

New aspects of rotary querns in Scotland

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ABSTRACT

This paper discusses aspects of Scottish rotary quern use which have received little attention in the past, such as handling systems (particularly horizontal slot-handled querns), decoration and an unrecognised class of miniature examples. The growing corpus of rotary querns is starting to reveal regional patternings and concentrations of particular decorative styles. This ongoing investigation suggests that the picture is more complex than previously understood.

INTRODUCTION

This paper has been stimulated by recent discoveries of rotary quern stones from Later Prehistoric–Early Historic (c 500 BC–AD 800) settlement sites throughout Scotland as the result of developer-funded excavation. Post-excavation analysis at the National Museums Scotland has led us to look more widely at rotary quern use in Scotland, leading to the identification of some interesting patterns. Although querns are one of the most regular finds from Iron Age excavations, they have never received the sustained attention they deserve, and indeed few are illustrated or even published in sufficient detail. Yet, as Euan MacKie has long argued, there are intriguing aspects to different types of quern which merit attention (MacKie 1971: 52–5; 1987: 5–11).

Sadly, despite many recent excavations, there is still little secure close dating for rotary querns, as so many are reused in secondary contexts which provide only a *terminus ante quem*. However, as elsewhere in Britain (eg Laws et al 1991: 396) there are occasional examples from early Iron Age contexts. Evidence of early rotary quern use from the Howe (Phase III, 6th–5th centuries BC) and from the pre-broch level at Dun Mor Vaul, Tiree indicates that rotary querns may have been in use far earlier than previously

suggested, perhaps from as early as the 5th or 4th century BC (MacKie 1971: 54; Ballin Smith 1994: 26; Harding 2006: 74). It thus seems clear that the normal date of c 200 BC for the quern transition, when saddle querns began to be replaced by rotary types, is too late (Caulfield 1978; Armit 1991: 190–5). It seems the spread of this new technology was rapid, but it is not yet clear if all settlements had rotary querns at this early stage.

Although debates continue over quern chronology, some interesting regional quern types have been identified in Scotland. MacKie (1971: fig 5) has highlighted a major regional difference in Iron Age rotary quern use, with disc querns to north and west and buns or beehives to south and east; by the Early Historic period disc querns were the dominant form everywhere (eg at Dunadd and Whithorn; Nicholson 1997: 459–60; Lane & Campbell 2000: 180–6). Our work so far supports MacKie's models and highlights further regional patterns. Many aspects of quern studies merit more work, from production and use through symbolism to fragmentation and deposition. The querns discussed here are all variations of the two standard Scottish types; bun and disc querns. We will consider three topics: horizontal slot-handled querns, decorated querns and miniature querns, focusing on questions of

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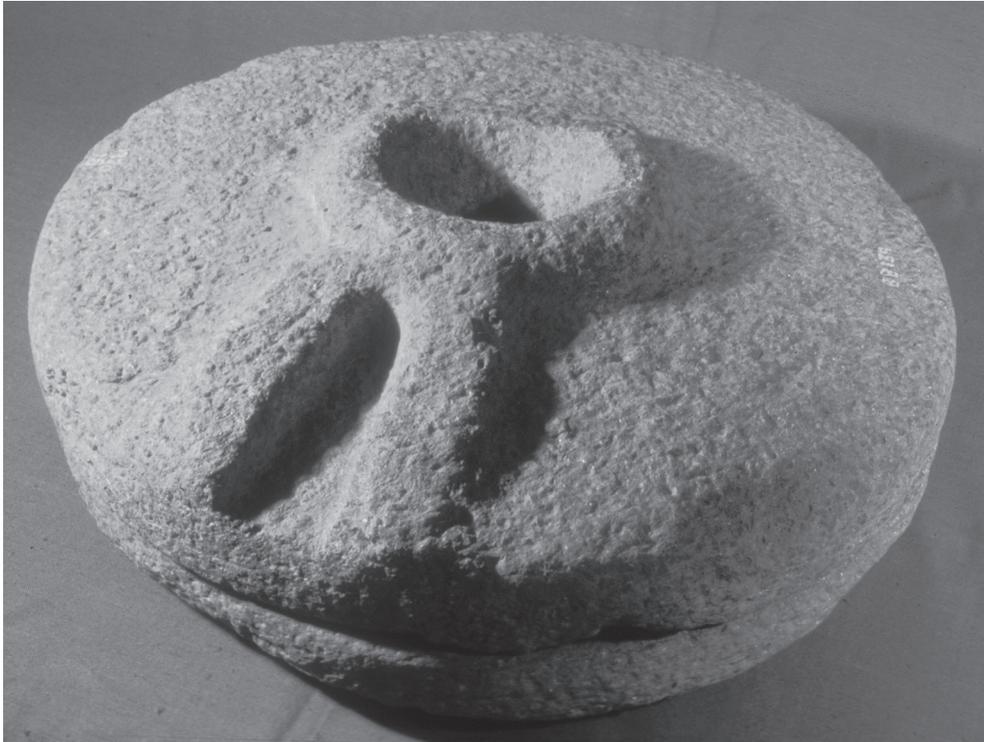
regionality and use.¹ But first we shall consider the evidence of quern manufacture.

QUERN MANUFACTURE

In contrast to southern Britain, Scotland apparently lacks centralised production sites. With the prevalence of hard-rock geology throughout the country, most sites appear to have had reasonably local access to suitable raw material for quern stones, and there seems to be no dominance of single source rocks comparable to the Millstone Grits of Yorkshire (Hayes et al 1980; Wright 1988: 68; Heslop 2008: 34–42) or the Sussex Greenstones (Peacock 1987). It is worth drawing attention to a handful of

quern stone ‘quarries’, where roughouts were carved from outcrops, in Western Scotland; at Minard, Loch Fyne, Argyll & Bute (DES 1968: 3; Fane Gladwin 1971: 3–5), Heisgeir, North Uist (Carmichael 1870: 283), Achamore, Gigha (RCAHMS 1971: 209), Loch Roe, Assynt (Close-Brooks 1995: 37) and Rubha nam Brathairean, Skye (Roddie Mainland pers comm). These are not closely dated and are generally assumed to be late or post-medieval, but merit more detailed study.

