Some new quernstones from brochs and duns

by Euan W MacKie

INTRODUCTION

The origin of the rotary quern in Scotland is still not clearly understood although it is generally agreed that it first appeared here in the Iron Age. The first theory put forward was that the oldest querns – the beehive form with a horizontal handle projecting from the side – were introduced to S England from the Continent in pre-Roman times (Curwen 1937). From these flatter, bun-shaped querns were derived which were probably taken northwards by the Roman army after AD 43 as far as S Scotland where they occur, still with the lateral handle, on Roman sites of the second century AD. Many rotary querns have been found in brochs and duns in Atlantic Scotland and without exception the handles of these are in the upright position (these flatter forms are conveniently known as disc querns). Curwen believed that they were a development from the Roman querns of S Scotland and had to be dated accordingly.

Since 1937 several of the primary beehive querns have been found on native sites in S Scotland, showing that the rotary quern diffused into the north in pre-Roman times (MacKie 1971, 52 ff). Recently I suggested a new, dual view of quern origins, based partly on the discovery in 1964 of a disc quern on Tiree in the context datable to the first century BC. This was that the upright-handled, disc querns had been brought directly to Atlantic Scotland from S England together with a number of other items of the late Iron Age B material cultures of that area (MacKie 1971). Disc querns which are clearly datable to the time crucial to this problem – the first centuries BC and AD – are rare but I have discovered several during the past decade which are relevant. The finding of one on an unexcavated broch site in Skye in 1971 prompted these further reflections on the problem of querns.

DUN OSDALE BROCH, SKYE (NG 242464)

During a visit to Dun Osdale, in the parish of Duirinish, in September 1971 in order to plan it I noticed a piece of rotary quern on top of the rubble which fills the interior. A second joining fragment was found close by. Some deductions about the age and context of the quern can be made which make it of more than passing interest.

Description

The two pieces together form about half of the upper stone of a rotary quern of Tertiary basalt with half of the central hole preserved (fig 1, b). No handle hole exists on the pieces found. The original diameter of the stone was from 48 to 49 cm and its maximum thickness is 7·4 cm: the proportion of diameter to thickness is thus 6·55 : 1. The central hole is asymmetrical, about 11 cm in diameter at the top and 4·1 cm at the base, and has the usual funnel

shape. The upper surface of the quern is smoothly convex, or bun-shaped, and the grinding surface is very slightly concave.

The broken surfaces show three different degrees of exposure to the air. Several small fractured surfaces around the edge are dark grey in colour and contrast with the rest of the surfaces which are light grey. These dark-coloured breakages look as if they have occurred relatively recently. The removal for petrological sectioning of a small piece along a pre-existing crack produced the same dark grey surfaces, confirming this supposition. The joining surfaces of the two major quern fragments are much lighter in colour, similar to the rest of the quern, but are much fresher in appearance than the surface which once connected with the now vanished half of the stone.

Context

Dun Osdale is an unexcavated, round, drystone fortlet – full of its own rubble – which stands on a steep, rocky knoll forming the end of a ridge. The structure is almost certainly a broch; the sides of what is probably an upper intra-mural gallery were seen in 1921 (RCAMS 1928, 156–7) though these are not now traceable. Parts of a scarcement of the ledge type are still visible as also is a filled, corbelled mural cell. The fragments of the quern were found close together on top of the rubble which fills the interior and must therefore have reached this position after the broch had almost reached its present degree of dilapidation. A search failed to reveal any more pieces of it.

