

Quern replacement and the origin of the brochs

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Ever since the brochs of the Atlantic Province captured the interest of antiquarians in the last century one of the unanswered questions has been the area in which this unified building and defence tradition originated. In modern studies archaeologists such as Childe (1935) and Hamilton (1968) argued that the concentration of brochs in the northern sub-Province indicated that there was the most likely area of origin. MacKie (1965; 1971; 1972) has however argued in a number of papers that the origin of the brochs lies in the west where they developed under the stimulus of southern English migrants arriving in the Hebrides in the 1st-century BC. As evidence of this immigration one of the new exotic artefacts which MacKie derives from the Wessex area is the flat rotary querns which he contrasts with the Beehive querns of Southern Scotland and which he sees as clear imports from the south of England. It is intended to deal elsewhere with the absence of any link between the querns of Wessex and those of the Hebrides and the implications of this for the English migrants hypothesis. However a study of the more fundamental contrast between brochs with saddle querns and those with rotary querns appears to offer a better basis for establishing the claim of the western or northern area within the Atlantic Province as the area of origin of the broch. One of the merits of the quern as an object of study in this regard is that it is probably the most imperishable and ubiquitous artefact associated with the brochs.

The use of the quern as an indicator of chronological differences between sites in Scotland goes back to the beginning of this century. The excavation report of forts on the Poltalloch Estate, Argyll, in 1904 strikingly illustrates what is one of the major technological changes of the Iron Age (Christison 1905). Two photographs (figs 11 and 29 in that report) are of the quernstones from two of the forts excavated, namely Duntroon and Dunadd (p1 8a-b). The importance of the photographs is that all the stones from Duntroon are saddle querns while only three out of 50 from Dunadd were of this type. The significance of this contrast was not lost on the excavator who wrote:

Can the vitrified forts be differentiated in date from the ordinary hillforts? . . . The relics found at Duntroon are suggestive. It is certainly remarkable that in the four forts in the district excavated by us . . . while all the thirty-six querns discovered there, were of the saddle type, of the fifty found at Dunadd, only three were of that type and all found at Ardufiar and Druim an Duin were rotary querns (Christison 1905, 279).

Christison is here suggesting that the construction and occupation of Duntroon predates the other sites on the evidence of the archaic saddle quern and the absence of the more modern rotary one. It is difficult to disagree with Christison's view for the following reasons. The rotary quern is

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not a mere new artefact occurring sporadically among sometimes conservative communities; it represents instead a major technological changeover in the processing of cereals. It could be looked on as one of the major technological advances of the Iron Age second only to the introduction of iron itself. While it replaced a process with more than a two-thousand year history in these islands it was the inception of a process which continued down to the present day (Ryan 1972, 68). The product of the rotary quern was so superior both in control of quality and output that it is not surprising that it appears to have replaced the archaic process fairly rapidly.

'Quern Replacement' meaning the changeover from the saddle to the rotary quern is a universal phenomenon of the Iron Age in these islands and is potentially of value for establishing a relative chronology among monument types or within geographical regions. A question which will have to be discussed later is the Replacement Phase – the period during which both types may have remained in use together. But whether this Phase lasted a year, decades or centuries it is possible to recognise pre-Replacement and post-Replacement sites such as Christison did at Poltalloch.

In Atlantic Scotland it appears at first glance that the situation is much too confused to allow for sites to be assigned pre- or post-Replacement. Stone forts and brochs in this province have yielded large numbers of both rotary and saddle querns. There is a further complication that most finds of querns from this region come from old excavations where stratification was seldom closely observed and objects from many periods were not isolated. The numerous broch excavations of the last century are particularly at fault in this regard. Nonetheless it is possible to glean some valuable information from the reports of these early excavations. Detailed examination of the context of the querns from modern excavations taken with general trends which emerge from the earlier works show the Quern Replacement phenomenon to be clearly recognisable in the broch context. In fact just as Christison observed for the Poltalloch forts, Quern Replacement has been identified and commented on in some broch excavation reports.