Because of this abundance of local resources, the import of non-local quernstones appears rare in Scotland; ongoing geological examination by Fiona McGibbon indicates that most have been produced from local stone. A programme of more detailed analysis is required to identify



ILLUS 1 Typical horizontal slot-handled quern. Example from Netherton of Comisty, Aberdeenshire (NMS: BB 139). © Trustees of the National Museums of Scotland

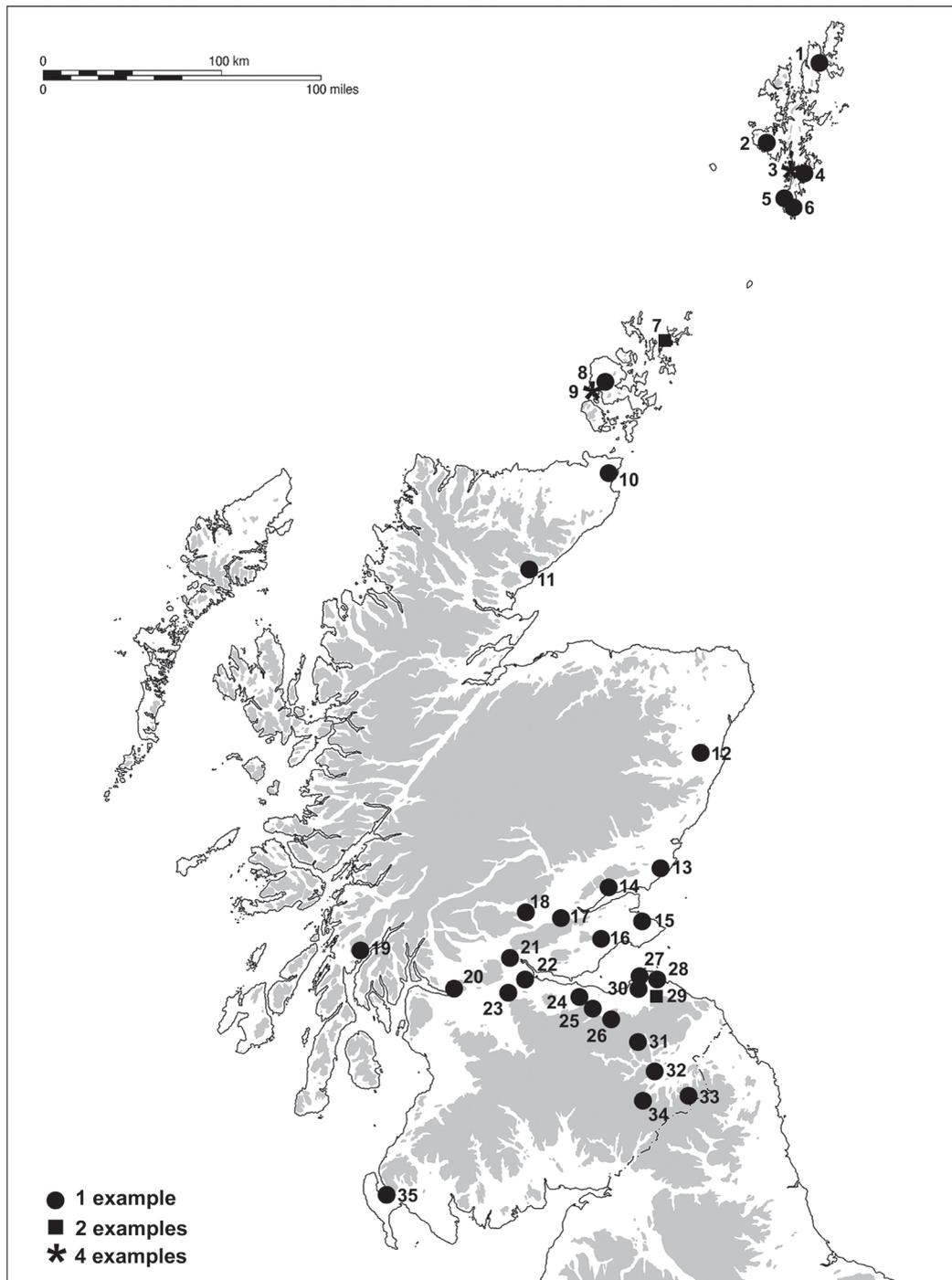
TABLE 1
Provisional list of unfinished rotary quernstones. * denotes two examples

<i>Site Name</i>	<i>Region</i>	<i>Reference and notes</i>
Carlungie	Angus	Wainwright 196: 144, fig 43, no. 145
West Mains of Ethie	Angus	Wilson 1980: 121, no. 15; NMS HH 924
Dun Mor Vaul, Tiree	Argyll & Bute	MacKie 1972: 140
Dunadd*	Argyll & Bute	Lane & Campbell 2000: 185-6 (cat nos 511 & 2228)
Druim an Duin	Argyll & Bute	Christison et al 1905: 292
Inchmarnock	Argyll & Bute	Franklin 2008: 189, 191
Woodend Farm, Johnstonebridge	Dumfries & Galloway	Banks 2000: 258.
North Berwick Gas Works	East Lothian	Unpublished, NMS BB 104
Phantassie	East Lothian	McLaren & Hunter 2008: 161
Crosskirk	Highland	Fairhurst 1984: 270–1
Aldclune*	Perth & Kinross	Cool 1997: 439-40. Re-examination confirms that two unfinished querns are present (SF 31 & SF 79). SF 24 is reinterpreted as a heavily damaged, but worn, example.
Dunion	Scottish Borders	MacSween & Rideout 1992: 100
West Water Reservoir	Scottish Borders	Hunter 2000: 167
Harpercroft	South Ayrshire	Unpublished, NMS BB 125
Castlehill Wood	Stirling	Feachem 1957: 36; NMS HH 589
Unprovenanced	Stirling	Unpublished, Stirling Museum (MacKie pers comm)
Beirgh	Western Isles	Harding & Gilmour 2000: 40

any smaller-scale local or regional movement of querns. There are a few examples of the use of non-local stone, as at Hurly Hawkin, Elginhaugh and Traprain (Henshall 1982: 237; MacKie 2007a: 503; Hunter & McLaren forthcoming) although the effects of glaciation complicate

the study, as much material was circulated as erratics.

Despite this implication of local or on-site manufacture, surprisingly few later prehistoric sites have so far yielded evidence of production (Table 1). This local basis of quern manufacture



ILLUS 2 Distribution of horizontal slot-handled querns. In addition to those shown on the map are four unprovenanced stray finds, two of which are from unlocated find spots in the Shetland Islands

TABLE 2
Horizontal slot-handled querns from Scotland. * denotes examples examined by the writers. SAUUM = Collections of NE Fife District Museum (ex St. Andrews University Museum); GAGM = Glasgow Art Galleries and Museums

<i>Map No.</i>	<i>Site</i>	<i>Region</i>	<i>Context</i>	<i>Quantity</i>	<i>Reference</i>
1	Bayanne*	Shetland Islands	Iron Age–Early Historic	1	Moore & Wilson in prep b
2	Linga*	Shetland Islands	Stray find	1	Anon 1892: 78; NMS: BB 81
3	Burland*	Shetland Islands	Iron Age–Early Historic	4	Moore & Wilson in prep a
4	Scalloway	Shetland Islands	Iron Age	1	Clarke 1998a: 140, fig 88:1
5	Scousburgh, Dunrossness*	Shetland Islands	Stray find	1	Unpublished; Shetland museum: ARC 65446
6	Scatness	Shetland Islands	Iron Age	1	Dockrill et al 2001: 18
7	Lambaness*	Orkney Islands	Iron Age	2	Anon 1892: 237; NMS GH 24 & 25
8	Near Corrigall	Orkney Islands	Stray find	1	Unpublished; E MacKie pers comm
9	Howe	Orkney Islands	Iron Age	4	Ballin Smith 1994: microfiche F6
10	Everley broch	Highland	Iron Age	1	MacKie 2007b: 463, illus 7.124
11	Kintradwell broch*	Highland	Iron Age	1	Anon 1892: 240; NMS: GL 91
12	Netherton of Comisty*	Aberdeenshire	Stray find	1	<i>Proc Soc Antiq Scot</i> 103 (1970–1): 244; NMS: BB 139
13	West Grange of Conon	Angus	Stray find	1	Coutts 1971: 178, fig 179
14	Mill Farm*	Angus	Stray find	1	Unpublished; NMS: BB 134