Two explanations can be put forward for the presence of this half quernstone inside the broch. It could have been brought to the site after the wall was ruined down to its present level and in this case no useful deduction could be made about its age. However, this explanation seems improbable. Why should anyone bring a broken quern to the broch and leave it there? Certainly not to grind grain and the only other reason might be deliberately to 'salt' the site – surely a far-fetched hypothesis for a site in this remote part of Skye. The only other way the quern could have arrived at the position in which it was found is by having been dropped into the wall core with other rubble when the broch was being built and by then falling out again into the interior with other stones at a late stage in the gradual collapse of this wall. The difference in the freshness of the broken surfaces supports this view. Only a broken quernstone would have been used in this way as building material and the oldest break – which split the stone approximately in two halves – would in this view have been the original one which rendered the quern useless. It would have occurred some time before the broch was built judging by the more weathered appearance of this fractured surface. The more recent break – dividing the half stone into its two present pieces – most probably occurred when the stone was thrown down into the wall core. The two pieces were found close together and the joining surfaces are fresh-looking even though they have lost their dark grey colour. Finally the stones could have received a further minor battering when they fell out of the disintegrating wall and tumbled into the interior on top of the rest of the rubble, and this would have produced the dark grey fractures. Because the fragments were on top of the rubble, and in view of the slightly changed appearance of the structure since it was examined fifty years ago (RCAMS 1928, 156–7), the fragments might have fallen out of the wall quite recently. The fact that the Royal Commission's investigators did not see them also supports this view.

DUN MOR VAUL BROCH, TIREE (NM 042493)

Drawings of the two earliest stratified querns found at the broch of Dun Mor Vaul, Tiree (MacKie 1965), are included here for comparison with the Dun Osdale quern (fig 1, d and c).