Craw (1934, 286) was the first to point to Quern Replacement in the excavation of Gurness broch where he noted that all the saddle querns came from the primary level while the rotary were all from the secondary level. Scott (1947, 29, n 2) however wrote that 'the classification of the many unpublished querns from brochs would be valuable for chronology' but while he refers to the Gurness evidence and mentions rotary querns from Dun Troddan and Dun Telve he makes no attempt to establish Quern Replacement for the brochs in general. In a subsequent paper (Scott 1948, 109, n 1) he concerned himself with the saddle/rotary occurrence in brochs and other structures but seemed to accept that no pattern of occurrence could be recognised.

It has been possible to get information from the published literature on the occurrence of querns in forty-three brochs throughout the entire broch area. Much of the information is a bare reference to rotary and/or saddle querns occurring among the finds from particular brochs which is all one usually gets from the earlier excavation reports. There are however a number of modern excavations such as Dun Mor Vaul (MacKie 1974) and Jarlshof (Hamilton 1956) where the fullest detail is available on the exact context of the querns. These sites, taken with overall trends apparent from the earlier excavations show clearly the reality of Quern Replacement in the brochs as a whole.

Brochs with Querns

The brochs have been divided into five regions, Shetland; Orkney; North Scottish Mainland; West Coast and Hebrides; South Scottish Mainland; and they have been listed in the order of publication in the different regions.

Shetland

- 1 Levenwick (Goudie 1872)
p 213 'A portion of a quern was found among the debris and fragments of bones but no other remains.'
- 2 Clumlie (Goudie 1889)
p 253 'The stones now exhibited are the only specimens of human manufacture found with the exception of some querns and grain rubbers discovered closeby some years ago.'
- 3 Jarlshof (Hamilton 1956)
Because of the earlier excavations (Bruce 1907), finds within the broch were rare and no querns are recorded. One of the earliest post-broch structures, the aisled house beside the broch, had a number of saddle querns and rubbers. One fragment of rotary quern from this building in an ambiguous context has caused some controversy. Discussed more fully below.
- 4 Clickhimin (Hamilton 1968)
Clickhimin, like Jarlshof had occupation at many periods from Bronze Age to Viking times. Large saddle querns were found in a pre-broch fort. A number of saddle quern rubbers came from within the broch. The earliest occurrence of the rotary quern at Clickhimin was in a late roadway dating to the post-broch wheelhouse period.

Orkney

- 5 Hoxa (Thomas 1852)
(from an account supplied by a Mr Robert Heddle)
p 121 'Round the interior circumference of the broch wall are set upright flagstones from three feet and a half to seven feet in height. . . . Between the bases of each pair of upright flagstones was found a corncrusher of primitive simplicity. Each consisted of two pieces of sandstone, one slightly hollowed on the upper surface, the other smaller and horizontally convex below. These implements were buried in rude boxes composed of flagstones set together. . . . They are various in shape and size being however more or less oblong. The lower stones are between eighteen inches and two feet in length while the upper ones which may be grasped in the hand do not exceed half that dimension'.
- 6 Borwick (Watt 1882)
The broch had been altered by the building of a wheelhouse within it on many feet of occupation debris. Among the finds were:
A large assortment of mullers, different sizes.
A few broken mortars.
Parts of querns.
- 7 Burrian (Traill 1890)
p 364 Finds from the first occupation.
'Stones for grinding; many.
Pieces of three querns'.
- 8 Stirlingo (Petrie 1890)
p 87 Finds: 'Portions of a quern'.
- 9 Harray (Petrie 1890)
p 88 'I have not seen all the relics found in this building but they include stone vessels of the usual rude form, remains of stone querns and stone and bone implements.'
- 10 Ayre (Graeme 1914)
p 38 List of relics: Stone
Five flat rotary querns.
'Top and bottom stones of flat rocking or saddle type.'
- 11 Gurness (Craw 1934)
p 286 'Regarding relics, all the saddle querns came from the primary level and the rotary all from the higher levels.'
- 12 Midhowe (Callander & Grant 1934)
Twelve saddle and eight rotary querns came from this broch excavation. Details of the findspots of all except two saddle querns are given.
Saddle and rotary querns came from within the broch. Saddle querns alone came from the outer and inner ditch. If the outer works at Midhowe do not predate the building of the broch this could indicate that the broch's construction was pre-Replacement.