TABLE 2 (continued)
 Horizontal slot-handled querns from Scotland. * denotes examples examined by the writers. SAUUM = Collections of NE Fife District Museum (ex St Andrews University Museum); GAGM = Glasgow Art Galleries and Museums

<i>Map No.</i>	<i>Site</i>	<i>Region</i>	<i>Context</i>	<i>Quantity</i>	<i>Reference</i>
15	St Andrews	Fife	Stray find	1	Unpublished; SAAUM 1977.2785
16	Balbirnie	Fife	Stray find	1	Unpublished; SAAUM 1977.2790
17	Rossie, Forgandenny	Perth & Kinross	Stray find	1	DES 2003: 107
18	Strageath*	Perth & Kinross	Roman	1	Frere 1989: 186, fig 97:14
19	Crarae	Argyll & Bute	?IA-EH find in Neolithic tomb	1	Scott 1961: 15, fig 11
20	Drumry	Glasgow City	?medieval	1	Unpublished; NMRS: NS57SW28, GAGM
21	Near Stirling	Stirling	Unknown	1	Unpublished; NMS: unregistered
22	Bonnywood Farm	Falkirk	Stray find	1	Buchanan 1912: 367–9
23	Bar Hill*	East Dumbartonshire	Roman	1	Robertson et al 1975: 45
24	Cramond Campus*	City of Edinburgh	Roman	1	Goeder in prep
25	Merehiston Tower*	City of Edinburgh	Stray find	1	Close-Brooks 1983: 218; NMS: BB 9–10
26	Elginhaugh	Midlothian	Roman	1	MacKie 2007a: 503, fig 10.61 no. 8
27	Gullane*	East Lothian	Stray find	1	<i>Proc Soc Antiq Scot</i> 101 (1968–9): 293; NMS: BB 136
28	Seacliffe*	East Lothian	Iron Age	1	Anon 1892: 246; NMS: HD 112
29	Traprain*	East Lothian	Iron Age	2	Close-Brooks 1983: 214; Unpublished; NMS: GV 1048

TABLE 2 (continued)
 Horizontal slot-handled querns from Scotland. * denotes examples examined by the writers. SAUUM = Collections of NE Fife District Museum (ex St Andrews University Museum); GAGM = Glasgow Art Galleries and Museums

<i>Map No.</i>	<i>Site</i>	<i>Region</i>	<i>Context</i>	<i>Quantity</i>	<i>Reference</i>
30	Mungoswells Farm*	East Lothian	Stray find	1	Unpublished; NMS: BB 143
31	Stow*	Midlothian	Stray find	1	Close-Brooks 1983: 218; NMS: BB 131
32	Newstead*	Scottish Borders	Roman	1	Unpublished; NMS: FRA 1651
33	Hownam Rings	Scottish Borders	Roman Iron Age	1	Piggott 1948: 216
34	Clarilaw, St Boswells*	Scottish Borders	Stray find	1	<i>Proc Soc Antiq Scot</i> 33 (1898-9): 141; NMS: BB 92
35	Port William Area (Selby Collection)*	Dumfries & Galloway	Stray find	1	Unpublished; Stranraer museum
n/a	Unlocated site*	Shetland Islands	Stray find	2	Unpublished; Shetland museum: ARC 65651 & ARC 7596
n/a	Unprovenanced*	Unprovenanced	Unknown	1	Anon 1892: 77; NMS: BB 39
n/a	Unprovenanced*	Unprovenanced	Unknown	1	Unpublished; NMS: unregistered

might be expected to give rise to regional trends and clusters of quern types which we hope to explore in the course of this paper.

HORIZONTAL SLOT-HANDLED QUERNS

At the recently excavated Iron Age/Early Historic site of Burland in Shetland (1st century BC–10th century AD), six rotary quern stones were recovered (Moore & Wilson in prep a): four disc quern uppers with U-sectioned horizontal handle slots, one disc quern lower, and a bun quern upper. Three of the disc querns were decorated. Disc querns are typical for the Atlantic Iron Age, but the Burland querns present a number of interesting and unusual features, notably the presence of horizontal slot handle fittings and decoration.

Four of the Burland disc querns have horizontal slotted handle sockets sunk into the surface, sometimes with raised mouldings around them. These are unusual in Scotland, as disc querns normally have vertical handle sockets. The practicalities of these horizontal slots are not totally clear (illus 1). In some cases they are slightly undercut, which would allow the handle to be slotted in and fixed in place, with the slight lip gripping it. This would permit a projecting, extended handle to be operated beyond the diameter of the quern (eg Shaffrey 2003: 152, fig 6), making it more efficient to turn, especially if worked with a vertical pole fitting at a distance (cf MacKie 1987: pl 1).

Yet those without such a lip could not be used in this way: without the undercut socket, the inserted handle would have been loose, with any downward pressure beyond the edge of the quern causing it to lift. This suggests that it was used with a vertical handle fixed into a non-projecting horizontal bar set into the slot, the downward pressure from the handle providing a secure fitting. Can any functional difference between the open U-shaped slot and undercut examples be determined? It might be thought that the raised ridges around the slot would

stabilise the handle, but there is no consistent correlation; under-cut and open slots are both found on querns with and without raised ridges. Nor does there seem to be a regional preference for the open or under-cut socket. Could the lack of under-cutting be due to excessive wear? Although there is considerable variation in the degree and depth to which slots were under-cut, some were so distinct that it is unlikely everyday wear alone would be able to degrade or remove them. The distinction between slots that are open and under-cut is therefore real: both under-cuts and ridges were possible strategies to stabilise the handle, but they may reflect different handling systems, with the former suitable for a projecting handle. This form of horizontal handle slot appears to be confined to disc querns, some of substantial size. In some upper stones, the handle slot is more distinctly V-shaped, with the wooden handle wedged into the socket to prevent it from lifting out of the slot during use (eg Shaffrey 2003: 152, fig 6).

Although not the normal handling system for disc querns, it was clearly in widespread use. Some forty-seven widely scattered examples have been identified in Scotland to date (illus 2; table 2) with a mainly east coast distribution (predominantly from Tweed to Tay) and a separate northern concentration, with a cluster of ten examples known from Shetland. It clearly also saw use farther south, although this information has not been collated (eg Curwen's Wessex and Sussex types (1937: 142) and examples from Iwer, Buckinghamshire (Curwen 1937: pl II, 5), Oldbury Flats on the Severn Estuary (Allen & Fulford 1992: 118–19, illus 26, 2) and Priddy, Somerset (Burrow et al 1982: 22–3, fig 3)). Comparatively rare northern English examples are also known (eg Castleford, West Yorkshire and Catterick, North Yorkshire (Buckley & Major 1998: 244–5, no. 12; Wright 2002: 274, fig 355)).

