypothesis put forward by Keiller (1934) that the recumbent stone in its SW position was an exaggerated form of the lintel-stone above the entrance of a Clava passage-grave. Some Clava cairns have entrances that project beyond the line of the kerbs. The recumbent stone may be an enlargement of this, a distorted memory of the lintel and of the importance of the area immediately in front of it. Some recumbents have huge stones at right-angles behind them like Easter Aquorthies. Other sites have a 'platform' behind the recumbent. These features are very suggestive of the last trace of the passage itself, a vestige of a feature otherwise forgotten. Economy of hypothesis suggests this to be the most probable explanation of the origin of the recumbent stone but adequate evidence is lacking and the question is left open.

## ROUTE

From Inverness there is a possible north coastal route along the foothills towards Strath Isla and the R. Deveron in the locality of Area 3 West. (In the region of RSCs the circles tend to group in small areas and these are numbered on fig 2).

It is more likely, however, that a sea route was used with a major entry into Aberdeenshire along the R. Don and its tributary, the R. Urie as it is in the low hills around Inverurie and Alford that many of the early RSCs are found. The short voyage along the coast of the Moray Firth would not have been exacting and it would explain the otherwise eccentric Area 12 locations of Aikey Brae on the R. South Ugie and Berrybrae by the Loch of Strathbeg.

As the concentration of early circles along the R. Don coincides with the distribution of AOC beakers reference should also be made to three other rivers. The almost total absence of circles along the R. Ythan may be explained by the predominance of presumably undesirable low land around it and the possible occupation of the area by miners of Buchan flint (Atkinson 1962, 30). The R. Deveron flowing into the Solway Firth has a strong concentration of N1/D and N2 beakers as well as many middle-phase RSCs suggesting a settlement here after the primary development in the Inverurie-Alford district. Finally, it is noticeable that the R. Dee was little used in the early second millennium, either by makers of beakers or by builders of stone circles. It is only N3 and N4 beakers that are distributed along the line of this waterway, paralleled by a spread of late RSCs in the same area.

The general distribution of RSCs is along the eastern fringe of the highlands (fig 1) in the

TABLE 1 DIAGNOSTIC FEATURES IN RECUMBENT STONE CIRCLES

NO.	SITE	AREA	EARLY FEATURES									LATE FEATURES							No. Finds	TOTAL			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16			17		
1	HATTON of ARDOYNE	2			x			x	x		x	5	x	x		x	x				4	+1	
2	OLD RAYNE	2		x				x	x	x	x	4	x	x	x	x	x	x	x	x	x	0	+4
3	LOANHEAD of DAVIOT	2			x							8	x	x	x	x	x	x	x	x	x	0	+8
4	BALQUHAIN	2			x	x	?			x		5½	x	x	x		?	x	x	x	x	1½	-4
5	INSCHFIELD	2	?				?	.	.	.	.	4	x	x	x	x	?	.	.	.	.	±	-3½
6	CANDLE HILL, Insch	2	x	.				.	.	.	.	3		.	x	x	.	.	.	.	.	1	+2
7	NEW CRAIG	2	.				.	.	.	.		4	.	x	x	x	.	.	.	.	.	0	+4
8	ARNHILL	3W		.	x		.	.	.	?		3½	x	.	x	x	.	.	.	.	.	0	+3½
9	ROTHIEMAY	3W		.			x		x	.		5	x	.	x	x		x		.	.	2	-3
10	CAIRN RIV	3E	x	.	.	.	?	.	.	.	.	±	x			.	±	.	.	.	.	2½	-2
11	FRENDRAUGHT	3E		.	x	x	.	.	.	.	.	1	x	x			.	.	.	.	.	2	-1
12	YONDER BOGNIE	3E		x	x	x		x	x	.	.	2	x				x			.	.	5	-3
13	CAIRNTON	3E	.		x	x	.	.	.	.	.	1	.	x			.	.	.	.	.	2	-1
14	HARESTANE	3E	.	x	x	.	.	.	.	.		1	.			.	.	.	.	.	.	2	-1
15	CORRYDOWN	4		.	x	x	.	.	.	.	.	1	x	.			.	.	.	.	.	2	-1
16	MAINS of HATTON	4		x	x	x	.	.	.	.	.	1	x				.	.	.	.	.	3	-2
17	PITGLASSIE	4	?	x	x	x	.	.	.	.	.	1½	?				.	.	.	.	.	3½	-2
18	OLD KEIG	5					.				.	7	x	x	x	x	x	x	x	x	x	0	+7
19	COTHIEMUIR WOOD	5				x				x		7	x	x	x		x	x	x	x	x	1	+6
20	CASTLE FRAZER	6			x	x		p	.	.	x	3½	x	x		x	x	?	.	.	.	2½	+1
21	EASTER AQUORTHIES	6			x		x				x	6	x	x	x		x	x	x	x	x	1	-5
22	NETHER COULLIE	6			.		.	.	.	.	x	3	x	x	.	x	.	.	.	.	.	0	+3
23	SUNHONEY	7								?		8½	x	x	x	x	x	x	x	x	x	0	+8½
24	MIDMAR KIRK	7	x				?			x	x	5½		x	x	x	?	x	x	x	x	1½	+4
25	BALNACRAIG	8	x	.	x	?	.	.	.	.	.	1½		.		.	.	.	.	.	.	2	-½
26	TOMNAGORN	8		.	x			x	x		x	4	x	.		x	x			.	.	3	+1
27	WHITEHILL	8			x						x	6	x	x		x	x	x	x	x		2	-4
28	TOMNAVERIE	9	x	.	x			?	?	.	x	3		.	x	x	x	.	.	?	.	1½	+½
29	GARROL WOOD	10	x	.	x	x	x	x	x	x	x	0		.			x					6	-6
30	RAES of CLUNE	10	x	x	x	x	.	x	x	x	x	0					x					7	-7
31	ESSLIE the Greater	10		x	x	x	x			x	x	3	x					x	x			5	-2
32	AUCHQUORTHIES	11	x	x	x	x		x	x	x	x	1	x				x					6	-5
33	AUCHMACHAR	12	x		x	x	?	.	.	.	x	1½		x			?	.	.	.	.	3½	-2
34	LOUDON WOOD	12	x	x	x			.	.	.	x	2		.	.	x	x	.	.	.	.	1	-1
35	AIKEY BRAE	12								.	x	7	x	x	x	x	x	x	x	.	.	0	+7
36	BERRYBRAE	12	x		x					.	.	5		x	x	x	x	x	x	x	x	1	+4
37	NETHERTON	12	x	x	x	x	?		x	.	.	1½					?	x		.	.	5½	-4
38	POTTERTON	13	.	?	x	x	.	.	.	.		1½	.	.			.	.	.	.	.	2	-½
39	KIRKTON of BOURTIE	17					.	.	.	.	.	4	x	x	x	x	.	.	.	.	.	0	+4
40	DYCE, Tyrebagger	18	?		x						x	6½	?	x		x	x	x	x	.	.	1½	+5
41	BINGHILL	19	x	.	x	x	?		?	.	.	2		.			?	x	?		.	5	-3
42	NORTH STRONE	20		x	x	x	x		x	.	.	2	x					x		.	.	5	-3
43	COLMEALLIE	26	x	x	x	x		x	x	x	x	1					x			?	.	6½	-5½

Key: | - feature exists in circle; x - feature does not exist; . - not known; ? - impossible to decide because site ruined. Finds: site no. 1, urn sherds; no. 2, B/3 bracer, ? beaker; no. 3, W Neolithic, AOC and Lyles Hill pottery; no. 10, bronze, jet, axe-hammer; no. 18, N/MR? and Flat-rimmed pottery; no. 20, massive urn sherds; no. 29, coarse urn sherds; no. 32, 'vase' fragments; no. 33, urn sherd; no. 42, urn.

foothills that abut the coastal strip. It is uncommon to find a circle in this 15-mile wide littoral, perhaps because of the absence of granitic stones in this metamorphic region, or perhaps because of the forest-cover that may have extended along the richer earths of the coast.

### DIAGNOSTIC FEATURES

In an attempt to deduce whether certain architectural features of RSCs could be used as indices of early, middle or later phases of the tradition a table was constructed in which these features could be analysed (Table 1). Unlike many other megalithic monuments RSCs permit such an analysis because they are numerous, and because they occur within a limited area, 40 × 25 miles, and can be considered to some extent a self-contained group.

In Table 1 the first major section includes nine features which were thought to be early from their size or the architectural care with which they had been treated. The total of such features in a circle was added in the central column as a plus value.

In the second section eight late features were analysed, again being chosen for size or apparent architectural deviation. These traits were totalled in an end column and given a minus value. The subtraction of one total from another in the final column gave plus or minus totals which were attributed as follows: Phase I = +8 - +4; Phase IIA = +3½ - -1; Phase IIB = -2 and below. (Phases III and IV relate to stone circles not studied in this paper).

Such an analysis is subjective and carries with it the analyst's own prejudices. To avoid this no account was taken either of the areas in which circles were found or, more important, of the finds within them. Only those circles with at least three observable features were used, a total of forty-three in all, 47% of the sites included in this paper.