North Scottish Mainland

- 13 Kettleburn (Rhind 1853)
 Finds: 'The upper stone of a quern, formed in the usual manner, that is with one perforation for the axis and another for the insertion of the handle. Broken portions for three other querns were likewise found; and in fact few if any "Pict Houses" have been opened which have not contained rude handmills of this description.'
- 14 Yarhouse (Anderson 1890)
 p 135 'In the floor of the central area of the broch we found a granite rubbing stone nearly two feet long; its flat face was well worn. Noticing another granite stone built into the inner wall about half way up we pulled it out and found it to be also a rubbing stone which had been used as a building stone.'
 p 140 'Of rude mortars and rubbing stones we found nearly a dozen.' In a later reference (the account above was read in 1871) he states specifically 'no querns were found but about a dozen grain rubbers' (Anderson 1883, 230).
- 15 Carn Liath (Joass 1890)
 p 105 Finds: 'About a dozen querns inside and outside some more modern in form than those of Kintradwell'.
 While Joass fails to mention saddle querns from this site, Young (1962, 182) writes that 'both saddle and rotary querns from the broch are shown in Dunrobin Museum'.
- 16 Craig-Carril (Joass 1890)
 p 108 Finds: . . . 'Fragments of querns'.
- 17 Cinn-Trolla (Joass 1890)
 p 102 Finds: 'Querns and rubbing stones, about fifty including fragments'. Illustrated pl 11. The measurements of seven rotary querns from this broch are given in another paper. (Joass 1872, 53).
- 18 Ousedale (Mackay 1892)
 p 354 'At about four feet above the real floor were found traces of a second occupation probably after the tower may have been partly in ruins, seven partitions of large slabs set on end being found at this level. . . . The following articles were found amongst the ashes on the (primary) floor and throughout the building . . . several very rude mica schist querns, some of which are broken; stone mullers, stone hammers or pounders generally much abraded at one end'.
- 19 Wester (Anderson 1901)
 p 121 'The objects found included . . . an upper stone of a quern and several saddle querns.'
- 20 Keiss (Anderson 1901)
 p 127 Finds: 'Several grain rubbers or saddle querns and three upper stones of circular rotary querns'.
- 21 White Gate (Anderson 1901)
 p 130 'The only other objects found were a few grain rubbers and portions of rotatory querns.'
- 22 Road Broch (Anderson 1901)
 p 138 & fig 19. 'Finds included . . . twelve upper and lower stones of rotatory querns, two large under stones of saddle querns and several fragments of others.' The form of the rotary querns from this site is discussed below.
- 23 Nybster (Anderson 1901)
 p 142 'The articles found include several portions of quernstones and saddle querns and an upper stone of a rotatory quern ornamented with radial grooves or flutings but without a central perforation.'
- 24 Everly (Anderson 1901)
 p 143 'In this broch were found . . . three or four quernstones and two grain rubbers.'
- 25 Ness (Anderson 1901)
 p 143 'Objects found were . . . three quernstones.'
- 26 Freswick Sands (Anderson 1901)
 p 144 'Objects found were . . . one or two quernstones.'
- 27 Skirza Head (Anderson 1901)
 p 144 'Objects found included . . . two quernstones.'
- 28 Coghill (RCAHMS Caithness 1911)
 No 469, p 129 'The ruin was excavated by Dr Anstruther Davidson in 1905 and a number of relics

were found in it. These consist of . . . numerous stone pounders, rubbing stones, thin discs of shale . . . Querns are represented by remains of the saddle variety only.'