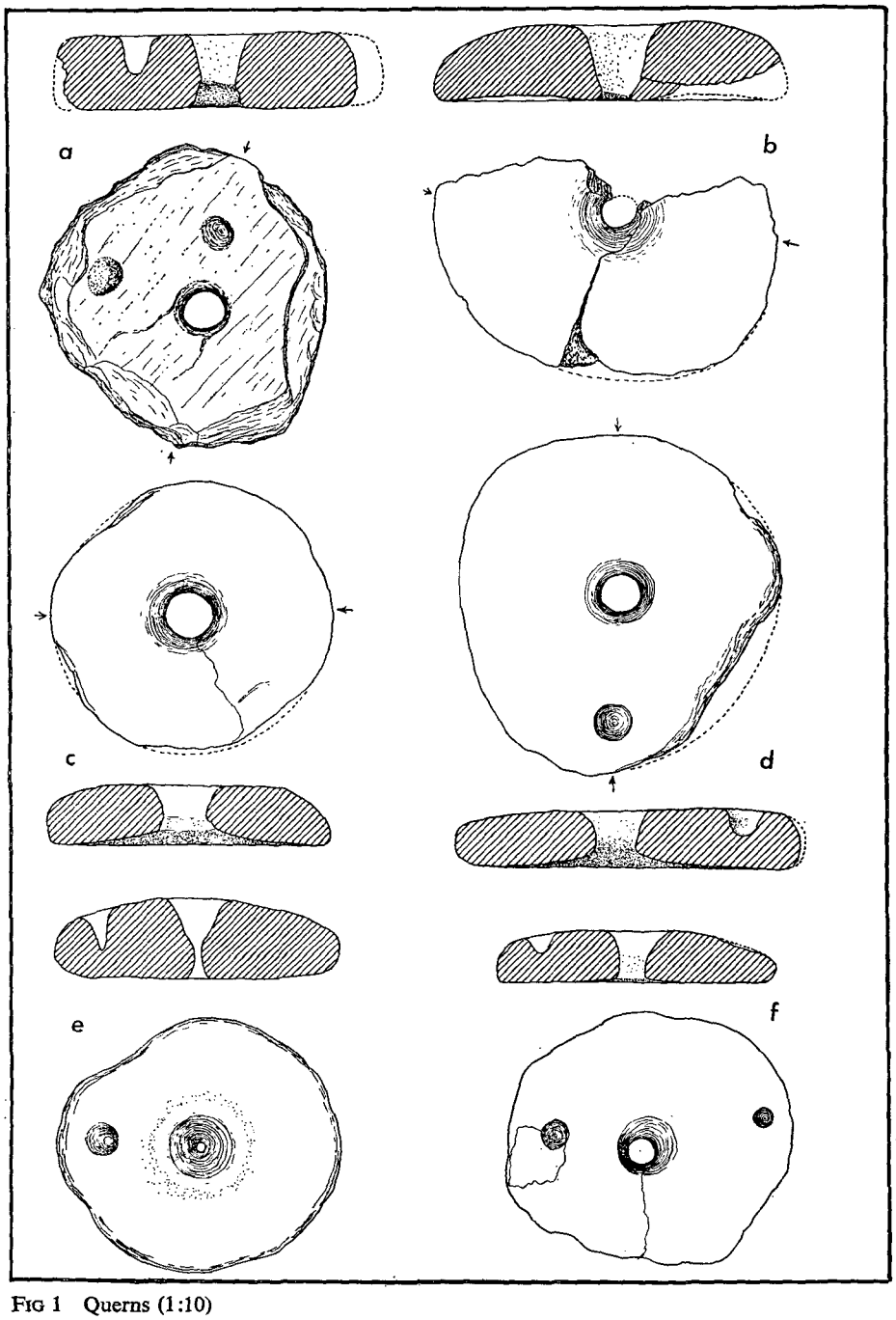

FIG 1 Querns (1:10)

The first was found in a low level inside the broch and appeared slightly to antedate the construction of the tower. A date in the middle of the first century BC seems reasonable if it is acceptable that the broch itself was built in the latter half of that century. It is the complete upper stone of a flat quern with an upright handle socket and made of Lewisian gneiss. The grinding surface is slightly concave but the upper surface is quite flat; the hopper is a simple, funnel-shaped hole. The diameter through the handle hole is 51 cm and 48·5 cm at right angles to this. Part of the edge is broken away but the stone was evidently not quite circular originally.

The second quern, of presumably imported Moine schist, was found in the primary floor of the mural gallery, where it had been incorporated in floor packing when the broch was being constructed (fig 1, c). It is an almost complete upper stone, 37 cm in diameter, with a flat upper surface and slightly rounded edges. The under surface is slightly concave. It lacks a handle hole and is therefore unfinished and unused. A date in the latter part of the first century BC seems reasonable for this stone, assuming the same age for the broch. This quern is similar in shape to that from Dun Osdale.

Two other stratified querns from Vaul are shown (fig 2, l and n). The first is a thick, broken stone, probably of Lewisian gneiss, which was found on the rock floor of the intra-mural gallery where it had come to rest after the broch wall had been pulled down, probably late in the second century AD. It might have fallen out of the wall core then – in which case it would have been in use before the broch was built in the first century BC – or it might have been deliberately dumped in the now open wall gallery. The second explanation seems more probable and, if so, the quern was probably in use late in the primary phase of the history of the broch which lasted from about 50 BC to its demolition late in the second century AD (MacKie 1974).

The fourth quern, also probably of Lewisian gneiss (fig 2, n), dates to the final phase of the use of the broch, probably in the third century. It has a characteristic flat grinding surface and tapered edge and is closely similar to a stone found in the phase 3 levels of the A Cheardach Mhor wheelhouse in South Uist (Young and Richardson 1960, fig 9, 4–6).

ACHVARASDAL HOUSE BROCH, CAITHNESS (NC 983647)

This Caithness broch has been excavated, probably at some time in the nineteenth century, but no records of this work are known to me and no account of the finds which must have been made is available. A quern lay inside the broch and is now in the Hunterian Museum: it is of Cambrian quartzite, the nearest outcrop of which is at Loch Eriboll, 30 miles to the W. 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 had ceased to be needed as a fort and this secondary phase of use may have continued for several centuries. A date at any time between the first and the fourth or fifth centuries AD is equally likely.