The results were checked against circles where finds were known. There was an apparent correlation. In Phase I early circles, Loanhead of Daviot (+8) had Neolithic and early Beaker sherds. Old Rayne (+4) had a stone bracer and possible beaker. Old Keig (+7) had beaker sherds. In contrast, a Phase IIB circle like Cairn Riv (-2) was associated with a perforated axe-hammer and three fragments of bronze; and Garrol Wood (-6) contained 'coarse urn fragments'.

It would be naive to claim such a simple statistical analysis as being deeply significant for it tends to reduce the circle-builders to people operating from a standard blueprint, but it may be useful as an indication of which of the three postulated phases applies to a particular circle. It seems very significant that the circles appearing to be early generally lie within the central part of the region (Map 2) whereas those that are late lie round the edges even though their geographical position was ignored in the analysis.

The earliest areas are 3 West, 2, 5, 6, 7, 17 and 18 where the RSCs spread out from the district around Inch both eastwards and southwards. One observes this process surrounding Area 21 with its circle-henges much as seawater swirls round a boulder. The later RSC builders, except for two small groups around the Water of Bervie (29) and Edzell (26), travelling south from the central region turned westwards along the sides of the River Dee and ultimately followed the Braemar-Blairgowrie pass. Hence the most distorted of RSCs, Garrol Wood, is also one of the most southerly, lying just below the point at which the circle-builders moved along the Dee

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*Early features:* 1, diameter of circle between 60-89 ft; 2, at least one of the flanking stones is over 7 ft high; 3, recumbent stone at least 13 ft long; 4, recumbent stone lies between SW and SSW; 5, circle-stones are graded in height; 6, recumbent stone is within 3 ft of circumference of circle; 8, platform behind recumbent stone; 9, cup-marks on stones.

*Late features:* 10, diameter of circle less than 59 ft; 11, flanking stones less than 6 ft high; 12, recumbent stone less than 10 ft long; 13, recumbent stone lies between S and SSE; 14, circle-stones are not graded in height; 15, recumbent is more than 3 ft from circumference of circle; 16, one of flanking stones is more than 3 ft from circumference of circle; 17, cairn-kerb curves outwards markedly to incorporate recumbent stone

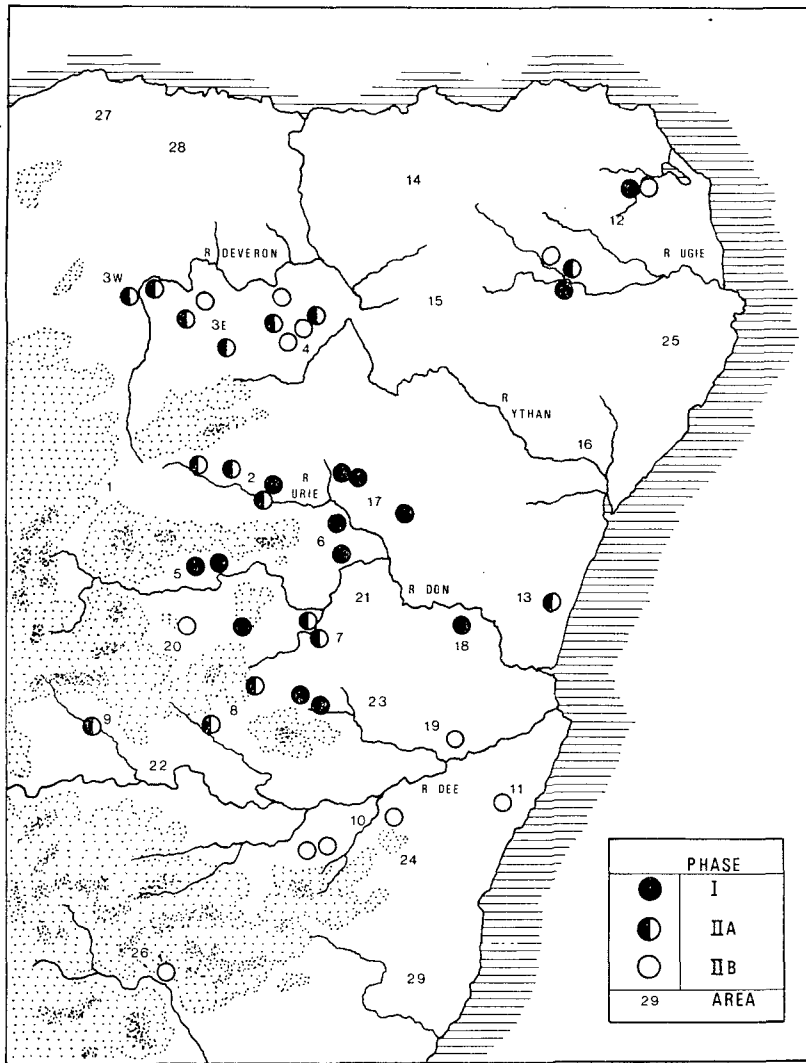


FIG 2 Hypothetical phases of recumbent stone circles in NE Scotland

valley. Few other RSCs are to be found here, only circles which retain some RSC characteristics in a variant guise. Garrol Wood may represent the final stage in RSCs before the abandonment of the recumbent stone itself.

#### *Features used for analysis*

The earliest RSCs had recognisable features varying in number from site to site but quite consistent compared with the later, outlying circles.

In the early sites diameters ranged from 60 ft to 80 ft. The pillars flanking the recumbent were tall, dominant stones over 7 ft high. The recumbent was a large, impressive block, 13 ft or more in length, but it was not always dressed or even flat on top. Its position, however, was

frequently around the SW or SSW of the circle circumference, SSW being rather more usual. The circle-stones were often graded in height with the stones opposite the recumbent being the smallest. Both pillars and recumbent lay either upon or very close to the circumference of the stone circle, on occasion being connected to the central cairn by a 'platform' which may have been a relic of the passage end in a chambered tomb. Some of these early circles had cupmarks on them as one might expect from sites that had a Clava cairn ancestry.

Few RSCs possess all these early features. Loanhead of Daviot has all but the very long recumbent. At Old Keig there is no cupmarking nor can it now be determined whether the stones were graded in height. Sunhoney has no platform. Aikey Brae lacks a platform and cupmarking. But these circles have the remaining features.

A final point in this analysis of early features is that it is the central areas that have circles with most of these traits, perhaps belonging to a period of 'classical' sites where a tradition had been established and which flourished briefly before time, geology and local circumstance caused Phase II circles of slightly aberrant forms to be built elsewhere. And once the process of variation had started it seems to have accelerated so that little remained of a norm and each outlying community built its own disparate version of an RSC, until the farthest sites were almost unrecognisable as the kin of the fine RSCs like Cothiemuir Wood, Easter Aquorthies, Midmar, Dyce and those others already mentioned.

RSCs of Phase IIB are often less than 59 ft in diameter, with flankers unimposing and shrunken on either side of a recumbent stone less than 10 ft long. The circle-stones are rarely graded.

Also in these late RSCs the recumbent and flankers were placed ever closer to the circumference of the cairn until they lay well inside the circle of stones that surrounded it (fig 3). The further south the circle the truer this is. In circles like Auchquhorthies, Kincardineshire, the recumbent pillars stand about 9 ft within the stone circle attached to a grossly outcurving cairn which is another feature of these late sites. At Garrol Wood they are 10 ft within the circle, and at the Raes of Clune, 8 ft. The process demonstrates how, on the next stage southwards into the distant parts of Perthshire, the recumbent itself disappeared leaving only a stone circle, small in size, of few stones, perhaps roughly graded in height with a disposition to have the tallest stone at the SW. Indeed, sometimes the tallest stone actually was placed at the opposite point, the NE as at Lundin Farm 4-Poster (Stewart 1966), so that it is only by a deductive process of inversion that one can detect the faint traces of its RSC ancestry (Burl 1971).

Another development was the continuing diminution in importance of the central ring-cairn until, in the derivative RSCs, it disappeared altogether. In Clava cairns Piggott estimated (1956) that the cairns could be up to 10 ft high. No RSC had a cairn as impressive as this. Moreover, it is possible to observe the gradual lowering of the cairn until it became little more than a floor of stones.

At Sunhoney the ring-cairn was hardly 12 in high. At Loanhead of Daviot there were no kerbs lining the central space. At both the Clatt sites, Bankhead and Hillhead, and at North Strone the interior of the circle was 'paved' with stones instead of possessing a proper cairn. And other variations may be noted. At Ardlair the cairn did not lie concentrically within the outer circle but nearer to its south. At Esslie the Greater and other Kincardineshire sites the cairn curved outwards at the south to incorporate the recumbent stone into the line of the kerbs.