- 29 Skitten (Calder 1948)
p 140 and fig 5, 139 Five rotary querns were found together with 'a waterworn boulder, approximately 16" x 15" x 5" thick, rubbed to a slightly concave face by use as a saddle quern'. Three grain rubbers were also found on the site.
- 30 Achvarasdal House Broch (MacKie 1972)
p 140 'A quern lay inside the broch. It is difficult to date the stone precisely since it is more than probable that the broch was used in common with many others in Caithness as a domestic dwelling after it ceased to be used as a fort and this secondary phase of use may have continued for many centuries.'

West Coast and Hebrides

- 31 Dun Carloway (Oldrieve 1909)
p 145 'Two quernstones from the broch of Dun Carloway, Lewis.'
- 32 Dun an Iardhard (MacLeod 1915)
p 67 'The objects in stone include . . . a perforated quernstone.'
- 33 Dun Telve (Curle 1916)
p 254 'Seven quernstones and two broken pieces were found all belonging to circular rotary querns.'
- 34 Dun Beag (Callander 1921)
p 121 Finds: 'The complete upper stone of a rotatory quern and ten other fragments of upper and lower stones of similar querns'.
- 35 Dun Troddan (Curle 1921)
p 90 'Some nine inches above floor level there were found at one or two places small deposits of bright yellow clay. From the same level came the segment of the upper stone of a quern showing a perforation on the upper surface to hold a handle.'
- 36 Dun Osdale (MacKie 1972)
MacKie argues strongly that the position of the quern on top of the rubble of this almost certain broch implies that it was used as a building stone and therefore predates the broch.
- 37 Dun Mor Vault (MacKie 1974)
One of the five rotary querns from Dun Mor Vault predates the construction of the broch. It was found in a low level inside the broch and appeared slightly to ante-date the construction of the tower.
- 38 Rhirhoy Semi-Broch (MacKie 1972)
p 141 'The quern was evidently in use during the earlier fort period.'
- 39 Dun Ardtreck Semi-Broch (MacKie 1972)
Dun Ardtreck was destroyed by fire in Iron Age times, its wall was then dismantled and it was used as a dwelling for a long period. The debris of the burning lay on the primary floor of the interior and included parts of two shattered and heated rotary querns.

South Scottish Mainland

- 40 Tapock (Torwood) (Lefroy 1867).
p 43 'One pair of quernstones and three single stones turned up among the debris.' The illustration on p 43 appears to also show a saddle quern. There is an oval stone shown in the illustration of the broch facing p 41. Stones illustrated Feachem 1957, fig 11.
- 41 Teroy Fort (Curle 1912).
p 187 'The upperstone of a rotary quern also came to light.'
- 42 Torwoodlee (Piggott, S 1951).
A rotary quern was found deep in the ditch of the pre-broch hillfort and it was clear from the stratification that the silting of the ditch had taken place before the construction of the broch.
- 43 Leckie (MacKie 1972)
The upperstone of a rotary quern was found inside the ruined broch, lying on top of the lower of two dark occupation layers under dry rubble.

The excavation of Jarlshof needs further discussion as it shows clear evidence of occupation and multiple reconstruction before the introduction of the rotary quern. This site can be said to give the most unequivocal evidence of broch construction and occupation in a pre-Replacement context. Because of the earlier excavation at this site (Bruce 1907) little material was preserved within the broch itself. The important structures are the structurally later aisled house and wheelhouse adjacent to the broch. Excavation showed that the defensive wall accompanying the broch was partly demolished prior to the building of the aisled house. This latter structure was itself altered after a period by inserting stone pillars in place of wooden roof supports. Following this the aisled house was abandoned, and a wheelhouse was built which utilised two bays of the aisled house as an entrance porch.