The edges of the quern are somewhat battered but the original diameter has probably been about 44·5 cm and the thickness is 10 cm; both the grinding and the upper surfaces are quite flat. The hopper is a simple hole, slightly narrower half way down. There is a deep, cylindrical hole for a loose handle in the top surface and another depression nearby which looks like the beginnings of a second one (fig 1, a).

RHIROY SEMIBROCH, WESTER ROSS (NH 149901)

During the excavation in 1968 of this broch-like fort (Calder and Steer 1948) three querns were found in the clearly stratified interior deposits (MacKie 1968). The earliest was a broken

disc-shaped quern of Moine schist, presumably with an upright handle hole and having a bipartite funnel-shaped hopper leading down to a narrow hole (fig 2, h). It had been jammed into one of the large, primary post-holes in the interior of the semibroch when these were filled up and the site converted to a dwelling. Thus the quern was evidently in use during the earlier, fort period. The third and latest quern, also of Moine mica schist, was found on the top floor complete with its lower stone (fig 2, g): it was apparently in use when the secondary occupation was abruptly ended by the collapse of part of the wall. The stone is different in design from all the others illustrated: there is a distinct collar round the hopper and the grinding surface is markedly conical. It has been much used and the handle hole comes through to the grinding surface. The hole in the lower stone presumably means that the quern was adjustable (Curwen 1937, 144). The date of this quern might be between the second and fourth centuries AD, probably nearer the fourth. The following phase was dated by C14 to the eighth century AD but the semibroch is likely to have been abandoned for some time before that.

The second quern, again of Moine mica schist, is of great interest and is of a form unusual in Atlantic Scotland (fig 1, e). It was used as a paving stone in the lower of the two secondary floors found in the interior and may thus be assumed to have been in use as a quern in the early part of the secondary occupation, and perhaps in the fort period as well. The quern has diameters of from 34·5 to 38·6 cm and is 11 cm thick at the centre. The hopper is markedly bipartite, having a funnel-shaped upper half leading down to an exceptionally narrow hole. The upright handle hole too is uncommonly deep and pointed and it bears none of the signs of polish and abrasion seen in the other examples illustrated here. This must mean that the wooden handle was wedged in immovably so that the user's hand rotated round it as the stone turned. In the other querns shown the symmetrical cup-shaped and striated sockets show that the handle was loose and turned against the stone when used. In these the friction and heat would be more conveniently generated between stone and handle instead of between handle and hand, as in the quern being discussed.

Judging from the C14 dates obtained for samples from Rhiroy (MacKie 1971, 43) this quern could have been incorporated in the secondary floor in the first or second centuries AD or even in the first BC. It was made and used earlier of course, and the fact that the other early quern from this site (fig 2, h) also has the uncommon, narrow, bipartite hopper suggests that both were in use in the primary fort period.

LECKIE BROCH AND DUN, STIRLINGSHIRE (NS 693940)

By the end of 1973 excavations at this Iron Age site, though still at a relatively early stage, had produced enough information for the outline of its development to be reconstructed (MacKie 1974a). The upper stone of a rotary quern (fig 1, f) was found inside the ruined broch, lying on top of the lower of two dark occupation layers under dry rubble (the upper dark layer belonged to a slightly later promontory dun). The stone has been cracked by intense heat and there is abundant evidence that a severe fire swept the interior of the broch just before it was wrecked. A heap of charred grain nearby dated this conflagration to ad 45 ± 120 (GX–2779) and Antonine samian sherds in the same deposit indicated that the broch had been destroyed (and the quern burnt) in the middle or late second century.

This stone, of Dalradian grit, has diameters of from 34·5 to 38·4 cm with a maximum thickness of 7 cm. It has two handle holes, both of which have been used.