Developments such as these within the main areas of RSCs show that it is not surprising that in the next stage of evolution the derivative sites lost their centre cairns altogether and retained merely the tradition of burial within the circle. One finds circles like Backhill of Drachlaw with stones graded in height towards the SW but without a cairn, or ring-cairns such as Cairnwell



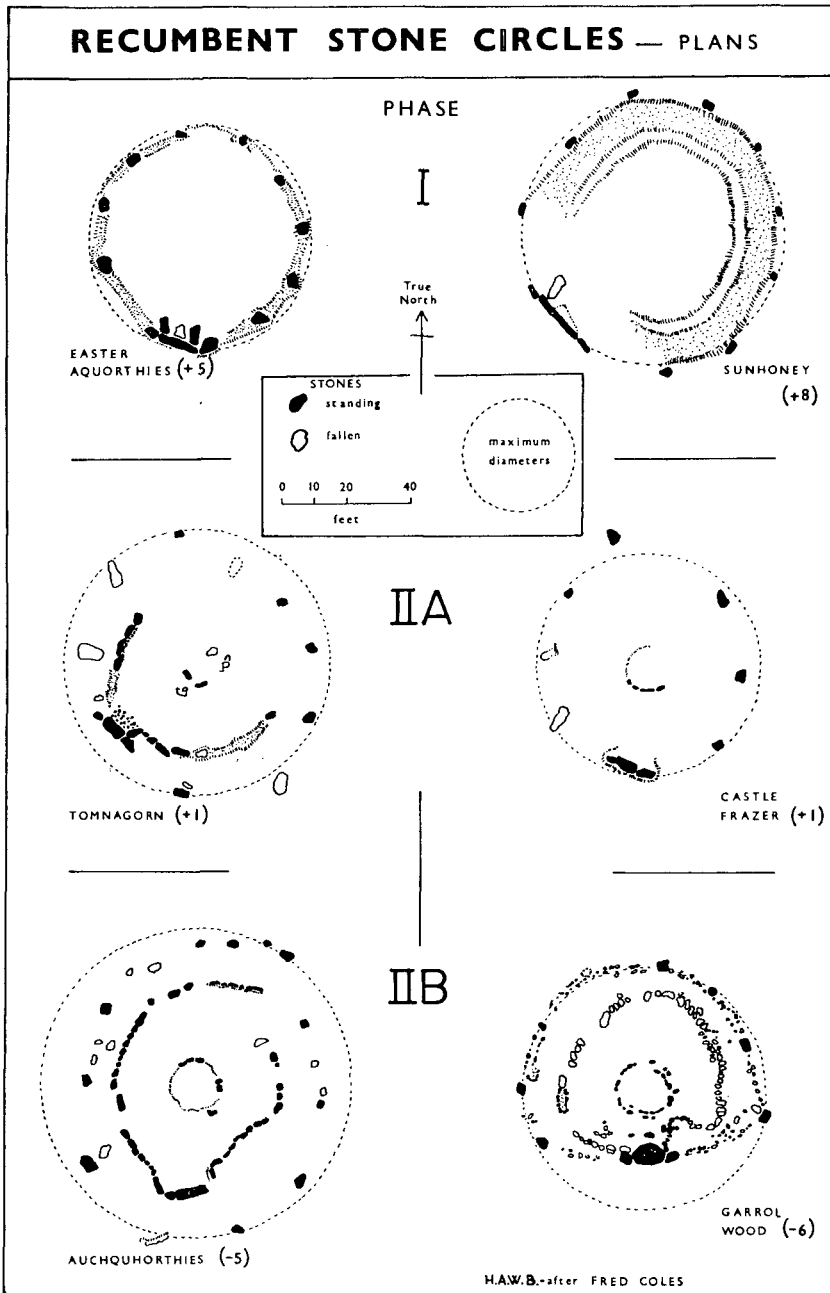


FIG 3

with its urns and cremations, or Raedykes where two of the four ring-cairns had no stone circle at all.

## OTHER FEATURES

### a. *Platforms*

Many early RSCs have a platform, a short, enclosed, rectangular area behind the recumbent, linking it to the cairn. The few finds here, like the beaker rim at Loanhead of Daviot (Kilbride-Jones 1935, 179), may be explained as accidental breakages. Only at Castle Frazer were there quartz pebbles strewn over the platform.

Platforms are most easily interpreted as non-functional replicas of the passage-end in Clava passage-graves. The presence of large stones at right-angles to the recumbent and lying between it and the cairn kerb at Easter Aquorthies, Ardlair, Arnhill and Tomnagorn could be representations of the passage side-slabs on which lintels rested in the Clava cairns but which, here, are entirely figurative. Later, these sharply-demarcated areas become simply a crude extrusion from the cairn like that mentioned at Auchquorthies, Kincardineshire. Platforms serve to emphasise the passage-grave derivation of RSCs.

### b. *Outliers*

The few RSCs like Balquhain that possess outlying stones lie near the Don valley which may have acted as a point of entry from the south. It was round here that the circle-henge builders of Broomend of Crichtie settled. It seems likely that atypical features like outlying stones may be the result of another tradition. At Balquhain, for instance, the outlier is of white quartz, a different mineral from the other circle-stones which are granite or whinstones, and it stands 20 ft to the SE of the east pillar at the edge of a slight ridge in a position which adds nothing to the architecture of the circle but where it might have performed a directional function similar to that of some circles in southern Britain like the Rollright Stones, Oxfordshire.

### c. *Banks*

Some RSCs are known to have these and it is likely that field-surveys would reveal others. Childe's excavation of Old Keig showed the bank there to be 10 ft wide but without a ditch. It encircled the central cairn and, had its circumference been complete, it would have held the recumbent stone also. An analagous ridge of loose stones between the circle-stones was noticed at Sunhoney. In Area 12 all the RSCs have banks or 'walls'. At Aikey Brae the bank was about 6 ft wide. Similar embankments were recorded at Loudon Wood, Auchmachar, and Berrybrae, and perhaps also at Gaval. A continuation of the practice occurred at Croft Moraig, Perthshire (Piggott and Simpson 1971), apparently a variant of an RSC; built over an earlier timber structure, it has the RSC features of a cupmarked recumbent stone, graded circle-stones, a SSW orientation, quartz pebbles, and a continuous outer stony bank.

Despite the absence of further evidence in NE Scotland, it may be noted that a bank would provide a division between the circle-area and the 'profane' world outside. Its construction might have been the final phase in the ceremonies that took place within the circle.

### d. *Cupmarks*

The majority of RSCs with cupmarks lie in the west of the region in the earliest areas of RSCs where memories of a Clava ancestry and its customs still lingered. The most heavily cupmarked stone is at Rothiemay, Banff, the RSC closest to Inverness. Other RSCs with many

cupmarks include Sunhoney and Balquhain, which are in areas which may belong to the primary periods of development.

Examination of those Clava cairns with cupmarks caused Henshall (1963, 31-3) to suggest that in several cases it was likely that the stone had been cupmarked before its incorporation into the tomb. This may be true at Braehead RSC where the recumbent stone rests on a cupmarked stone so that it is almost impossible to see the cupmarks today.

Whereas in Clava cairns cupmarked stones are not remarkably concentrated in any one area (Henshall 1963; Burl 1973), in RSCs they do occupy significant positions. Invariably they are found in association with the recumbent stone, either upon it or on the adjacent pillars and stones. Eight sites have cupmarks on their recumbents, three on their west pillars, three on their east. One circle has cups on the stone immediately to the W of the pillar, and two on the stone E of the east pillar. But not a single cupmark is recorded on any other circle-stone or kerb of the cairn, confirming the importance attached to the recumbent stone area. It is perhaps significant that the three stones by far the most heavily cupmarked: Balquhain (25 cups on the stone west of the west pillar); Sunhoney (31 on the recumbent); and Rothiemay (119 on the recumbent), have approximate azimuthal bearings of 232°, 230°, and 226° respectively, very similar to the predominantly SW orientation of Clava ring-cairns, presumably related to the midwinter sunset, unlike the majority of Aberdonian RSCs (*Orientations*, below).

## DATING

It has been suggested that RSCs derive mainly from the Clava cairns and are themselves the ancestors of some of the Perthshire stone circles. Some of the Clava cairns might have been built in the late third millennium BC (Henshall 1972, 283), and many of the sites in Perthshire belong to the mid-second millennium (Burl 1971, 45). It is therefore necessary to see what archaeological evidence exists to support the theory that the floruit of RSCs was in the first half of the second millennium BC. There are no C14 dates available at present.

The pottery discovered in the circles falls into three main groups: beakers; flat-rimmed ware; and 'urns'. Generally speaking the last two classes are not valuable for dating purposes yet, and until Clarke's recent work on beaker pottery (Clarke 1970) even these vessels could rarely be given good dating. Thus RSCs were assigned to the Middle and Late Bronze Age and even Iron Age because of a resemblance between flat-rimmed ware and the Covesea ware of later prehistory. Difficulties in reconciling this late date with the presence of beakers in RSCs were explained as the continued use of these sites into the Iron Age.

Recent work makes it possible, however, to propose an origin for the RSCs in the first quarter of the second millennium, their ceramic associations displaying no anomaly within this period.

### a. *Beakers*

Beaker material was found at Loanhead of Daviot and Old Keig. A fragment of a stone bracer was discovered at Old Rayne with an 'urn of reddish colour' which itself may have been a beaker.