Dating, as ever, is not straightforward. Many of the Scottish examples are stray finds, while those from settlement sites tend to be from secondary contexts, often reused as paving slabs or built into walls. This makes the date of these

querns in the north and their relationship with more southerly examples unclear. Several come from Roman forts, while a stratified example from Traprain Law (Close-Brooks 1983: 218, fig 97: 7) has a *terminus ante quem* of the early centuries AD. The Burland querns had been reused as paving slabs and structural elements with a *terminus ante quem* of the 7th century AD for their use; one example, reused as a hearth base in a metalworking deposit has a *terminus ante quem* of 200 BC–AD 400. Unusually, some of the horizontal slot-handled querns have slots for a rind in the perforation, normally in the upper part of the socket. Close-Brooks (1983: 218) notes that ‘the provision for a rind on these particular Scottish querns may be due to the influence of Roman military types, with their fixed rinds across the top’. This is consistent with the find from Priddy in Somerset, associated with Romano-British pottery and dated to the later 1st century AD (Burrow et al 1982: 23). This all

points to the type’s currency in the Roman Iron Age, but how far before and after this it extended is currently unknown.

Many of the horizontal slot-handled querns are decorated, ranging from a simple peck-marked groove encircling the feeder pipe and handle socket to ornately decorated examples with a series of concentric bands encircling the hopper and lines paralleling the handle. All are variations on a general theme focused on a collar encircling the hopper and the handle slot. Both are present at Burland, and it is noteworthy that this concentric decoration is closely paralleled on two other Shetland sites, from nearby Scalloway (Clarke 1998a: 140) and Bayanne, Yell (Moore & Wilson in prep b). A higher proportion of this type of quern appears to have been chosen for decoration than the more common, vertical-handled querns.

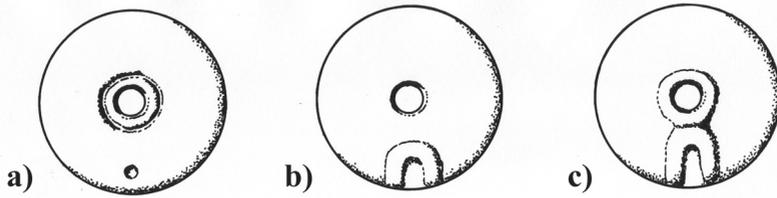
Horizontal slot-handled querns are clearly more common in Scotland than previously

TABLE 3

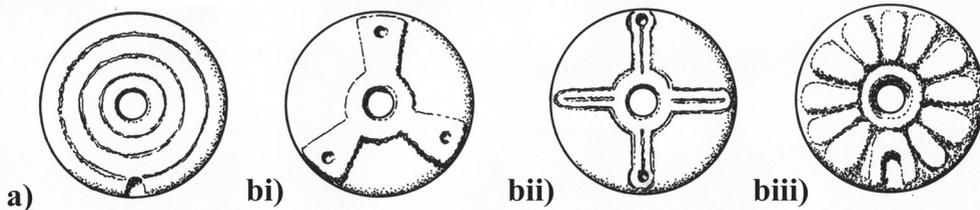
Range of decoration on Scottish rotary quern stones. *Type 2 querns can sometimes also encompass elements of embellishment of functional aspects, eg pecked groove around feeder pipe. Dating evidence is based on examples from contexts

<i>Classification</i>	<i>Quantity</i>	<i>Dating Evidence</i>
Type 1: embellishment of functional aspects		
a) collar	11	Iron Age → ?medieval
b) handle	1	Later Iron Age
c) combination	17	Iron Age → Early Historic
Type 2: decorative development of functional features*		
a) concentric	10	Later Iron Age → Early Historic
b) radial		
i. 3 handle radial	4	All stray finds; iconographic evidence suggests post-medieval date
ii. quadrants with two or four handles	4	Roman Iron Age
iii. multiple radial	12	Iron Age → Early Historic
Type 3: Cupmarks	3	Iron Age
Type 4: Combinations and oddities	2	Iron Age → Early Historic

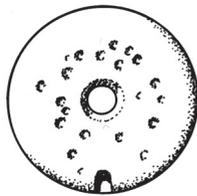
TYPE 1



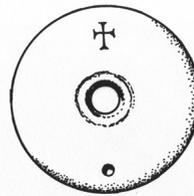
TYPE 2



TYPE 3



TYPE 4



ILLUS 3 Scheme for decoration on querns. Illustration by Alan Braby

recognised and appear to be a widespread type. Although regional clusters are present, such as the group from Shetland, the general lack of regionality of this quern type is striking and it was clearly widely used. A few stratified examples point to a Roman Iron Age date, but it is currently unclear how far their use extended beyond this period. Subtle variations are present in the form of the handle slots (eg undercut or open sockets and raised ridges) which indicate different solutions to stabilising the handle. In contrast to other quern types, a high proportion of these querns are decorated and the significance of this is worth exploring further.

DECORATED QUERNS

Despite the common occurrence of rotary querns on Iron Age and later settlement sites, decorated examples are rare; only sixty-three Scottish examples are known to the writers, from a dataset of hundreds (appendix 1). The definition of decoration can be contentious, as in the case above of the slot-handled quern where decorative ridges can be seen to mirror or develop from a functional feature. Is it possible to determine where functionality stops and aesthetics begin? Some aspects of decoration are worth exploring further.

Decoration is confined to the upper surface of upper quern stones only. Detailed examination of the motifs used in Scottish rotary quern decoration has shown that four main decorative schemes were used (table 3; illus 3). The first consists of an elaboration of existing functional features, and focuses on the collar and handle socket. These can comprise either raised or pecked decoration around the collar only (type 1a), handle only (type 1b), and a combination of collar and handle embellishment (type 1c). Many querns have a raised area around the feeder pipe (type 1a) but this was probably intended to create a deeper hopper for practical reasons; we have not counted these with our decorated totals, restricting this to those with non-functional pecked decoration or a collar some distance from the hopper. The second type can be seen as a development of type 1, where the features of the collar and/or handle are developed decoratively. One development focuses on concentric decoration, developed from the idea of the feeder pipe and collar (type 2a). The other uses radial decoration, plausibly inspired by handle slots (type 2b). Within the radial decorative scheme a further three sub-types exist: those with three raised wedge-shaped radii, with three handle sockets; those with four radii (and two or four vertical handle sockets); and multiple radial embellishment. Type 3 has cupmarked decoration, perhaps developing from vertical handle fittings, while type 4 combines the other styles and is also a catch-all for a few oddities which fall outwith this scheme. An appendix lists examples known to the authors.