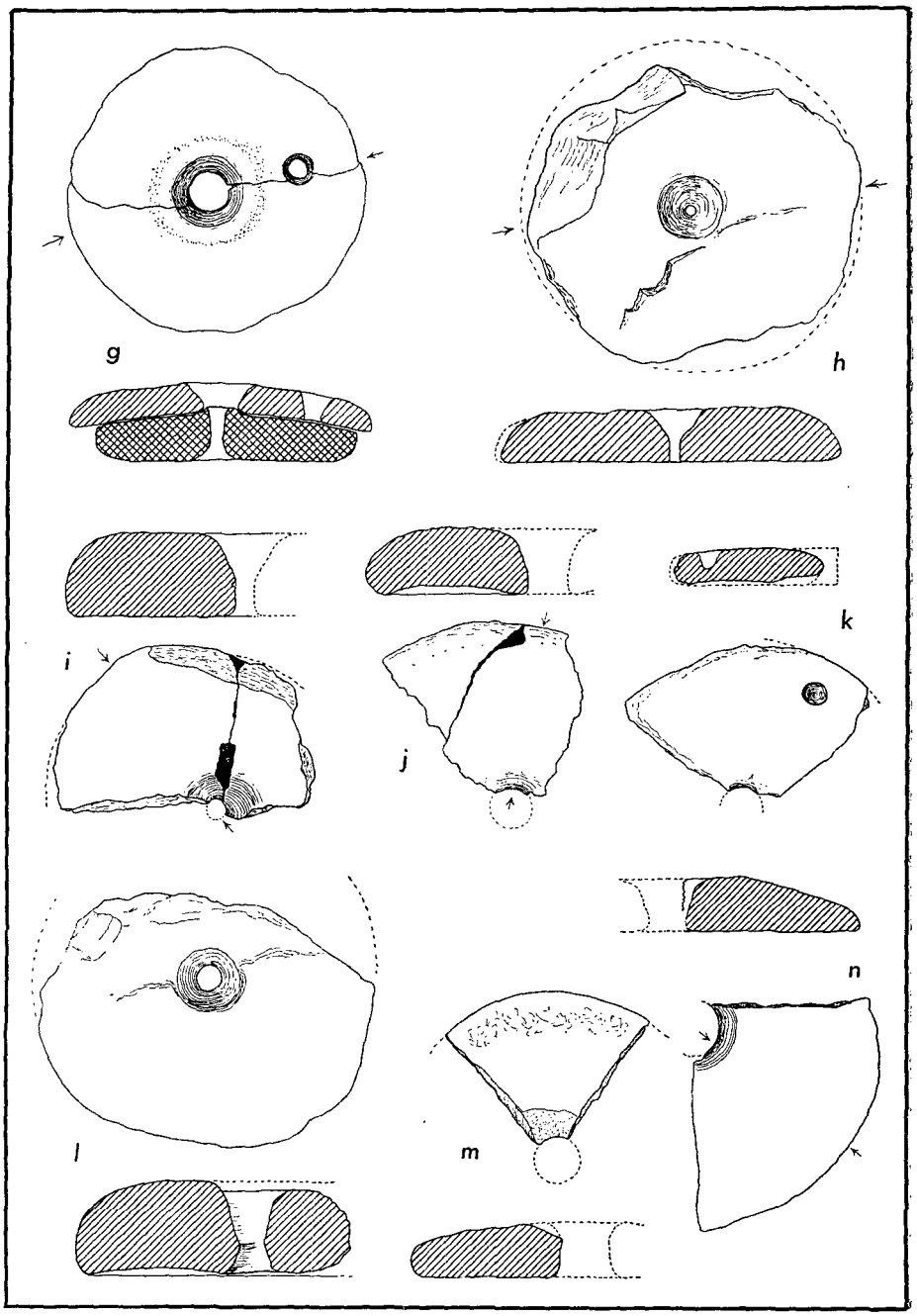

FIG 2 Querns (1:10)

DUN ARDTRECK SEMIBROCH, SKYE (NG 335357)

This fortlet is a D-shaped, gallery-walled structure built on the edge of a cliff and it falls into the semibroch class (MacKie 1965, 104). 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, including partially vitrified sherds, lay on the primary floor of the interior and included parts of two shattered and heated rotary querns (fig 2, i and j). A date for the construction of the fortlet of 55 ± 105 bc (GX–1120) was obtained from a radiocarbon measurement on charcoal from the foundations. The date of the destruction and conversion to a dwelling was supplied by second-century Roman pottery in a stratified context immediately post-dating the fire so the two querns were probably made in the first or second centuries AD.