At Loanhead the sherds were in the central space; in the pit under the 'Crescent' beneath the cairn; on the platform paving near the recumbent, and in its hollow; and by circle-stones 3, 4 and 7. Some of them were of AOC beakers (Clarke 1970, 511, nos 1467F *et al*) to which Clarke ascribes a period between 2000 and 1700 BC. One thick and heavily decorated sherd was buried beneath the foundation of the platform and its deposition must have antedated the con-

struction of the circle (Kilbride-Jones 1935, 179). Although its identification is not certain it has affinities with Clarke's N1/D group with a possible date towards the end of the eighteenth century BC.

At Old Keig other sherds (Clarke 1970, 1479F) were found in primary positions under the recumbent and in the central area. They were of indeterminate form. The pottery was found with a cremation in a long pit arranged east-west, an orientation more in keeping with necked beakers (*ibid*, 456; 169; 203) than with the earlier forms, and these discrepancies indicate a date perhaps from the eighteenth century BC.

Neither at Loanhead of Daviot nor at Old Keig is there proof that the circles were constructed much before 1800 BC. In the case of Old Keig, particularly, the site may be late in Phase I of RSCs, and, in consequence, a date early in the second millennium may be feasible for the first RSCs in NE Scotland. The presence of a Type B3 stone bracer at Old Rayne accords with this. Clarke (1970, 261; 570, n. 39) shows the exclusive associations of these bracers with either W/MR or N/MR beakers, the floruit of the latter in eastern Scotland occurring mainly between 1800–1650 BC.

#### b. *Neolithic pottery*

At Loanhead of Daviot one sherd of lugged Lyles Hill ware was found near the edge of the indentation made by the east pillar before it fell. Near this were two other sherds, one of fingernail-decorated beaker, the other Neolithic.

McInnes (1969, 25–6) has pointed out that in Scotland forms closest to Lyles Hill ware are found mainly in the west at sites such as Cairnholy I and Monamore whereas in the east shapes vary with localities, sometimes affected by the influence of Yorkshire form G bowls, as at Easterton of Roseisle and Tulloch of Assery B. At East Finnercy (Atkinson 1962, 18–19) beaker sherds under the cairn were found with a derived Lyles Hill form in which the typically Irish upturned lugs had been placed on the body rather than immediately below the rim of the pot. At Loanhead of Daviot the lugged Lyles Hill ware is likely to be derivative and its presence with beaker ware supports a proposed date early in the second millennium.

At the same RSC several sherds of Western Neolithic ware were found in an apparent posthole beneath the cairn. They may provide little more than a *terminus post quem* for the RSC's construction.

#### c. *Flat-rimmed ware*

This ware has been found at Loanhead of Daviot, Old Keig and at Fullerton circle-henge near Inverurie. It was this pottery that caused the ascription of RSCs to the Late Bronze Age, Childe likening the Old Keig sherds to those from Covesea and to the bucket-shaped urn from Largs. The same diagnosis caused Kilbride-Jones (1950, 311) to believe that the henge at Lugg Co. Dublin, must belong to the same period despite the presence of Neolithic pottery.

Morrison (1968), however, concluded that it is possible that the flat-rimmed ware had its origins in the Late Neolithic and be a form of pottery that existed throughout the Bronze Age. A similar mixture of Western Neolithic and flat-rimmed ware at Croft Moraig (Piggott and Simpson 1971, 10) confirmed that this pottery is to be found in early contexts and it seems best to consider it, if it is indeed a generic form, as a type of coarse, undecorated Late Neolithic/Bronze Age pottery of little value for precise dating.

#### d. *Urns*

If the early RSCs are difficult to date, the later are no easier. Many of the excavation reports by Dalrymple and his contemporaries in the nineteenth century describe the pottery

found in the centre spaces of the ring-cairns as urns of 'thick and massive paste' (Castle Frazer); 'small fragments of urn burnt very red' (Hatton of Ardoyne); and 'coarse, plain sherds' (Garrol Wood), and the very omission of any reference to decoration may indicate once again the ubiquitous flat-rimmed ware discussed above.

Certainly, fragments of a clay urn 'with incised decoration' were found at North Strone. And at Corrie Cairn (Stuart 1867, lix-lx), possibly a very late RSC or derivative ring-cairn, there was an encrusted urn, probable food-vessel and possible beaker. By some of the stones of the circle inside Broomend of Crichtie, a six-stone RSC derivative, were double-cordoned urns and a battle-axe of type IVE (N) (Roe 1966, no. 350) that may belong within the later period of the Early Wessex Bronze Age.

Although none of this is very satisfactory as evidence it may help to indicate something of a terminal date in the mid-second millennium for RSC building in NE Scotland after which non-recumbent forms might have been built both in the peripheral areas of Aberdeenshire and far to the south-west in Perthshire.

## SITING AND CONSTRUCTION

### a. *Positions of circles*

Both Coles (1903) and Keiller (1934) commented on the conspicuous siting of many RSCs. Keiller remarked that often an RSC is placed not on the summit of a hill but on a slight mound or upon a step which breaks the gradient of a hillside. Coles wrote that frequently circles were not situated on a flat summit but on ground facing eastwards although he cited only Yonder Bognie as an example.

There are indeed many sites where the circle is in an extremely noticeable position but it is not invariable. Tomnagorn, although near a hill summit, has much greater heights all around and can never have been conspicuous. Nether Coullie, South Ley Lodge and Rothiemay stand on quite level ground. Many sites in the north of the region are not on crests or knolls. RSCs seem to have been positioned where they looked towards a far eastern horizon, sometimes on the very edge of terraces where the few trees that might have interrupted the view could easily be cut down. Today the result of this situation is often that a distant circle is visible from lower ground. In antiquity forests would frequently have obscured the site whose present conspicuous position could be a phenomenon the builders never considered.

That sites were deliberately selected may be demonstrated at Whitehill where the reddish porphyritic stones were purposely transferred from their source on a shoulder of the hill to the spur on which they now stand, a task which involved the builders in moving the stones a long way. Without a meticulous geological survey one cannot be definite but it appears probable that at several other sites the stones were brought from a distance: Ardlair where the stones perhaps came from the region of the Correen quarry some  $4\frac{1}{2}$  miles SSW; Auchmaliddie from outcrops  $\frac{1}{2}$  mile SW; and Balnacraig's red granite stones may have originated at Stot Hill  $\frac{3}{4}$  mile distant.

### b. *Stone locality*

Although it has been noted that stones were sometimes moved a long way to comply with the needs of the builders, it is also true that most came from a nearby source. At Dyce they came probably from a nearby quarry, and at Hatton of Ardoyne there is an outcrop only fifty yards away. At Old Keig and Auchquhorthies the stones are presumably local.

The recumbent, however, is frequently of a stone quite different from that of the rest of

the circle, and had sometimes to be brought from much farther afield. It does not follow that this was for a ritual reason. The recumbent had, if possible, to be a much more massive block than the others, and one which might not be available nearby. At Dyce the grey granite recumbent is quite different from the other, thinnish pillars. At Loanhead the recumbent may have come either from the neighbourhood of New Leslie  $1\frac{1}{2}$  miles away or Johnstone  $2\frac{1}{2}$  miles away. The Old Keig recumbent came from the Don Valley somewhere between Kemnay and Tillifourie, and there are at least a dozen examples in which the recumbent stone is different from the rest of the circle.

#### c. *Levelling*

In three instances it is known that the site was levelled before the erection of the circle. Excavation at Castle Frazer (Coles 1904, 299–303) revealed that at the south-west where the ground falls away it had been built up in crude terraces. At Druidsfield (Wilson 1851, 159–60) the fall of land had been so great originally that levelling created an artificial bank 5 ft high at the top end on which some circle-stones were placed. At Loanhead of Daviot (Kilbride-Jones 1935, 172–3; 184) the hillslope had been levelled, rubble laid, and soil spread to make an even surface although not every part of the circle had been treated.

Such instances confirm the importance placed on the position of sites. Otherwise, level sites could have been found that needed no excavation.

#### d. *Dressing and shaping of stones*

The RSCs have been called ‘rude stone monuments’ by Fergusson (1872) but there is evidence that some of the stones were dressed, particularly the pillar-stones where it is easy to see the attempts to shape them to fit the configuration of the recumbent stone.

Some dressing of the stones has been done at Cothiemuir Wood; Candle Hill, Insch; Castle Frazer; Hatton of Ardoyne; Loudon Wood; Midmar where both pillars are shaped; and Dyce. Keiller suggested that the intended east pillar at Dyce had accidentally been interchanged with the stone to the east of it. Inspection of the stones supports this idea which predicates that the shaping took place off the site for otherwise such an error is less likely to have occurred. Not many other stones of the circles appear to be carefully shaped. It is another instance of the importance attached to the area around the recumbent.

As well as the sides of stones one should also note the possibility, first put forward by Kilbride-Jones (1934), that the bases of many of the circle-stones were ‘keeled’ or shaped into a rough beak which enabled them to be erected more easily. He noticed stones like this at Loanhead of Daviot and Old Keig. Similar shaping can be seen at Cothiemuir Wood on one of the fallen stones and at other ruined sites.