The evidence for Quern Replacement was as follows:

Rubbers of saddle querns came from within the broch. Six saddle querns and nine rubbers came from the primary floor level of the aisled house and there was also one fragment of rotary quern from this structure. Three rotary querns came from the wheelhouse as well as two rubbers of the obsolete type.

The fragment of rotary quern from under the secondary level within the aisled house has been the subject of some controversy. Hamilton (1956, 59) ignores it and assigns the introduction of the rotary quern to the builders of the wheelhouse some time later. Clarke (1970, 219) quotes Hamilton on this while MacKie (1971, 69) has rightly pointed to the single example of a rotary quern within the earlier aisled house. The excavation report makes it clear that the rotary quern came from below the secondary flooring in chamber I of the aisled house. However at the same level there were also a number of sherds of Class 2 pottery which is a new pottery type strongly associated with the wheelhouse. It is obvious that some wheelhouse material is stratified *below* the secondary paving and the rotary quern is therefore not out of its wheelhouse context. The numerous saddle querns and rubbers throughout the aisled house indicate that it was constructed and occupied prior to the Quern Replacement.

All this places the building of Jarlshof broch considerably earlier than this Replacement. Following the building of the broch and courtyard wall the latter was partly demolished presumably following a change in the conditions which inspired its construction in the first place. Over part of the demolished wall, a round house was built with internal wooden posts used as rafter supports. Later still the posts were replaced by stone pillars and this aisled house was occupied for a period until it was abandoned and the wheelhouse built. This entire building sequence prior to the wheelhouse was pre-Replacement which places the building of the broch at the beginning of the sequence, considerably earlier still. It is difficult in the light of the evidence from this site to sustain the view that 'the evidence from Jarlshof cannot show that querns did not arrive earlier still (than the aisled house) with the broch because hardly any artefacts were found in the primary broch levels' (MacKie 1971, 69). The saddle querns from the aisled house and the rubbers from within the broch argue against this view (while conceding that one can never prove the absence of an artefact from any monument).

Before discussing the occurrence or absence of saddle or rotary querns among these sites in general it is necessary to say something of the problems of their identification and recording. Rotary querns and fragments were instantly recognised as such even in early excavations because they were similar to the querns still in use in Scotland at that time. Saddle querns on the other hand are difficult to recognise on excavations unless they are complete and have the grinding surface exposed. Discarded saddle querns may also be used later as ideal building stones and would be unidentifiable unless manufactured from a particular type of stone such as happened at Yarhouse.

The identification of the saddle quern as a distinct artefact and its function as an early type of quern was not generally recognised by Scottish antiquarians until late in the 19th century. This is surprising as an interesting paper by Smith (1840) in the first volume of the *Proceedings of the Royal Irish Academy* identified these objects for what they were and referred to them as ‘oblong querns’. In Wales Williams referred thus to finds from Tan Ben y Cevn, Anglesey, in 1852:

‘Great numbers of querns are constantly found in the neighbourhood and large concave stones of a squared form with convex stones which fit on them, apparently a ruder contrivance than the quern for bruising grain and other substances’ (Williams 1852, 210).

In Scotland, Thomas in that same year quoted an account of the excavation of Hoxa supplied by his friend Heddle who described so accurately the corncrushers from Hoxa broch. Ten years later, however, Thomas rejected Heddle’s identification of these objects as corncrushers when he described fragments of two ‘dishes’ from Sands of Rath, Taransay, and commented:

‘It is to be observed that similar stones which my late respected friend Mr. R. Heddle called corncrushers were sepultured in a remarkable manner in a Picts castle at South Ronaldshay, Orkneys. But it is difficult to imagine that so bad a substitute for a mill should be in use, when a quern (parts of which are almost always turned up from the oldest dwellings) would have answered the purpose so much better’ (Thomas 1862, 117).