The first quern (fig 2, i) is of basalt and is badly cracked by heat. The upper and grinding surfaces are parallel, the stone is 11 cm thick and the original diameter was about 48 cm. The similarity to the Caithness quern illustrated (fig 1, a) is striking. The hopper is bipartite but the lower half is not so narrow as in the bun-shaped querns. No handle hole is preserved but the handle can hardly have been other than a loose, upright one. The second quern (fig 2, j), of volcanic agglomerate, is some 9 cm thick and was probably about 48 cm in diameter. It has a convex upper surface and concave grinding surface and is very similar in design to the stone from Dun Osdale (fig 1, b). No handle hole is preserved but again an upright, loose handle seems likely: the hopper is the wide one found in the disc querns.

A third quern from Dun Ardtreck is shown (fig 2, m); it is a quarter of a flat disc of red Torridonian sandstone (perhaps brought from the Broadford area of Skye) with a slightly tapering profile and a broad central hopper. It was found on the surface of, and apparently part of, the rubble ramp leading up to the entrance passage, a feature which was built soon after the burning and demolition of the semibroch. The quern may have formed part of the rubble core of the drystone wall or it may have been in use during the primary phase of the occupation of the site.

DUN LAGAIDH, WESTER ROSS (NM 143913) (Mackie 1968; 1969)

During the clearance in 1968 of the interior of this dun on Loch Broom, Ross and Cromarty, a quarter of the upper stone of a rotary quern was discovered among the mass of sandstone slabs which had collapsed as dry rubble into the interior. There is no doubt that it was incorporated into the core of the dun wall when it was built and its context is therefore comparable to that of the Dun Osdale quern. However in this case excavation revealed that the Iron Age dun fell into disrepair – rubble from the walls then presumably falling into the interior – but was then cleared out, and the wall rebuilt with mortared masonry, in medieval times. It is therefore possible that the quern was dropped into the wall core either when the dun was built – probably in the first or second centuries AD – or when it was rebuilt in early medieval times. The former seems more likely since the medieval building probably simply involved the re-use of the fallen Iron Age wall material; there would be no obvious reason to bring in new stone. However, Dun Lagaidh does show how occasionally a simple deduction about the age of a broken quern among pure, dry fallen wall rubble in an Iron Age broch or dun might not be possible.

The quern itself (fig 2, k) is of Moine garnet schist and somewhat battered around the edges; it probably had a diameter of about 43 cm when complete. The upper surface is quite flat and has a handle hole preserved in it. The lower, grinding surface seems to have been entirely split off and the present maximum thickness is only 43 mm.

DISCUSSION

Several rotary quernstones are now known which come from certain primary contexts in brochs, semibrochs and duns and a more precise assessment can thus be made of the origins and development of the type than was possible in Curwen's time. It is clear now that two basically distinct forms – probably derived from different sources – were in use in Atlantic, S and central Scotland from the first century BC to the second and third centuries AD, broadly the period of the use of the brochs as forts. The bun-shaped, lateral-handled querns do not seem to have been introduced to Scotland by the Roman army as Curwen thought (1937, 148); the earlier, beehive forms have been found on native sites in the same area (MacKie 1971, 70–1). It is probably sufficient to explain the examples on Roman sites by assuming that local women ground flour for the army with their own stones.