#### e. *Ring-cairns*

Many RSCs have some form of ring-cairn within them. The average diameter is 44 ft, much closer to that of the cairn of a Clava passage-grave than of a Clava ring-cairn (Burl 1973). Kerbs were placed round the circumference. At Loanhead of Daviot they were graded in height, much as those in the Clava cairns, with the largest lying towards the south. Generally, they were not especially big stones, those at Hatton of Ardoyne being up to 18 in high though set 2 ft into the ground.

The cairns themselves could never have been conspicuous. At Cairn Riv it was estimated that the cairn might have been 3 ft high, and Loanhead’s cairn was no more than 2 ft high. Sometimes the cairn was little more than a floor of stones as at Clatt of Hillhead or Bankhead.

One may suppose that it was the circle of stones that was now of prime importance with the cairn being retained as a traditional feature whose significance was fading.

Often within the cairns was a central space, usually circular, and edged with kerbstones. It was in this space that pits containing charcoal and cremations were discovered.

## BURIALS AND DEPOSITS

### a. *Central area. (i) Pits*

At the centre of the ring-cairn, in the space which may vary from 9 ft to 28 ft in diameter, there is almost invariable evidence of cremated burial, usually within a pit.

Some of these pits were lined with stones. Others were simply cut into the soil. At Ardlair two flat stones were arranged 'like a roof' above a pit 2 ft deep containing an unaccompanied cremation. At Hatton of Ardoyne a large pit, 5 ft 6 in in diameter and 4 ft deep was paved with small boulders and held a cremation and a fire-reddened 'urn'. Old Keig's pit, a rectangular trench that cut through a burned area, was much more shallow, being only 8 in deep, and contained dark earth, charcoal and cremated bone fragments. There is a reference to a time before 1692 when they 'did see ashes of some burnt matter digged out of the bottom of a little circle . . . in the centre of one of those monuments . . . near the church of Keig' (Garden 1692, 342). The burnt area is similar to a fire-marked patch at Loanhead of Daviot.

Old Rayne had a pit 2 ft 6 in deep with sides 'built like a well', which held burnt bone, charcoal, a 'reddish urn', and part of a stone bracer of polished, pale green stone perforated with three holes at its surviving end, Atkinson's type B3. When Coles excavated Garrol Wood RSC (Coles 1905A), he found a shallow pit, lined with six granite slabs, full of burnt bone and charcoal. To its north-west were more cremated bones on a granite slab.

Loanhead of Daviot had ten pits or depressions within its central space but none of these had cremated bone. Instead, the whole of the central area, which was not lined with kerbstones, was covered with a compacted layer beneath which was a deposit 2 in thick of black earth with much charcoal. No less than 5 lb of burnt bones was discovered in patches here, very thoroughly cremated, mostly adults but with some very young children's skulls.

Another RSC with a pit in its central area was Esslie the Greater, Kincardine, where there was a cist of small boulders containing pieces of bone.

A recent excavation on a Clava-type tomb at Raigmore (INV 47) outside Inverness (Henshall 1963, 384) also revealed a circular kerb within which were several pits, one containing a cupmarked stone (information from D D A Simpson).

### *Central area. (ii). Without pits*

No pits were discovered at Castle Frazer, Sunhoney or Auchquhorthies. The central space at the first had a paving of stones under which was black mould, charcoal and cremated bones. At Sunhoney, eight deposits of burnt bone were found in the same area. Most of the stones surrounding the central space were fire-marked, and the cairn itself was no more than 1 ft high. And in Auchquhorthies' central space was charcoal, half-burned ashes and urn fragments; no mention was made of bone.

### b. *By circle stones*

Several excavated sites revealed small stone settings around the bases of the circle-stones. These were called 'minor cairns' by the excavator of Loanhead of Daviot but this is a misleading

title. Some of these settings held charcoal or sherds. None had human bone. The paucity of reliable excavation accounts and the general reluctance to dig anywhere except in the very centre of these monuments makes the following digest little more than a hint of what may be a customary feature of RSCs.

Castle Frazer had a low earth 'tumulus' over a layer of small boulders by stone 4. Underneath were eight deposits of black mould and charcoal, seven of which had urn fragments showing traces of burning. Other small mounds were noticed at stones 1, 6 and 7. These settings were likened to 'pavements' by Dalrymple. They appear to be contemporary with the circle for a black mould was seen not only under the settings but extending beneath the circle-stones and under the platform. Although they were found at four of the six stones examined not one contained any bone fragments.

At Hatton of Ardoyne, also dug by Dalrymple, a pit was found by stone D which, like stone 4 at Castle Frazer, stood opposite the west pillar. The pit was a large one, 6 ft × 4 ft × 2 ft 6 in deep, extending inwards from the stone. It contained burnt material, charcoal and fire-marked stones but no bone.

Old Rayne had a roughly circular pit almost equidistant between the east pillar and the stone to its east, narrowing from 3 ft 6 in at its mouth to 2 ft at the base, 5 ft deep and cut into 18 in of rocky subsoil. It also held black mould and fire-marked stones but no bones. Each of the pillars at this RSC stood in a small mound.

At Sunhoney, Dalrymple recorded (Stuart 1867) that several circle-stones had small semi-circular pavements of stones in front of them but that no deposits lay underneath. On the south side of the cairn was a cistlike stone setting which held some sherds of a 'rude stone vessel' but there was no trace of a burial.

The final site is the most detailed of all. Loanhead of Daviot (Kilbride-Jones 1935) had stone settings beside all the stones other than the pillars; between each circle-stone and cairn-kerb was a stone about 18 in square. Going clockwise from the west pillar, the setting of stone 2 held three small sherds. Stone 3 had eight sherds of an apparent flat-rimmed, bucket-shaped urn which may have been deliberately broken, and beside the circle-stone was a single beaker sherd. The setting of stone 4 was very disturbed because of the robbing of cairn stones; between the stone and the kerb was a single sherd, and 8 ft beyond the stone were sherds of another flat-rimmed urn. This contained both charcoal and burnt bone and, as this is the only recorded instance of a setting having cremated bone, it is worth emphasising that it did lie well outside the circle and that the area was damaged, being on 'the outer limits on the north-west side' of the stone setting, and cannot be assumed to have held a sealed deposit.

Stones 5 and 6 had the same sort of settings as the others. Stone 7 had several sherds of flat-rimmed ware under the usual stone-covered earth mound, and with them was found a single beaker sherd. Stone 8 had no pottery, but a cist had been added to it outside the circle, filled with burnt bone and black earth and with an incense cup in the NE corner. The addition of this cist to the outside of the circle can be likened to the additions of cairns and barrows to other southern stone circles like Boskednan, Cornwall (Borlase and Lukis 1885, 24) and Arbor Low, Derbyshire (St George Gray 1903). The incense cup indicates a date around the mid-second millennium. It also points to a date earlier than this for the activities connected with the building and earliest use of the RSC.

By Loanhead's stone 9, the last before the E pillar, were many very small flat-rimmed urn sherds, and also a single layer of roughish stones on which there were two beaker sherds.

Evidence from the four sites discussed, Castle Frazer, Hatton of Ardoyne, Old Rayne and Loanhead of Daviot, shows that although some stones had deposits by them these were not of



burials, which were placed only within the central area, but of adjuncts to the cremation – charcoal, pottery, fire-marked stones. It is possible that their deposition was intended to sanctify or ‘strengthen’ the circle-stones as a barrier against the outside world like the bank discussed earlier.

*c. Other burials*

Like Loanhead of Daviot some circles appear to contain secondary burials. Several cists reputedly were removed from Harestane, Feith Hill, Banff. And North Strone, an extraordinarily diminutive RSC, had ‘seven ancient graves’ lying nearly E–W in the circle on its E side with some fragments of ‘what must have been an urn because of the marks of ornamentation on them’. Sunhoney’s sub-circular cist on the cairn’s south edge has already been mentioned. At Auchquhorthies there was a short cist between the cairn and the circle, with ashes and an urn in it.

*d. Other structures*

Once again, Loanhead of Daviot reminds us how imperfect our knowledge of these monuments is. Beneath the cairn but sometimes projecting through it was an arrangement of stones, some as large as the kerbs. The excavator thought they lay in a crescent-shape which had been denuded at the north and west by the removal of cairn material. It is equally likely that originally they were set in a horseshoe pattern with an open end towards the recumbent. Such an arrangement is known within several other circles, the best known being Stonehenge III with its sarsen trilithons, and others being Arminghall, Norfolk (Clark 1936), Croft Moraig, Perth (Piggott and Simpson 1971), and Dun Ruadh, Co. Tyrone (Davies 1936). Such horseshoe settings frequently lie on a SW–NE axis. Those in stone include Croft Moraig; Broubster, Caithness (Inv. Caith. no. 163); Hethpool, Northumberland (Honeyman 1935); and Dun Ruadh, all open to the SW; Stonehenge III, open to the NE. In timber, there are Arminghall and Lugg, Co. Dublin (Kilbride-Jones 1950). In earth there is Cowiemuir, Moray (Coles 1906, no. 20). These also have their open ends towards the SW–SSW. This orientation is so different from that customarily noticed in burial monuments that it may represent a tradition different from that, perhaps originally of open-air structures. There is a markedly eastern distribution to many of these horseshoes. But Achavanich, Caithness (Inv. Caith.) is open to the SSE and the inner setting at Bleasdale, Lancashire (Varley 1938) to the E. It must suffice here to point to the predominance of the NE–SW axis in these horseshoe settings.