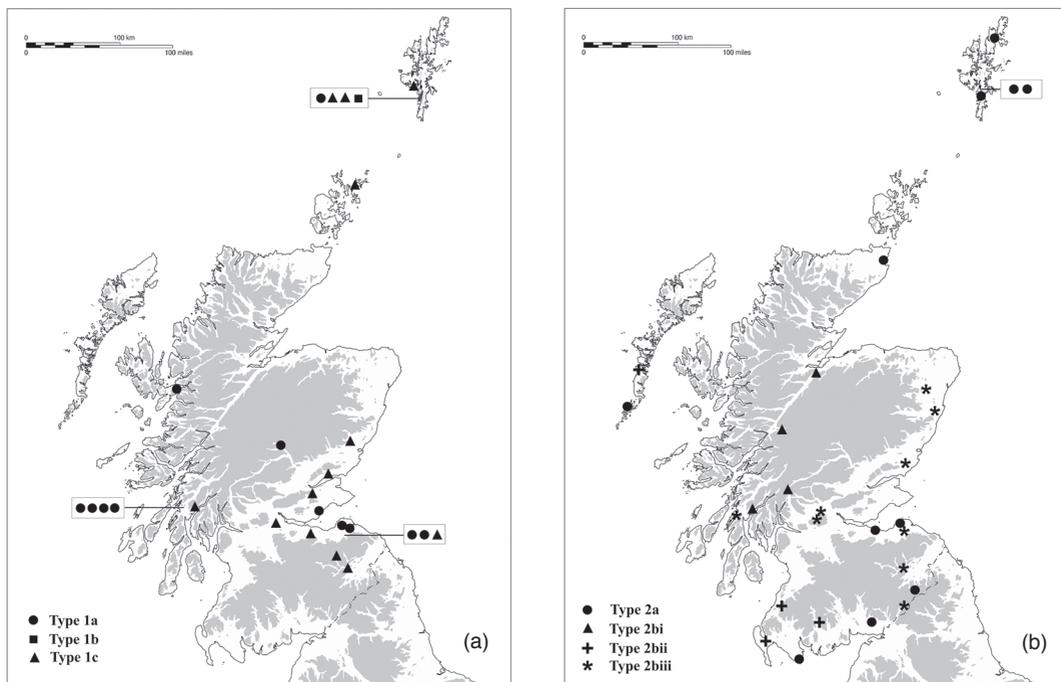
Within each type, the decoration can vary from simple pecking to ornate raised decoration. This is well illustrated by type 2a querns with concentric decoration varying from simple pecked or concentric embellishment to ornate examples such as those from Burland, Shetland and Whithorn, Dumfries and Galloway. Unfortunately, the Whithorn fragment (Nicholson 1997: 460, fig 10.120:10) only provides tantalising clues as to its full decoration but it appears to have a series of concentric

peck-marked and raised grooves encircling a large feeder pipe that taper in and converge on a projecting vertical handle socket. Although the details are unique, it fits within the general theme of Scottish quern motifs described above.

Ornate examples with multiple handle-sockets also appear to be both decorative and functional. Type 2bi has three evenly spaced vertical handle sockets around the edge of the quern. Here, each of the sockets sits on a raised wedge which joins a raised collar around the feeder pipe. In the Arknish example, raised collars are also present around each of the handle sockets and around the edge of the quern itself. These querns appear to be post-medieval; a similarly decorated disc quern is shown in use in an engraving by Moses Griffiths who accompanied Thomas Pennant on his tour to the Hebrides in 1772 (Pennant 1776). Although these multiple-socketed querns are decorative, a functional aspect to their design may be suggested. It may be that after centuries of rotary quern use, it was well established that handle sockets wore out and would have to be replaced. Perhaps the initial manufacture of multiple sockets would allow varied use of the sockets and slow down the wear process, as well as having a decorative effect.

A similar practice can be seen on a decorated quern from Traprain which will be considered in more detail later. Here four handle sockets are present; two diametrically opposed horizontal conical sockets and two corresponding vertical sockets positioned directly above each of the horizontal examples. The interior surface of each socket is smoothed from use, indicating that all were functional rather than purely decorative. Interestingly, neither of the horizontal sockets has worn through to the grinding surface (often the purpose behind the addition of a further handle socket); neither have the vertical sockets worn down into the horizontal sockets directly below. Again, alternating use of the handle positions to prolong the life of the quern is suggested.

An upper quernstone from the Balmaclellan hoard in Dumfries and Galloway (Murray 1862:



ILLUS 4 (a) Distribution of type 1 decorated querns. In addition to those shown on the map are two stray type 1c querns from Shetland whose exact find spot cannot be located, one unprovenanced type 1a quern and two unprovenanced type 1c querns; (b) distribution of type 2 decorated querns; (c) distribution of type 3 decorated querns; (d) distribution of type 4 decorated querns



294) is another ornately decorated example corresponding to type 2bii. Here the central feeder pipe is surrounded by a narrow raised collar; radiating out from this are four double raised lines, dividing the surface of the quern into quarters. Similar stones from Stranraer (*Proc Soc Antiq Scot* 1879: 173), Benbecula (unpublished; NMS BB 24–5) and an example from near Barr, Ayrshire (unpublished; NMS L.1957.10) are known; in these cases the decoration was incised and lacked false handle sockets.

Interestingly there are no querns with La Tène style decoration in Scotland even though examples are known from England, Ireland and Wales (eg Daventry, Northamptonshire, Ticooly-O’Kelly, County Galway, Clonmacnois, County Offaly and Tre-Anna, Anglesey (Roe pers comm; Raftery 1983: fig 183 a & b; Griffiths 1951: Pl 7: 10)). Such curvilinear motifs are completely lacking from the Scottish examples. Most of the La Tène decorated examples are beehive querns, a rare type in Scotland, but a bun-shaped example from Northern Ireland (Raftery 1983: fig 184d) suggests that the absence of these motifs on Scottish querns is real and not a reflection of choices in quern type.

REGIONAL STYLES?

Some of these decorative styles appear to be regional (illus 4a, b, c & d), particularly examples with cupmarked decoration (type 3), tri-radial decoration (type 2bi) and those whose upper surface is divided into quadrants (type 2bii).

Type 1: embellishment of functional aspects

Type 1 decorated querns show a similar distribution to slot-handled querns, with concentrations on the east coast (Tweed–Tay) and the Northern Isles. A further cluster of type 1 decorated querns, particularly those of type 1a, comes from Mid-Argyll. The paucity of such decoration in the north, particularly the Highland zone, suggests that this absence may be real and reflective of different decorative choices.

