

THE ROTARY QUERN IN WALES : PART ONE

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In the century that preceded the birth of Christ, Wales, or rather the land that was to become Wales, was occupied by a number of different Celtic Tribes, chief of which were the Demetae and Silures in the south and the Deceangli and Ordovices in the north. They lived in strongly defended hillforts or protected farmsteads, kept sheep and cattle and grew crops in small rectangular fields. The harvested grain was stored in pits or raised wooden granaries and 'each day they picked out the old ears (of corn) and ground them'.¹ In many communities this was done, as it had been for centuries, using a saddle quern. This was the quern used by the ancient Egyptians and to which Moses refers when he tells Pharaoh that all the first born will die, 'from the first born of Pharaoh that sitteth upon his throne, even to the first born of the maidservant that is behind the mill'.² The slave girl knelt on the ground with the lower stone sloping away in front of her. She held the upper stone in both hands and pushed and pulled it across the grain, pausing occasionally to feed the nearer end with more grain, the ground meal falling off the lower end. But now a new milling device was appearing, the rotary quern. This comprised two circular stones, a stationary lower one and an upper stone that was turned above it by means of a projecting handle, while grain was fed through a central hole or eye in the top stone. The top stone was held in place by a spindle projecting from the centre of the lower stone. Since it was the weight of the stone rather than the pressure exerted by the operator that crushed the grain, the rotary quern could be used for much longer periods than the saddle quern. The lower stone was generally bedded or wedged on the ground and the operatives sat on the floor, the ground meal being collected in a cloth or just scooped up from the compacted earth around it. At Tan-ben-y-Cefn, Anglesey, both upper and lower stones were found lying within a circular hut apparently in their working position,³ although within a Romano-British hut excavated at Porth Dafarch was a quern supported on a stone pedestal.⁴ Latterly it is likely that some querns were set upon tables, the spindle passing right through the lower stone to pivot in a bearing of wood or stone underneath. Exactly how the upper stone was turned or if it could be centered we cannot be sure, although the remains of geared handmills of Roman date have been found in Germany⁵ and in England possible iron spindles have been found at Great Chesterford and Silchester.⁶

The earliest form of rotary quern is often called a beehive quern, named after the old fashioned straw beehive it resembles. Several types are known and there is a distinct north-south divide, those from southern Britain having a sloping grinding face and wide eye whereas those from the midlands and north have a flat grinding surface and narrow eye. The differences would seem to be loosely based on tribal divisions, the

differences within each type being probably due to several quarries working the same stone, differing standards of workmanship or simply to a chronological factor. Although the beehive quern was first used in England perhaps as early as 400BC, it does not appear to have been used in Wales much before the first century AD and indeed it has often been suggested that the rotary quern was introduced by the Romans, who first entered Wales in about AD50. At Castell Henllys and Coygan Camp, Dyfed, for example, rotary querns were only found in Romano-British phases,⁷ while at Breiddin hillfort in the Welsh Marches near Shrewsbury only one out of the 49 whole or fragmentary querns found was a rotary quern and this too came from a Romano-British level.⁸ At Castell Odo, a settlement on Mynydd Ystum near Aberdaron, Gwynedd, the incorporation of an almost perfect saddle quern in the floor of a hut constructed during the Roman period is taken to indicate that it had been rendered obsolete by the rotary quern at this time.⁹

However, the remains of beehive querns found on several sites suggest an earlier date for the use of the rotary quern in Wales than perhaps has previously been thought. On an Iron Age farmstead near Prestatyn, Clwyd, the upper stone of a beehive quern had been used to fill a posthole of a palisade dated between about AD70 and 160. It is likely, therefore, that this quern was in use in the earlier part of the first century (Figure 1). The stone is 340mm diameter across the base, 220mm across the top and 160mm high, with a flat grinding face and a slightly asymmetrical funnel-shaped eye which narrows considerably towards the grinding face. One of its most distinguishing features, however, is its handle hole which is drilled right through from the side of the stone to the eye.¹⁰ The flat grinding surface and narrow eye of the Prestatyn quern identify it as a northern quern and the pierced handle hole allies it to the Hunsbury type, named after the hillfort in Northamptonshire where the greatest number of them have been recovered.¹¹ The stone is also decorated with a groove around the top as is a fragment of quern from Rhuddlan, Clwyd, which was originally 350mm in diameter with a narrow eye and which has also been dated to the Iron Age.¹²

At Mynydd Buchan, Llysworney, Glamorgan, a walled enclosure containing a group of circular huts, two fragments of a beehive quern were incorporated into phase II (AD50-100) structures of the fortified settlement there and the inference is that it was in use during phase I of the site's occupation, that is 50BC-AD50. The quern was originally about 368mm diameter and 135mm high with an eye of approximately 76mm diameter and a concave grinding surface.¹³ The shape of the grinding face and wide eye identify it as being of southern type and its general rounded appearance as a Wessex rather than Sussex.¹⁴

However, although the rotary quern in all probability did precede the Roman advance into Wales, there is no doubt that the Roman period saw a great increase in its use. Almost every Romano-British site, whether fort,

town, villa or farmstead yields its share of quern fragments and the wealth of different materials, shapes and sizes indicates the spread, diffusion and coalescence of ideas and fashions throughout the Roman period. In addition, the rotary quern was not entirely restricted to grinding grain. The upper stones found in the Dolaucothi gold mines, Dyfed, for example were probably for milling ore, as were two fragmentary stones found at a lead mining site at Lower Machen, Gwent.¹⁵