Underneath the ‘crescent’ at Loanhead on the east, was a small pit containing one piece of burnt bone, one sherd and one piece of charcoal. Just to its N was a large area of bright red hard-baked soil concealed beneath the stones of the ‘crescent’. Above it, and adhering to the stones, was a black, greasy layer of fine charcoal dust with many fragments of burnt bone, the remains of a funeral pyre over which the cairn had been built.

*e. Burning*

There were three other sites in which traces of burning were discovered. At Druidsfield, according to local people, a causeway had been found within fifty yards of the circle and its paving was covered with ashes. At Gingomyres a layer of ashes with animal bones was found in the circle. At Old Keig, the only RSC except Loanhead of Daviot to have been excavated properly, a hearth was uncovered in the centre space, 18 in square and baked red. Beneath the clayey layer here was an irregular burned area 13 ft in diameter, and there were also some small patches beneath the cairn with traces of superficial burning.

Altogether, of the fourteen sites of which there are excavation accounts, eleven had signs of fire. Old Bourtreebush had no traces of anything because an earlier digging had removed

everything significant. At North Strone bones were found but it was not stated whether they were burned. It is only at Aikey Brae that it can be categorically stated that there were no remains of cremation or burning in the central space.

#### f. Quartz

The use of quartz pebbles or stones occurs occasionally in the Clava-RSC tradition (Burl 1973). Despite its abundance around the entrance to Corrimony passage-grave (Piggott 1956, 173) and in the chamber of Druidtemple (Henshall 1963, 375), no other Clava site (except the little Balnuaran circle) appears to have had much quartz.

Similarly, within the RSCs, only Castle Frazer had a scatter of such stones; the platform was covered with quartzite pebbles and this position, so reminiscent of Corrimony's entrance, strengthens the supposition that platforms are the putative, non-functional descendants of Clava passages. But other than Castle Frazer no certain RSC is known to contain quartz pebbles although Balquhain's outlier was quartz. At Corrie Cairn traces of considerable burning, white quartz and sherds including part of an encrusted urn were found in the centre space but it is not certain that this site was an RSC. Similarly, at Culsh, Aberdeen, a circle destroyed about 1830, there was a mass of burnt soil, four pits, two of which held bones, and a remarkable concentration of small white quartzite pebbles. Again, it cannot be certain that Culsh was an RSC though its position on a hillside and its associations points to the possibility.

### ASTRONOMY

With the present interest in astronomy and megalithic settings it would be inappropriate to ignore the possible astronomical use of RSCs though it should be pointed out that few modern archaeo-astronomers, including Thom, believe that stone circles were used for this purpose.

RSCs have been astronomically studied in the past. After Lewis (1888, 52), Somerville (1923, 193) discussed their possible calendrical function. Lockyer (1906) found the orientations so close to a N-S line that he predicated alignments on either the star Capella or Arcturus. His calculated dates, however, seem improbable. An alignment on Arcturus at Loanhead of Daviot implied a date of 660 BC; or, if Capella, 1580 BC, which would have to be scaled down for its C14 equivalent of *c* 1300 BC, very late for a site with AOC beaker sherds. Thom has found little of moment in RSCs although what alignments he did postulate were solar or lunar (Thom 1967, Table 8. 1, B1/8-B7/10).

Although, because the recumbent stone was placed at the SW, it was thought that RSCs were orientated on the midwinter sunset, an analysis of the plans of the circles through the mid-point of the recumbent only rarely points to the SW. Of the 74 RSCs, 35 are susceptible of having their orientation determined, bearings being taken from the accurate plans of Thom (1967) where possible. The resultant azimuths lie between 230° (SW) and 156° (SSE) (fig 4). Alignments of the passages of Clava chambered tombs have almost identical distributions. Yet midwinter sunset around latitude 57° occurred about 221° and would not vary greatly except in those unusual situations where there was a high hill immediately SW of the site. Over 75% of RSC lines are farther to the S in those Styx-like regions where sun and moon neither rose nor set. Alignments on stars are not appropriate chronologically. The lines are astronomically meaningless and yet their limited distribution suggests an astronomical basis.

The explanation given here is no more than tentative and needs checking by careful field-survey but it can be said that a majority of RSCs appear to be set out on a SSW-NNE axis, the south point varying between SW and SSE, and this is very reminiscent of the N-S positions of

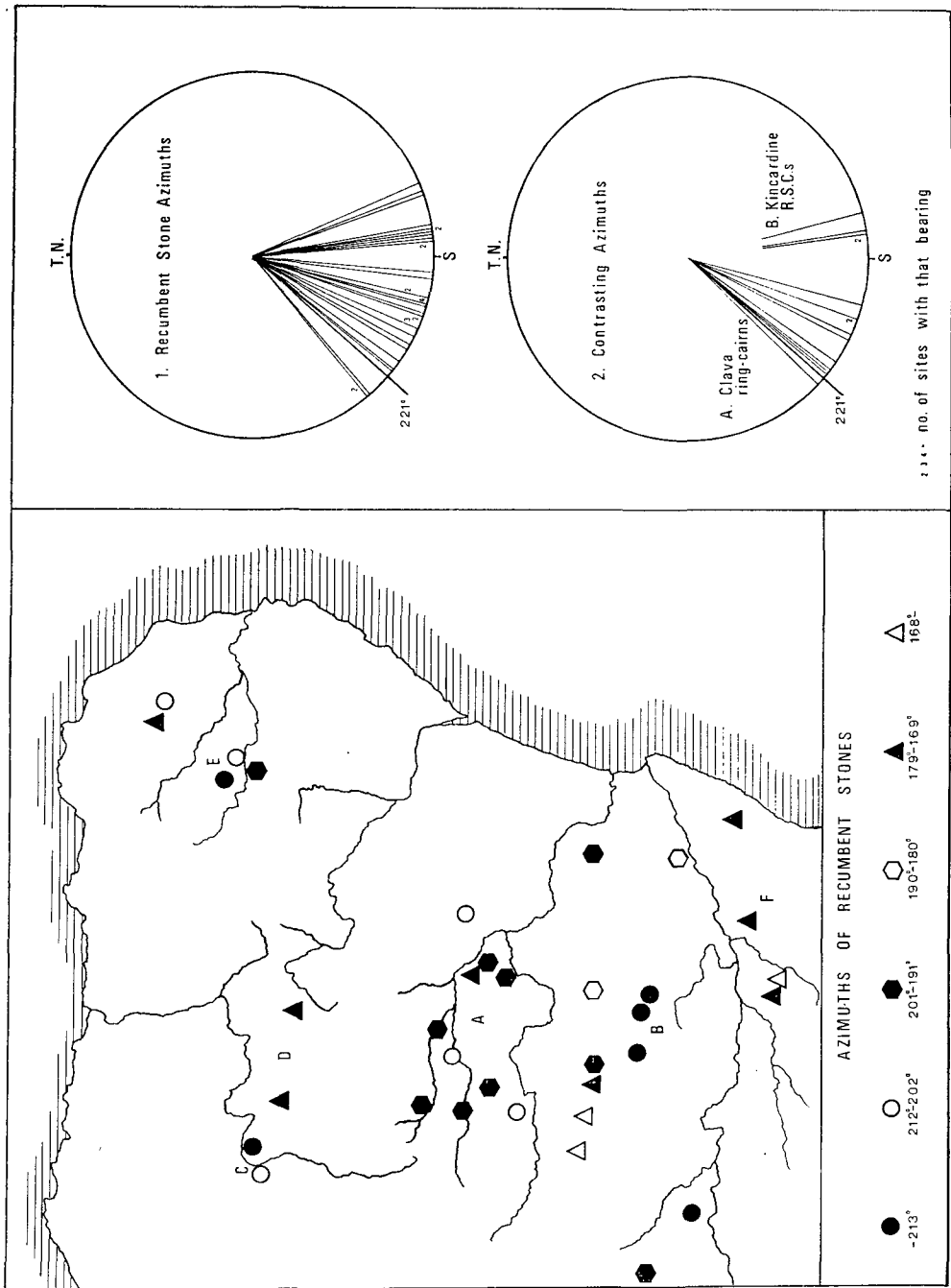


FIG 4 The azimuths of recumbent stones (where known), and their distribution in NE Scotland

early beaker burials (Clarke 1970, 455-6), where the axis was presumably determined by the body being laid to face east or west. It may be that RSCs also were designed to 'face' east, the recumbent and its pillars being only a symbolic entrance on a line at right-angles to the orientation.

The architecture of RSCs suggests three criteria for the builders: the recumbent had to be

in the southern arc of the circle; the site should be elevated; and there should be a good view, usually to the east. Thus the dominant orientation may have been towards the sunrise. If this is so and the recumbent line is at right-angles to it then many of the RSCs appear to have been built in the late summer and early autumn.