There is a further difficulty in trying to establish the presence or absence of saddle querns from early excavation reports. Even though the purpose of these objects was recognised by 1840 the term ‘saddle quern’ did not come into general use until more than half a century later. The term ‘saddle quern’ is used in the *Archaeological Journal* for 1867 and in *Archaeologia Cambrensis* for the following year in an article describing the finds from the Ty Mawr hut circles (Way 1867, 246, n 5; 1868, 406, n 1). In Scotland however the older terms ‘corncrusher’, ‘grain rubber’ and ‘rubbing stones’ continued in use until the end of the century. Bennet and Elton refer consistently to ‘saddle stones’ and clearly disagree with the term ‘quern’ being applied to these objects (Bennet & Elton 1898, 74). There has also been some confusion over the names applied to the upper stone of the saddle quern. Way illustrates a complete ‘grinding stone and muller’ in his article on the Ty Mawr finds. This use of the term ‘muller’ to describe the upper stone of the saddle quern has led to the misplacing of at least one broch relative to Quern Replacement. Both Curle (1946, 22) and Scott (1948, 109, n 1) refer to the broch of Ousedale as an example of a site on which rotary querns alone were found. The Ousedale report however refers to stone mullers having been found which must be taken as evidence for saddle querns at this broch.

Thomas (1862) in the article quoted above unwittingly supplies an explanation as to why the saddle querns were not recognised as such in many early excavations. The presence of rotary querns on almost every site at a time when stratification was ignored meant that it would demand especial astuteness to identify ‘so bad a substitute’ as an object which performed the same function as the rotary quern. One benefit however from the failure to identify the primitive form or to use the term ‘saddle quern’ for it, is that reference to ‘querns’ in early excavation reports can with confidence be taken to invariably mean rotary querns.

Thirty of the brochs listed above are in the northern half of the Atlantic Province in Sutherland, Caithness, Orkney and Shetland. Six brochs have saddle querns alone in the primary levels, fifteen brochs have both saddle and rotary querns and nine have only rotary querns. One could interpret these figures to mean that six brochs are pre-Replacement, fifteen were constructed during the Replacement Phase and nine were post-Replacement. There are good reasons however

for suggesting that many of these nine sites without saddle querns were constructed in either pre-Replacement or during the Replacement Phase. All nine northern brochs from which no saddle querns were recorded were excavated during the last century. Six of the excavations were reported on at second hand by Petrie (Stirlingo and Harray), Joass (Craig-Carril) and Anderson (Ness, Freswick Sands and Skirza Head). Petrie states that he did not see all the relics from Harray and his reference to 'stone vessels of the usual rude form - and stone and bone implements' could well include saddle querns. Joass refers only to querns from Craig-Carril but as he fails to mention the saddle querns from Carn Liath which are now in Dunrobin Museum he could equally well have ignored these objects if they were present at this site. Nine brochs excavated by Barry in the Keiss area of Caithness were reported on by Anderson (1901). It is interesting to note that the three brochs in this group from which saddle querns are not recorded are the three final ones in the report. Unlike five of the other six brochs there are no photographs or plans of these three sites and the brief account of these excavations comes to less than three pages. The list of finds from the Barry excavations presented to the National Museum of Antiquities in 1908 shows that many finds from Ness, Freswick Sands and Skirza Head brochs were not referred to by Anderson in his report (Anon 1909, 15-17).

For the reasons put forward above (inadequate early excavations, reporting at second hand on sites, and the failure to identify these objects for what they were), it is a strong probability that some if not all of the northern brochs from which saddle querns are not recorded did have them originally. It should be noted that at none of the nine sites is the absence of saddle querns specifically referred to. On the other hand in the case of five of the six pre-Replacement brochs it was made clear that no rotary querns were found in the primary levels of those sites and at Yarhouse and Coghill no rotary querns whatever were discovered.

There are two interpretations of the sites with both saddle and rotary querns and they depend on the duration of the Replacement Phase. The first interpretation would view Quern Replacement as a more or less immediate changeover once the rotary quern was introduced. The sites with both saddle and rotary querns would therefore also have been constructed pre-Quern Replacement and then continuing or later occupation would account for the presence of any rotary querns. The other interpretation involves treating the Quern Replacement Phase as a relatively long period during which time these brochs were built.