The most important characteristics of these querns are the wedged lateral handle and the bipartite hopper. The handle must have been fixed immovably into the deep, pointed socket – a feature which does not seem to have been commented on before but which probably provides the best way of distinguishing between the two groups of querns. The hopper often has a funnel- or cup-shaped upper part leading down to a relatively narrow hole. The grinding surface is almost invariably flat, as in the beehive querns, and the upper surface is dome-shaped with a rounded edge. The lateral, wedged handle is retained even in the flat, discoid derivatives at Huckhoe (Jobey 1959, fig 14), in the upright-handled examples from Rhiroy and Colonsay and possibly in that from the Kintradwell broch (Curwen 1937, figs 34, 36, 37).

On the other hand the disc querns with upright, loose handles seem to have been present in S Scotland by the first century AD and these mark such a sharp break in design with the beehive series that it is difficult to assume that they were derived from them, particularly since – as noticed above – the wedged-handled querns developed into superficially similar disc querns without losing their most important features. A flat disc quern antedated the broch at Torwoodlee but no handle hole was preserved (Piggott 1951, figs 4 and 10): this one must date to the first century AD at the latest because of the early-second-century date inferred for the broch. Indeed, since it was at the base of the silted-up ditch of the preceding hillfort, it may very well be considerably earlier than the broch and date to the first century BC. The quern found at Leckie shows the same wide hopper, which is not clearly divided into two parts, and the abraded, cup-shaped socket shows that it had an upright loose handle of wood or bone (such a bone handle was probably found in a wheelhouse on South Uist: Young and Richardson 1960, fig 7, nos 13 and 14). The profile of the Leckie quern is slightly bun-shaped.

The earliest rotary querns from Atlantic Scotland again show how the two quite different types – with fixed and loose handles – existed side by side in the first century BC. The earliest stone from the Vaul broch on Tiree (fig 1, d) is a true, flat-topped disc with a wide hopper and a loose, upright handle; it ought to date to about the middle of the first century BC, slightly before the building of the broch. The two other querns from the construction periods of Hebridean brochs – another from Vaul (fig 1, c) and that from Dun Osdale (fig 1, b) – both lack their handle holes but have the wide hopper and the profile of another variant of the disc series. More massive disc querns were in use in brochs and allied structures in the second century AD and perhaps earlier as is shown by the broken stone from Dun Ardtreck (fig 2, i); the unstratified similar stone from the Caithness broch (fig 1, a) shows that this form also had the loose, upright handle.

Yet it is now clear that the fixed-handled, bun-shaped querns had also penetrated into western Atlantic Scotland, probably in the first century BC or the first AD. The two stones from Rhiroy are the clearest evidence of this and there is an undated similar quern from Colonsay

in the National Museum (no. BB 33). In two of these the socket for the fixed handle is near the upright position and the same may be true of one of the three querns from the Kintradwell broch, Sutherland, which seem to be of this type (Curwen 1937, figs 34, 36 and 37). However most of the broch querns seem to be disc forms.

It thus seems that the two different forms of rotary querns were introduced into western Atlantic Scotland at about the same time, in the first century BC, but from different sources (fig 3). The important and hitherto un-noted distinction between the loose, upright handle of the disc quern and the fixed, mostly laterally-placed handle of the bun-shaped series makes it even less likely that the former were derived from the latter. Moreover, although a large proportion of the broch disc querns have a slightly bun-shaped profile – suggesting that influence from the fixed-handled querns affected their shape – it is a fact that the two earliest known stratified