Reference to fig 4 shows some fairly homogeneous groups for azimuths of recumbent stones. The central group A is mainly SSW (6) with 2 at SW and 1 SSE. Group B is all SW; C = SW; D = SSE; E = SW; and F = SSE (fig 4, 2b). Such local uniformity may be an indication of traditional times for the building of these sites. Only in Area 12 are azimuths completely opposed, Berrybrae being to SW and Netherton to SSE.

The wide scatter of azimuths between SW and SSE in Clava passage-graves and RSCs is not paralleled in Clava ring-cairns (fig 4) where lines from the centre to the tallest kerb or circle-stone all lie between SW (Bruaich, 223°) and SSW (Daviot, 195°). These alignments appear to be directly related to midwinter sunset at 221°, the minor deviations to the south being caused by the effect of a close mountainous horizon altitude, often of 5° or more. In this respect, as in their circle-diameters and centre-spaces, RSCs appear more closely related to Clava passage-graves than to the ring-cairns.

It must be pointed out that, if the 'right-angle' interpretation of the position of the recumbent stone is correct, it implies that the orientation was connected with ceremonies related to the building of the circle or with the burials but not for later viewing. These may have been sun-lines for the dead but the circles certainly were not observatories.

## FUNCTION

A detailed examination of the recumbent stone circles of NE Scotland reveals much evidence of burial but does not inevitably demonstrate that their prime purpose was sepulchral. It is, however, possible to put forward tentative ideas about the way in which they were constructed and of the ceremonies that took place within them.

The first task of the circle-builders was to find a suitable site, preferably upon a level spur on a hillside from which there were distant views. To achieve this at least three sites were levelled.

An occasional stone circle elsewhere in Britain, like Dun Ruadh, Co. Tyrone, or Croft Moraig, Perthshire, is known to have been erected on an earlier site. There is only the slightest hint that this was the case in RSCs: one posthole under the cairn at Loanhead of Daviot. Future excavations may reveal more elsewhere.

The circle then had to be laid out. It is possible that it was the circle of standing stones that was first planned. Apart from the indications that the cairn was built later it is noticeable that circle, cairn and centre space at Loanhead have three different centres with a variance of a foot between each other suggesting separate periods of laying-out. As only very few sites are anything but circular, some being flattened (Thom 1967, 56-83) and Tomnagorn and Netherton elliptical, it may be assumed that the initial plan involved nothing more than a central stake and a rope to describe a circle around it. A radius of about 40 ft would cause no appreciable eccentricity through the dragging and wavering of the radial rope over the ground.

Then would come the quarrying and dressing of the stones. One may conclude that the site was placed as near as possible to a source of stone. Only the recumbent would create problems for in many cases its massive block could be found only some miles away. At Balnacraig the recumbent is thought to have come from Stot Hill  $\frac{3}{4}$  mile away, and as the stone is about 15 tons in weight it is not surprising that the circle is much nearer the foot than the crest of a slope that climbs 200 ft at a gradient of 1:5. The recumbents at Balquhain and Cothiemuir Wood both

weigh about 15 tons, and at Dyce 24 tons. Kirkton of Bourtie's enormous stone measures 17 ft × 5 ft 6 in × 5 ft and weighs at least 30 tons. But it is at Old Keig that one realises the incredible efforts of the circle-builders. The recumbent here is 16 ft long × 6 ft 9 in high × 6 ft 6 in thick and weighs about 48 tons. (Allowing for irregularities the recumbent stone is approximately 610 cu ft. Sillimanite gneiss has an average specific gravity of  $183\frac{3}{4}$  lb per cu ft). It is believed to have come from six miles away in the Don valley. Though much of the journey could be along flat ground, trees permitting, the final haul had to be made uphill over nearly half a mile at a gradient of 1:14.

Atkinson (1961) calculated that on level terrain, once the stone was moving, two men were sufficient to pull each ton of weight, but any slope would demand more people. At Old Keig the last climb must have involved the strength of a hundred and fifty or more persons just to pull the stone. And others would be needed; Atkinson's figures were based on the stone being shifted over rollers, each of which would need four to six people to carry it at Old Keig. The long recumbent would have required a minimum of three rollers beneath it and three more either just released by the forward movement of the stone or just about to be covered by it. Altogether at this site one must assume that the smallest work-force was about one hundred and eighty labourers, and such an effort must have involved either the combination of several small communities or perhaps a professional gang.

Given so many persons the erection of the stones would not be particularly difficult for, although some of the stones were 11-12 ft long, they were not as heavy as the gigantic recumbent. Kilbride-Jones (1934) has demonstrated how these pillars were 'keeled' at their bases to provide an easy fulcrum; and Keiller (1934) indicated the ways in which several of the pillars were dressed to fit better against the recumbent.

The number of stones in an RSC was often between eleven and twelve. Of the twenty-six sites at which the number of stones can safely be calculated, fifteen are of this number. Only one RSC, Candle Hill, Inch, has fewer than nine, and only North Strone has more than thirteen. This is quite compatible with a Clava ancestry. Three Clava cairns had eight stones in their circles, three had ten, and at least ten circles had twelve stones. The observation brings with it intimations of elementary numeracy in these societies.

Before the erecting of the stones it is likely that at least some of the cupmarking had been done. Sometimes these marks are extremely close to the edge or base of a stone, making their subsequent formation very difficult.

After the erection of the circle-stones came the ceremonies, perhaps related to sunrise at a particular time of the year. It has been noted that the customary form of burial in RSCs is cremation, and this may have occurred within the circle, explaining the large burnt patch under the cairn at Loanhead of Daviot. At other sites it may have taken place in the large centre space. At Old Keig a trench had been cut through a burnt area. At the centre of Sunhoney were fire-marked stones. By a circle-stone at Hatton of Ardoyne was a wide area with burnt material and fire-marked stones, another possible pyre like Loanhead.

After the burning of the dead the interments could be made, often in a stonelined pit, and the cairn built. At Old Rayne the bones, ashes and charcoal from the pyre were spilled around the pit's mouth. Maybe now pots were deliberately smashed (this was deduced at Loanhead). At this point also the small 'cairns' could have been built against the circle-stones, covering material from the pyre from which the bones had already been removed. There is also the possibility that the first activities at the site included the digging of pits and deposition of cremated bone. The result would be very similar to the Dorchester, Oxon sites (Atkinson, Piggott and Sandars 1951). It is unlikely that such pits antedated the construction of the kerb as the area

would soon become indistinguishable from the land around it unless it were demarcated in some way.

And then the cairn could be constructed, being sometimes only a token floor of stones. This may have been the final stage of the erection ceremonies. And thus, incomplete though it is one may see a pattern in the building of an RSC. The cremations in them are similar to those Clava sites like Kinchyle of Dores (Henshall 1963, 380), Druidtemple (ibid, 375), Avielochan (ibid, 359) Balnuaran of Clava Centre (ibid, 361) and Culdoich (ibid, 371), a continuity of tradition not surprising in antiquity.

It is difficult to see RSCs having a purpose other than ritualistic for astronomical observation would not require a whole circle of stones instead of a simple line, nor would it seem to demand an elaborate form of burial. Yet it is conceivable that such activities could have enhanced the nature of rites within the circle.

Despite their burials it may be that the circles are not the sepulchres they appear to be but religious monuments in which the ceremonies were connected with death or ancestor worship or with the sun. It must be noted that the central cairn would preclude any rites performed by a large group, and that an open central space would have been more suited to a meeting-place or a sanctuary than the cairn-encumbered interior of an RSC. Any form of dancing around the stones would have been hindered by the platform between recumbent and cairn.

The presence of burnt human bones in these sites cannot today be considered to prove that the main function of RSCs was sepulchral. It remains true that the stone circles of northern Britain with their almost invariable burials are different from those of the south but this may be a difference of dedication or socio-magical ritual rather than of function. Earthen long barrows may no longer be the simple sepulchral mounds they were thought to be (Henshall 1970, 40). Irish court cairns similarly may have been less tombs than ritual centres (Case 1969, 13). And RSCs are clearly more than just places for the deposition of cremated bone. Their carefully designed architecture, their solar orientation, the broken pottery, and their chosen positions suggest that these were monuments of great importance to their builders. Their density implies that quite small localities might have had their own stone circle.

It is too soon to be dogmatic about their original significance. It can be said that burial was one of their dominant features and that recumbent stone circles belong to a late but still imposing megalithic tradition in Britain.

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## APPENDIX A

### Recumbent Stone Circles

#### *Aberdeen*

1. AIKEY BRAE. NJ 959471. Ferguson 1881, 105; Coles 1904, no. 13.
2. ARDLAIR. NJ 552279. Stuart 1867, xxii; Coles 1902, no. 53.
3. ARNHILL. NJ 531456. Coles 1902, no. 64.