On the face of it, either interpretation seems equally valid but there is some evidence which suggests that the former is more likely and that the northern brochs were built mainly before the introduction of the rotary quern. Where modern excavation has carefully observed the stratification such as at Gurness, Jarlshof and Clickhimin the rotary querns were all seen to be associated with secondary occupation levels and there is little evidence to suggest that the two types were in contemporary use. The quernstones from the Road broch at Keiss (Anderson 1901, 138, fig 19) are also relevant to the question of the duration of the Quern Replacement Phase (pl 8c). Some of these quernstones look suspiciously like re-adapted saddle querns which were converted to lower rotary querns simply by boring holes in their centres. A discussion of the different forms of rotary quern in Scotland does not fall within the scope of this paper but it is worth mentioning that the oval or subrectangular shape of many Scottish examples could be due to a surviving influence of the saddle quern shape. What is important in the context of the present paper is that it suggests that the *idea* of the rotary quern was introduced to an indigeneous population and that once introduced, the saddle querns were immediately considered obsolete. It suggests in fact that the Quern Replacement Phase hardly existed for any length of time and strengthens the argument that the vast majority of the northern brochs were constructed before the rotary quern was introduced to that region.

Turning now to the western end of the Atlantic Province one finds a totally different picture. Only rotary querns are noted from the brochs in this area and here it cannot be argued that saddle querns probably were present but went unrecorded. Apart from Dun Carloway the broch excavations all date to 1915 or later. All except Dun an Iardhard are reports at first hand by the excavators of these sites. By the time they were excavated, the significance of the saddle quern/rotary quern occurrence had been pointed out by Christison at Duntroon. Curle, the excavator of Teroy, Dun Telve and Dun Troddan had previously published a photograph of a saddle quern from his excavation of hut circles at Kildonan (Curle 1911, 26, fig 4) and so he would be unlikely to ignore these objects if they had been discovered in the brochs excavated by him. The modern excavation of Dun Mor Vaul yielded a rotary quern in a pre-broch level and showed that the construction of the broch was some time after the Quern Replacement (MacKie 1974, 138). Unlike the northern sub-province the absence of saddle querns from brochs in the west can therefore be seen to be a real absence.

The area of origin of the brochs whether in the western or northern sub-province has been the subject of some controversy (MacKie 1965) and Quern Replacement is obviously of importance in this debate. All the quern evidence points to the brochs being earlier in the north than the west and suggests that the brochs originated there. Only if one postulates a long time lag between the introduction of the rotary quern into the west and its appearance in the north can one suggest that the western brochs with rotary querns are in general earlier than the northern brochs with saddle querns. Such a time lag implies two relatively isolated regions. The unity of the broch tradition at least implies the transfer of the building tradition from one such isolated region to the other. The only direction in which this transfer could have taken place is from north to west as it is inconceivable that a people with a knowledge of the rotary quern in the west would revert to the use of the saddle quern in the north. Some archaeologists take the view that the unified broch tradition throughout isolated regions of the Atlantic Province was the result of professional broch builders moving among indigenous population groups. But again going on the Replacement evidence, the dispersal of the broch building tradition could only have been from north to west as professional broch builders would be the ideal medium for the introduction of the new stone technology of the rotary quern into the north if the movement had been in that direction.

How the rotary quern was introduced and dispersed throughout Atlantic Scotland and the forms which the rotary quern took is not especially relevant to the topic of this paper. What is important is that the Replacement of the saddle by the rotary quern is a clearly identifiable Iron Age phenomenon in that region. The position of the brochs relative to this phenomenon leads one to the firm conclusion that the broch tradition must have originated in the north and spread from there into the west.

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a Querns from Duntroon



b Querns from Dunadd

c Querns from the Road Broch, Keiss