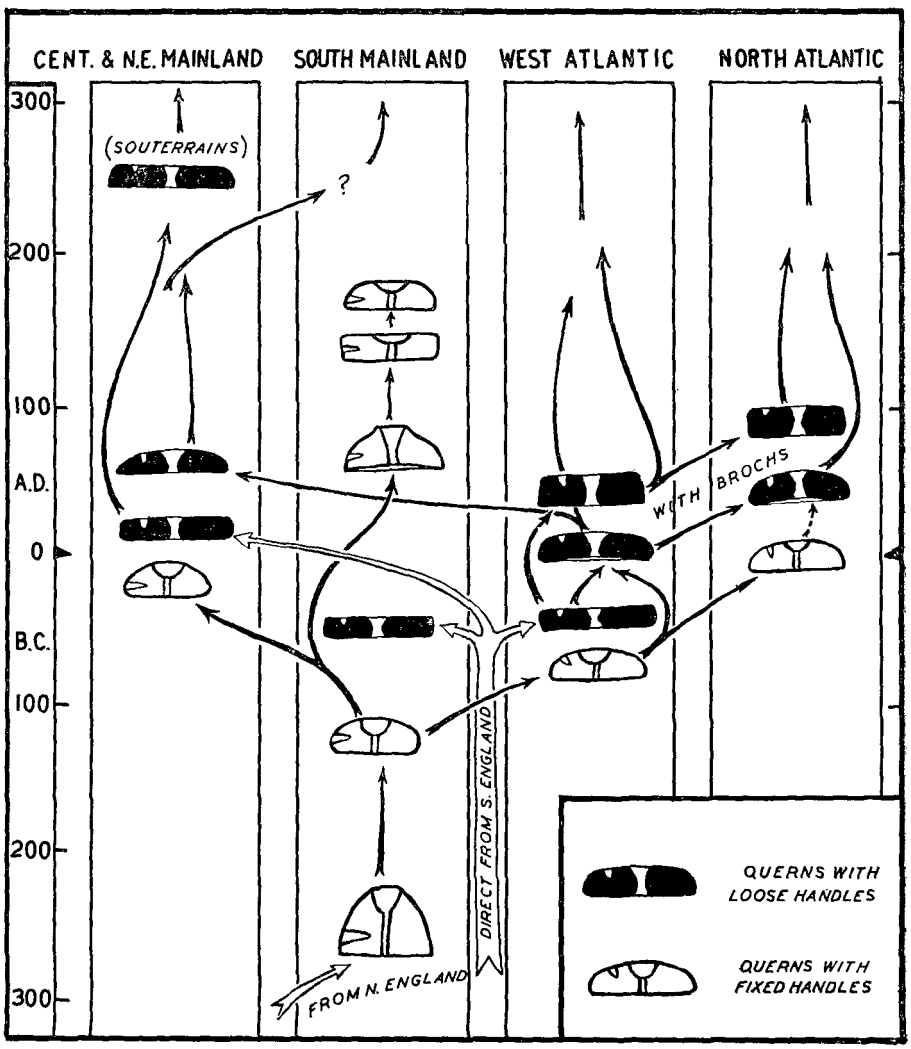

FIG 3 Chart showing the suggested development of the two main forms of rotary querns in Iron Age Scotland

disc querns (at Torwoodlee and Vaul) are of the true disc form with parallel upper and lower surfaces. This is exactly what one would expect if the disc querns were originally introduced from outside Scotland and then underwent local modifications.

It may be inferred that the two strains of rotary querns co-existed for a short time and that the bun-shaped profile influenced the shape of many of the disc querns. However the latter, with their upright loose handle, were clearly the more efficient form and seem quickly to have supplanted the fixed-handled forms in those regions in which the latter had only recently arrived. Only in Scotland S of the Forth–Clyde line do the fixed-handled querns seem to have been still commonly in use in the second century when the Roman army arrived again. It is also interesting that two of the few fixed-handled querns known from Atlantic Scotland have been found in a semibroch, a structure which has been inferred on various grounds to be immediately ancestral to the brochs. The brochs themselves seem to have developed in the Western Isles shortly after the arrival there of elements of the late Iron Age B cultures of southern England, including the disc quern (MacKie 1971), so the presence of the earlier form of quern in the earlier prototype broch seems entirely appropriate. The sharp change to the more advanced, loose-handled form is also seen at Rhiroy in the latest, complete quern (fig 2, g).

ACKNOWLEDGMENTS

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