Type 2: decorative development of functional features

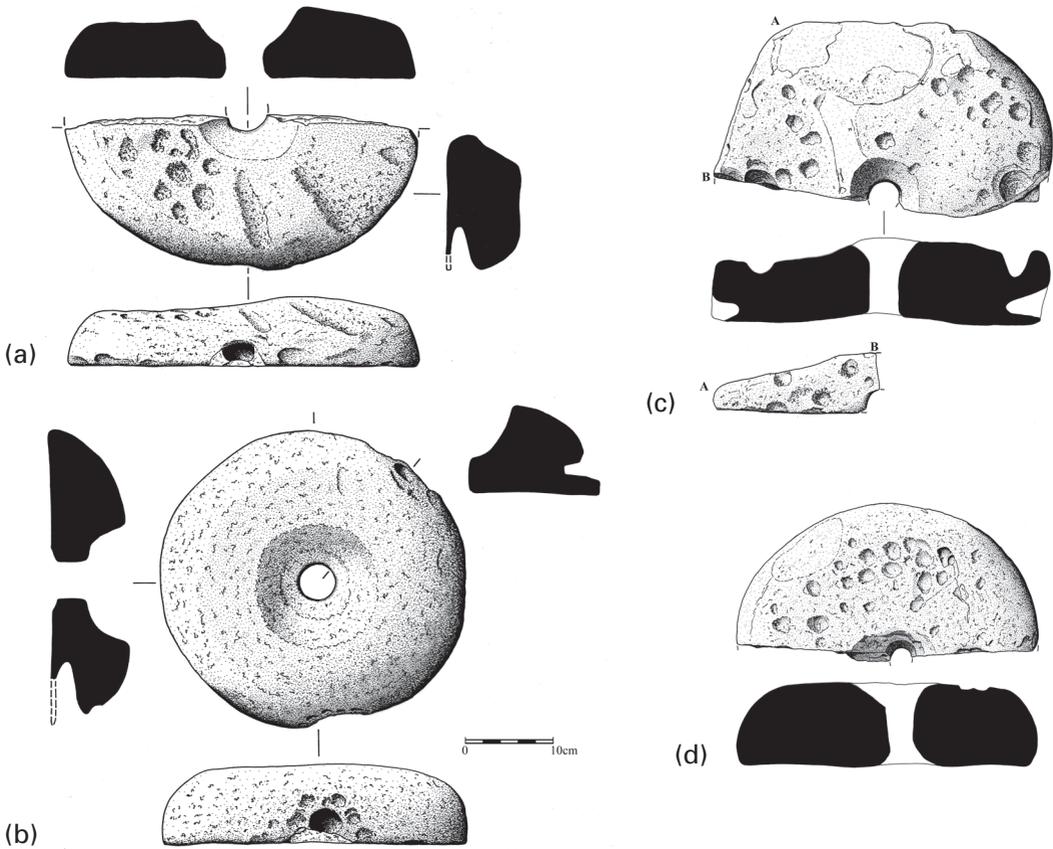
Querns with concentric decoration (type 2a) lack any distinctive patterning, being found throughout southern Scotland, on the west coast and in Shetland (illus 4b). In contrast, querns with type 2bi decoration have a clear West Highland distribution and those of type 2bii display a clear concentration in the south-west with one outlier in Benbecula. Although querns with multiple radial decoration (type 2biii) are widely scattered throughout Scotland, they have a general east coast trend.

Type 3 & 4: cupmarked decoration & oddities

Excavations in East Lothian in advance of expansions to the A1 revealed a later prehistoric settlement at Phantassie from which several rotary quern stones were recovered (McLaren & Hunter 2008: 161). Although this in itself is not unusual, a high proportion were decorated, with three out of five finished querns having decorative features (illus 5a & b): a pecked band around the feeder pipe to create a low collar, circular hollows around the handle socket, radial lines, raised areas and circular hollows. The latter is particularly noteworthy, as while individual features can be paralleled, the combination of radial lines and peckmarked hollows appears to be unique. This corresponds to type 4 decoration (illus 4d). However, there are three other local examples of bun-shaped querns with cup-marked decoration (type 3, illus 4c); another from the same site, one from Traprain Law (illus 5c) and a third example from Broxmouth (illus 5d) [both unpublished; in NMS]. Although the decoration is not exactly the same on each, this related decorative style suggests a regional type.

WHY DECORATE?

Evans’ paper on decoration in the Iron Age has highlighted the restricted range of materials that were chosen for ornamentation, particularly pottery and metal objects. He suggests that these



ILLUS 5 Examples of querns with cupmarked decoration from East Lothian: (a) SF 563 Phantassie, (b) SF 72 Phantassie,* (c) Traprain, (d) Broxmouth. Scale 1:8. Illustrations by Alan Braby

materials may have been ‘specifically selected for decoration because of their plastic qualities and were strategically utilised as media of style and expression’ (1989: 185). His study has shown the range of Iron Age decoration to encompass simple linear geometric patterns, complex linear motifs and distinct curvilinear, organic shapes. These are almost entirely lacking from the motifs chosen for use on querns, although a similar range of simple linear decorative motifs *was* used on Iron Age spindle whorls (eg Bac Mhic Connain; Hallén 1994: 214, illus 10: 6).

The initial investment of manufacturing or procuring a quern produced from such

durable material combined with its potential long life suggests that querns would be worthy candidates for decoration. The deliberate fragmentation of some stones (Heslop 2008: 68–72) and the frequent deposition of querns (both fragmentary and complete) within significant or special contexts (eg Sollas; Campbell 1991: 144) reinforces the idea that querns were important items. Fenton notes that even in the late 17th century in Orkney, rotary querns were considered as valuable household items both in monetary and economic terms and were sometimes recorded in Testamentary Inventories (1978: 389). Decoration could thus

* This quern was wrongly identified as SF 155 in the original publication.

be a marker of status or value. It is also possible that these objects were chosen to be decorated due to their transformative properties, turning grain into flour, and for their role as a symbol of agricultural productivity and fertility (Hingley 1992: 41). It is clear that the designs chosen highlight not only the shape but the movement of the querns, perhaps transforming the shapes themselves with the rotation of the upper stone.

In Griffiths' discussion of decorated rotary querns from Wales and Ireland, he attributes the presence of decorated clusters to distinct clans or tribes (1951: 55). While there are some regional groups in Scotland, as noted, in general the distributions are too diffuse to support this idea in the north. The similarities of motifs used on querns and stone spindle whorls could hint at a significance to the raw material itself, but the lithologies are so diverse that it is difficult to see a connection between the status of the object and the source of the material.

The reason why some querns were selected for decoration may simply be a question of individual choice; an attempt to personalise the quern. Yet the range of motifs used on Scottish rotary querns is restrictive and suggests that there was an established and limited pattern of motifs that were acceptable for use on these objects, and which were copied, adapted and enhanced. The limited range of motifs suggests that such designs held further meaning and would have been recognised as such to those observing the stones in use. Why only selected querns were marked out as special is unclear but their embellishment by decoration suggests that the motifs enhanced the significance of the stones, perhaps also increasing their value and importance.