4. AUCHMACHAR. NJ 948503. Coles 1904, no. 15.
5. AUCHMALIDDIE. NJ 881448. Coles 1904, no. 9.
6. AULD KIRK o' TOUGH. NJ 625092. Coles 1900, no. 14.
7. BALNACRAIG. NJ 603035. Coles 1900, no. 13.
8. BALQUHAIN. NJ 735241. Coles 1901, no. 17; Ritchie 1918, 91-4.
9. BERRYBRAE. NK 028572. Coles 1904, no. 19.
10. BINGHILL. NJ 855023. Coles 1900, no. 21.
11. BLUE CAIRN. NJ 411063. Ogston 1931, 108-9; Keiller 1934, 8, 12; Craig 1950, 428-30.
12. BRAEHEAD. NJ 592255. Coles 1902, no. 46.
13. BROOMEND, AUCHLEVEN. NJ 63.25. Keiller 1934, 20.
14. CAIRNTON. NJ 58.44. Coles 1903, no. 36; Keiller 1934, 12.
15. CAIRN RIV. NJ 674466. Coles 1903, no. 32.
16. CANDLE HILL, INSCH. NJ 599299. Coles 1902, no. 41.
17. CASTLE FRAZER. NJ 715125. Coles 1901, no. 4; Coles 1904, 299; Keiller 1934, 8, 16.
18. CLATT, BANKHEAD. NJ 529270. N.S.A. XII, 851; Coles 1902, no. 51; Keiller 1934, 18.
19. CLATT, HILLHEAD. NJ 528265. N.S.A. XII, 851-2; Coles 1902, no. 50; Keiller 1934, 18.
20. CLOCHFORBIE. NJ 80.58. Coles 1904, no. 25.
21. CORRSTONE WOOD. NJ 510271. Coles 1902, no. 54.
22. CORRYDOWN. NJ 707445. Coles 1903, no. 25.
23. COTHIEMUIR WOOD. NJ 617198. Coles 1901, no. 10; Keiller 1934, 8, 11, 13; N.S.A. XII, 946-7.
24. CROOKMORE. NJ 588184. Keiller 1934, 18, 19.
25. DRUIDSFIELD. NJ 578177. N.S.A. XII, 449-50; Wilson 1851, 111; Coles 1901, no. 8; Keiller 1934, 12, 18.
26. DRUIDSTONE. NJ 616222. Coles 1901, no. 18.
27. DUNNIDEER. NJ 608284. Coles 1902, no. 39.
28. DYCE, TYREBAGGER. NJ 860133. Coles 1900, no. 22; Keiller 1934, 9, 13, 15.
29. EASTER AQUORTHIES. NJ 732208. Coles 1901, no. 15; Keiller 1934, 8, 9, 12, 16, 17.
30. FRENDRAUGHT. NJ 62.41. Ritchie 1917, 30-34.
31. GAVAL. NJ 981515. Coles 1904, no. 19.
32. GINGOMYRES. NJ 46.42. Stuart 1855, 141; Coles 1906, no. 12.
33. HATTON OF ARDOYNE. NJ 659268. Stuart 1867, xxii; Coles 1901, no. 21.
34. HILL OF FIDDES. NJ 934243. Anderson 1777; Coles 1902, no. 23.
35. INSCHFIELD. NJ 624294. Coles 1902, no. 45.
36. KIRKTON OF BOURTIE. NJ 801250. Coles 1902, no. 25.
37. LOANEND. NJ 604242. Coles 1901, no. 19.
38. LOANHEAD OF DAVIOT. NJ 747288. Coles 1902, no. 29; Kilbride-Jones 1935, 168-222.
39. LOUDON WOOD. NJ 962497. Coles 1904, no. 14.
40. MAINS OF HATTON. NJ 699425. Coles 1903, no. 26.
41. MIDMAR. NJ 699064. Smith 1880, 308; Coles 1900, no. 16; Keiller 1934, 13, 14.
42. MILL OF CARDEN. NJ 69.25. Coles 1902, no. 34.
43. MUNDURNO. NJ 940131. Coles 1904, 303-5.
44. NETHER BALFOUR. NJ 539172. Keiller 1934, 18.
45. NETHER CORSKIE. NJ 749096. Coles 1903, no. 1.
46. NETHER COULLIE. NJ 709156. Coles 1901, no. 5A.
47. NETHERTON. NK 043573. Coles 1904, no. 22.
48. NEW CRAIG. NJ 745296. Coles 1902, no. 30; Ritchie 1918, 94-6.
49. NORTH STRONE. NJ 584138. *Scottish Notes & Queries*, May, 1897, 178; Coles 1902, no. 3; Keiller 1934, 10-13, 20.
50. OLD KEIG. NJ 593195. Garden 1692; Coles 1901, no. 9; Childe 1933, 1934.
51. OLD RAYNE. NJ 679280. *PSAS*, II(1854-7), 429; Stuart 1867, xxi; Coles 1902, no. 33.
52. PITGLASSIE. NJ 686434. Coles 1903, no. 24.
53. POTTERTON. NJ 952163. Ritchie 1917, 36-8; Ritchie 1918, 91.
54. SOUTH FORNET. NJ 782109. Coles 1902, no. 4.
55. SOUTH LEY LODGE. NJ 767132. Coles 1902, no. 11.
56. STONEHEAD. NJ 601287. Coles 1902, no. 40.
57. STRICHEN. NJ 937545. Coles 1904, no. 18.

58. SUNHONEY. NJ 716058. Stuart 1867, xxi; Coles 1900, no. 18.
59. TOMNAGORN. NJ 651077. Coles 1900, no. 15.
60. TOMNAVERIE. NJ 486034. Coles 1905B, no. 2.
61. WANTONWELLS. NJ 619273. Coles 1902, no. 37.
62. WESTER ECHT. NJ 739084. Coles 1900, no. 19.
63. WHITEHILL, TILLIFOURIE. NJ 643135. Stuart 1855, 141; Coles 1901, no. 6; Keiller 1934, 8, 16, 17, 19.

#### *Angus*

1. COLMEALIE. NO 565781. Warden 1882, 226–7; Keiller 1934, 1.

#### *Banff*

1. HARESTANE, FEITH HILL. NJ 664438. Coles 1903, no. 27.
2. ROTHIE MAY. NJ 550487. Coles 1903, no. 38; Ritchie 1918, 104–8.

#### *Kincardine*

1. AUCHQUHORTHIES. NO 901963. Thomson 1865, 133–4; Stuart 1867, xix; Coles 1900, 145–9; Smith 1880, 305–6, 307; Keiller 1934, 3, 8–11, 16.
2. ESSLIE THE GREATER. NO 717916. Smith 1880, 301–3; Coles 1900, no. 8.
3. ESSLIE THE LESSER. NO 722921. Smith 1880, 303–4; Coles 1900, no. 9.
4. GARROL WOOD. NO 725912. Coles 1900, no. 7; Coles 1905A, 190–205; Keiller 1934, 10, 16; Smith 1880, 300–301.
5. MILLPLOUGH. NO 819754. Coles 1903, 196–8.
6. OLD BOURTREEBUSH. NO 902964. Thomson 1865, 134–5; Coles 1900, no. 1.
7. RAES OF CLUNE. NO 795949. Smith 1880, 299–300; Coles 1900, no. 5; Ritchie 1919, 71–3.
8. TILQUHILLIE. NO 72.940. Ritchie 1919, 71.

## APPENDIX B

### Possible Recumbent Stone Circles

- a. Bellman's Wood, Banff. NJ 605505. Coles 1906, no. 9.
- b. Cairnfauld, Kincardine. NO 754941. Coles 1900, no. 6.
- c. The Camp, Montgoldrum, Kincardine. NO 816772. Coles 1903, no. 1.
- d. Chapel o' Sink, Aberdeen. NJ 706189. Coles 1900, no. 11.
- e. Corrie Cairn, Aberdeen. NJ 552205. Stuart 1867, lix–lx; *PSAS*, VII (1869), 24–5.
- f. Cortes, Aberdeen. NJ 99.58. N.S.A. XII, 293.
- g. Cotbank of Barras, Kincardine. NO 827791. Coles 1903, 198–9.
- h. Culsalmond, Aberdeen. NJ 64.32. N.S.A. XII, 732; Coles 1902, no. 68.
- i. Culsh, Aberdeen. NJ 87.48. Beveridge 1914.
- j. Huntly, Aberdeen. NJ 529399. Coles 1902, no. 63A.
- k. Innesmill, Moray. NJ 289641. T.Inv. S.S. II, 44; Coles 1906, no. 22.
- l. Leslie, Aberdeen. NJ 59.24. N.S.A. XII, 1022.
- m. Logie Coldstone, Aberdeen. NJ 459055. O S Edinburgh, NJ 40 NE 4.
- n. Nether Dumeth, Aberdeen. NJ 425378. Coles 1906, no. 11.
- o. Newbigging, Angus. NO 541693. Jervise 1853, 125.
- p. St. Brandan's Stanes, Banff. NJ 608611. Coles 1906, no. 4; Ritchie 1918, 104.
- q. Upper Ord, Aberdeen. NJ 484269 appr. Coles 1902, Nos. 56, 57.
- r. Upper Third, Aberdeen. NJ 677394. Coles 1903, no. 14.

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a Easter Aquorthies, Aberdeen; from SE showing outer face of recumbent stone and flankers



b Dyce, Aberdeen; from NE



c Midmar Kirk, Aberdeen; from N across circle to recumbent stone