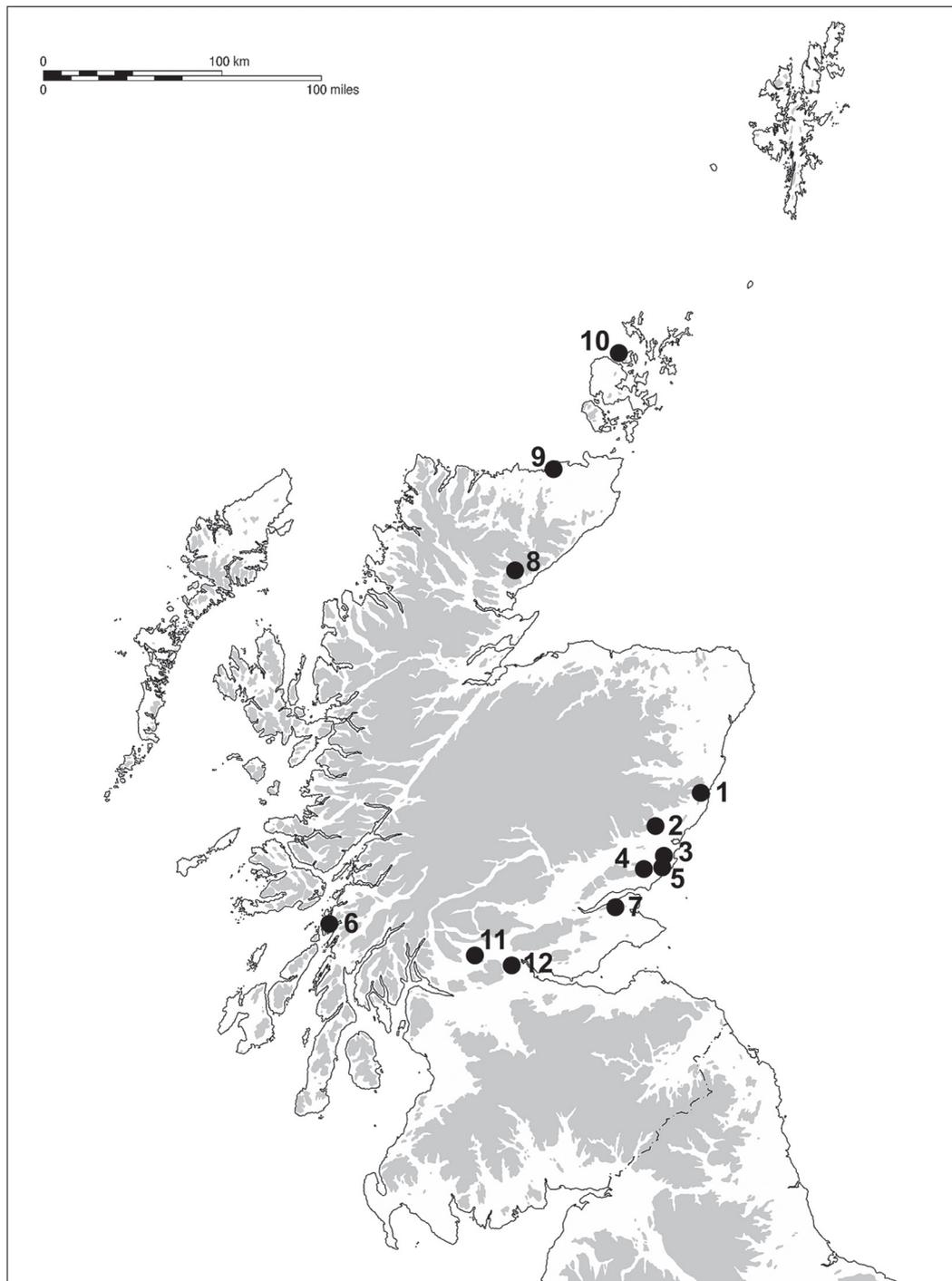
IRON AGE MINIATURE QUERNS

Another type which merits further attention is the miniature quern. Prior to the recovery of two examples from a settlement site at Hawkhill in Angus, only one example, from Hawkhill in

Fife, had been recognised (Driscoll 1997: 101). The new finds stimulated a reappraisal of the form, and it is now clear they are a relatively common type which had simply not been noted previously. This is unsurprising, as without careful attention to wear patterns only the uppers are distinctive, and they could easily be misinterpreted as weights. Identified examples are all less than 200mm in diameter. They range in condition from carefully dressed to very roughly shaped. A review of publications and NMS collections has identified fifteen examples, mainly from eastern Scotland (Forth–Mounth) with a small northern cluster (illus 6; table 4). They appear to represent a regional type.

All are miniature disc querns, consistent with the predominant local type. They are mainly upper querns, seven with vertical handle sockets, again reflecting the local tradition. One, from Strathbora in Sutherland, has a low raised collar around the hopper, consistent with some full-scale disc querns from the area (eg Kintradwell Broch, Sutherland; NMS GL 91; cf Heald 2004: 70). In general, these miniature querns appear to reflect the form of the full-sized versions (illus 7).

The dating of these miniature querns is not certain: the well-stratified Hawkhill (Angus) quern was reused in a possible Early Historic posthole, while the Fife site is not tightly dated, but the general range of the other sites is Roman Iron Age, and provisionally this seems the most likely date bracket. The Crosskirk example was recovered from the extra-mural settlement below late paving attributed by Fairhurst (1984: 128, SF 672) to the medieval period but it is likely that the quern derives from the broch or post-broch period. Wear traces show that they were clearly utilised and an obvious interpretation would be as children's toys or to grind some particularly valuable substance. They can be contrasted with Norse miniature 'toy' querns (eg Jarlshof, Shetland; Stummann Hansen & Larsen 2000), which are part of a suite of miniature objects from the site identified as toys, such as miniature fishing weights and steatite bowls.



ILLUS 6 Distribution of miniature querns

TABLE 4
Miniature querns from Scotland

<i>Map No.</i>	<i>Site</i>	<i>County</i>	<i>Condition</i>	<i>Reference and notes</i>
1	Kinneff	Aberdeenshire	Complete upper	Unpublished; NMS: BB 98
2	Dalladies	Aberdeenshire	Complete upper	Watkins 1980: fig 20a
3	Hawkhill	Angus	2 fragmentary examples (SF 21 & 26). One is from upper stone	Rees forthcoming
4	West Grange of Conon	Angus	2 complete upper stones	Anon 1892: 245, HD 40–1
5	West Mains of Ethie	Angus	Complete upper	Wilson 1980: 121, fig 4 no. 13; NMS: HD 921
6	South Fort, Luing	Argyll & Bute	Complete upper and lower	<i>Proc Soc Antiq Scot</i> 32 (1897–8): 371; NMS: HR 484 & 485
7	Hawkhill	Fife	Fragmentary ?upper	Driscoll 1997: 101
8	Strathbrora	Highland	Fragmetary upper	Heald 2004: 70
9	Crosskirk Broch	Highland	Complete lower	Fairhurst 1984: 131, illus 82: 672. An additional quern (no. 126) is catalogued as 150mm diameter, but this is a heavily damaged full sized quern: Fairhurst's dimensions record the existing dimensions, not the original size.
10	Wasbister	Orkney	Fragmentary upper	Unpublished; NMS: BB 137
11	Fairy Knowe	Stirling	Fragmentary upper	Clarke 1998b: illus 35, no. 1
12	West Plean	Stirling	Complete upper	Steer 1956: 246 no. 2, pl xviii; NMS: HD 1767

These querns faithfully copy specific details of full-sized quern forms, but are much smaller in size than the Iron Age examples (generally between 50–100mm in diameter) and typically lack any evidence of practical use. The Iron Age miniature querns represent a quite different

tradition, and although use as children's toys is not impossible, the rarity of child-centred material culture during this period suggests a more functional interpretation is appropriate. It seems likely that these early miniature querns were used to grind small quantities of seeds,



ILLUS 7 Selection of miniature querns from Scotland. (*Top row*: South Fort, Luing (NMS: HR 485), Dalladies (NMS: Unregistered); *middle row*: West Grange of Conan (NMS: HD 41 and HD 40), West Mains of Ethie (NMS: HD 921); *bottom row*: Wasbister (NMS: BB 137); West Plean (NMS: HD 1767)). Copyright Trustees of the National Museums of Scotland

herbs or minerals, perhaps for medicine, drugs or the preparation of pigments. The small diameter of many feeder pipes indicates they were not being used to grind grain. Residue analysis may ultimately clarify their use.

CONCLUSION

This brief study of rotary quern use in Scotland, stimulated by recently excavated examples, has identified several previously unrecognised patterns that highlight both regional traditions and wider patterns of quern use in the later prehistoric

and Early Historic period. An alternative handle fitting on disc querns, the horizontal slot handle, was clearly in widespread use; subtle differences in form may indicate different handling systems, including a projecting handle for some. While there are clusters in the Northern Isles and south-east Scotland, their distribution is widely scattered. Miniature querns, a type not previously recognised in the later prehistoric record, are now known from several Iron Age settlement sites, with a predominantly eastern distribution. A growing corpus of decorated Scottish querns is starting to reveal hints of regional patternings and concentrations of particular decorative

APPENDIX 1
Decorated querns from Scotland

<i>Site</i>	<i>Region</i>	<i>Reference</i>	<i>Type</i>
Dunadd	Argyll	Christison & Anderson 1905: 208, 210, fig 29	1a
Dunadd	Argyll	Lane & Campbell 2000: 185, illus 4.92: 2221	1a
Dunadd	Argyll	Lane & Campbell 2000: 185, illus 4.92: 2226	1a
Phantassie	East Lothian	McLaren & Hunter 2007: 161, fig 7.17, no. 508	1a
Prora, Drem	East Lothian	PSAS 99, 1967: 266; NMS: BB 135	1a
Traprain	East Lothian	NMS: unregistered	1a
Kirkcaldy	Fife	Anon 1892: 77; NMS BB 40	1a
Dun Troddan	Highland	NMS: GA 1279	1a
Aldclune	Perth & Kinross	NMS: unregistered (cat no. 80, small find 2)	1a
Clickhimin	Shetland Islands	NMS: GA 949	1a
Unprovenanced	Unprovenanced	NMS: BB 93	1a
Burland	Shetland Islands	Moore & Wilson in prep b	1b
Mill Farm, Invergowrie	Angus	NMS:BB 134	1c
Crarae	Argyll	Scott 1961: 15, fig 11	1c
Newstead	Scottish Borders	Unpublished: NMS, unregistered	1c
Traprain	East Lothian	Close-Brooks 1983: fig 97:7	1c
Merchiston Tower	Edinburgh	Anon 1892: 76; NMS: BB 9 & 10 (lower)	1c
Bonnywood	Falkirk	Buchanan 1912	1c
Stow	Midlothian	NMS: BB 131	1c
Lambaness	Orkney Islands	Curwen 1937: 147	1c
Burland	Shetland Islands	Moore & Wilson in prep b	1c
Burland	Shetland Islands	Moore & Wilson in prep b	1c
Linga	Shetland Islands	Anon 1892: 78; NMS: BB 81	1c
Sandsting	Shetland Islands	Shetland museum: ARC 65651	1c
Unprovenanced	Shetland Islands	Shetland museum: ARC 7596	1c
Unprovenanced	Unprovenanced	Anon 1892: 76; NMS: BB 11	1c
Unprovenanced	Unprovenanced	NMS: BB 140	1c
Dalladies	Aberdeenshire	Watkins 1980: 157–9, fig 21	1c

APPENDIX 1 (*continued*)

Decorated querns from Scotland

<i>Site</i>	<i>Region</i>	<i>Reference</i>	<i>Type</i>
The Camp, near Pitlour House	Fife	Anon 1892: 77; NMS: BB 28	1c
Dunadd	Argyll	Lane & Campbell 2000: 185, illus 4.92: 2224	2a
Dun Cuier	Western Isles	Young 1956: 324, fig 16: 55	2a
The Camps, Edgerston	Scottish Borders	NMS: BB 113	2a
North Berwick gas works	East Lothian	NMS: BB 104	2a
Edinburgh Castle	Edinburgh	Clarke 1997: 124, illus 114	2a
Bayanne	Shetland Islands	Moore & Wilson in prep a	2a
Burland	Shetland Islands	Moore & Wilson in prep b	2a
Scalloway	Shetland Islands	Clarke 1998a: 140, fig 88: 1	2a
Scalloway	Shetland Islands	Clarke 1998a: 140, fig 88: 2	2a
Whithorn	Dumfries & Galloway	Nicholson 1997: 460, fig 10.120:10	2a
Birrens	Dumfries & Galloway	PSAS 30: 78; NMS: FP 68	2a
Arknish forest, Loch Fyneside	Argyll	NMS: BB 133	2bi
Roy Bridge	Highland	Anon 1892: 78; NMS:BB 80	2bi
Glenfalloch	Perth & Kinross	NMS: BB 97	2bi
Laggan	Highland	Anon 1892: 75; NMS: BB 5	2bi
Balmaclellan	Dumfries & Galloway	Anon 1892: NMS: BB 7	2bii
Stranraer	Dumfries & Galloway	PSAS 13: 172; Anon 1892, 75; NMS: BB 6	2bii
Benbecula	Western Isles	Anon 1892: 76-7; BB 24-5	2bii
near Barr	Ayrshire	NMS: L.1957.10	2bii
Kirkton of Bourtie	Aberdeenshire	DES 2002: 8, fig 1	2biii
West Grange of Conon	Angus	Coutts 1971: 78, no. 179	2biii
Dunadd	Argyll	Lane & Campbell 2000: 185, illus 4.92: 2222	2biii
Whitehillsheil	Scottish Borders	Hawick Museum: HAKMG 4289	2biii
Nybster	Highland	Anderson 1901: 141, fig 21	2biii
Traprain	East Lothian	NMS: GV 1497	2biii
Finty	Stirlingshire	Anon 1892; NMS: BB 1	2biii

APPENDIX 1 (*continued*)

Decorated querns from Scotland

<i>Site</i>	<i>Region</i>	<i>Reference</i>	<i>Type</i>
Leckie Broch	Stirlingshire	GAGM: SF 40	2biii
Newstead	Scottish Borders	NMS: FRA 1651	2biii
West Cults	Aberdeenshire	Marischal museum (A210:1a 17165)	2biii
Broxmouth	East Lothian	NMS unregistered	3
Phantassie	East Lothian	McLaren & Hunter 2007: 161; this paper illus 4b	3
Traprain	East Lothian	NMS unregistered	3
Dunadd	Argyll	Campbell 1987: 105–6, illus 1	4
Phantassie	East Lothian	McLaren & Hunter 2007: 161; this paper illus 4a	4

styles; La Tène decoration as found in Ireland and Wales is lacking from the Scottish record, with the parallels lying instead on other domestic items such as spindle whorls. Decoration may have been an indication of status and/or may have had a symbolic role. The habit of quern decoration was widespread and long-lived, with some examples being post-medieval in date.

This ongoing investigation into Scottish rotary quern use suggests that the picture is more complex than previously understood and highlights the need for further study. As Euan MacKie has long argued, this humble and overlooked artefact type has much still to tell us, and there is a great need for a series of detailed regional studies.

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NOTE

- 1 Throughout this paper, we draw on a review of published and unpublished finds; there will undoubtedly be further examples in museum collections we have not yet assessed, but we feel the broad patterns are representative.

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