During the Roman period querns of lava began to be imported in large quantities from Mayen in Germany, which were to greatly influence the design of the native British quern. The quarries had been worked since Neolithic times but it was only on the heels of the Roman invasion in AD43 that querns from these quarries began to be imported and indeed the Roman army probably brought lava querns with them when they invaded. The vesicular texture of lava makes it an excellent medium for grain milling and it is much lighter and therefore easier to transport than millstone grit or sandstone. As long ago as the fourth century BC, the Greek writer Xenophon stated that an army on the move should have 'handmills ready made with which to prepare food, for they are the lightest of the implements used in making bread'.¹⁶ In the Roman army a quern was part of the equipment of the *contubernium* of eight or ten men who shared a tent or barrack room.¹⁷ Although there would appear to be a number of different styles, the most common form of lava quern has a raised rim or kerb around the edge of the upper stone (Figure 2). The kerb was perhaps to prevent grain falling off the edge or to strengthen the rim of the stone for drilling a cranked, elbow shaped handle hole from the top through to the side of the stone, through which a spiked iron loop was fitted which held a vertical wooden handle. The upper stone is generally between 360mm and 480mm in diameter and 50mm to 120mm thick, although thinner stones are probably worn examples. The top of the upper stone often slopes in towards the eye which is usually circular, some 80mm wide with two recesses to hold an iron rynd, which at this stage was probably merely to locate the upper stone on the spindle rather than to support it. The grinding surface is concave. The lower stone is of similar diameter but only 60mm to 70mm thick. It has a corresponding convex grinding surface and a narrower eye, or central perforation, with a lip around it. Apart from underneath the lower stone which, although dished, was generally left rough, all surfaces show evidence of tooling with vertical lines around the edge and bidirectional lines on the top. The grinding faces are often 'dressed' with a harp shaped pattern of furrows very similar to that used on millstones today. It is notable that the harps may be for clockwise or anticlockwise rotation, although on some stones they are indeterminate and the dressing is better described as radial. Lava querns have been found on a number of sites including the settlement outside the fort at Caersws in Powys, Whitton, an Iron Age and Roman farmstead in south Glamorgan and the forts at Caerleon and Usk.¹⁸

The principles of the new, flatter, wider style of quern were quickly copied by local quern manufacturers. From the fort of Caerhun (*Canovium*), built in the early years of the Roman occupation of Wales as a staging post on the road from Chester (*Deva*) to Caernarvon (*Segontium*), came a fragment of upper stone of local millstone grit dated to between AD80 and AD110 with a kerb around its edge and anticlockwise dressing on its grinding surface.¹⁹ A similar kerbed stone from Usk, some 380mm in diameter and 61mm high, would also appear to have been dressed. It is thought to be of late first century or second century date.²⁰ Two locally-made sandstone querns from Whitton, both of which were probably in use in the early second century, also show a deliberate attempt by their makers to incorporate continental ideas. Both have a raised rim and one shows evidence of the cranked handle hole, the other recesses for a rynd. However, the grinding surfaces are randomly pecked rather than dressed and it is noticeable that the handle hole is not as accurately drilled as that of the lava querns. They are 360mm and 355mm in diameter respectively and 92mm and 76mm high.²¹

Excavations at Usk also produced a number of fragments of querns much more akin to the flatter type found in southern Britain in the second and third centuries AD, with a wedge-shaped handle slot cut into the top of the stone (Figure 3). However, the upper surface tends to be slightly convex and in some instances is almost parallel with the concave grinding face. These stones have a dished hopper around the eye and two rynd slots. They are all between 390mm and 410mm in diameter and only 40mm to 60mm thick at the edge. The grinding faces are pecked rather than dressed. These querns were probably broken and discarded in the second century.²² Fragments of similar stones, also probably of second century date, have been found at Whitton, Caersws and Walesland Rath, a fortified settlement near Haverfordwest.²³

There is also a fine example of an upper quern stone with a horizontal handle slot on display in the Roman legionary museum at Caerleon. It is probably of second or third century date, this being the main period of occupation of the Roman fort at *Isca*. It is larger than the querns mentioned previously and unusual in that it has a rectangular eye with no hopper, although in this respect it closely resembles a number of Romano-British querns from southern England. However, unlike the southern querns and in common with other Welsh querns of this type, it has an iron rynd. The grinding face is dressed, as indeed is that of the lower stone with which it is displayed.

In north Wales in particular the beehive quern tradition was to remain strong. The upper stones, in common with many found on Romano-British sites in northern England, developed a roll collar around the hopper and the grinding surface became concave rather than flat. Fragments of two beehive querns found in the second to third century courtyard village at Caerau, Gwynedd, have a rounded profile with a

pronounced roll or collar around the top of a shallow hopper with a narrow eye giving onto a concave grinding face. Of Anglesey grit, they are both about 305mm diameter and 165mm high.²⁴ In the garden of Lligwy House, Penrhos Lligwy, Anglesey, is a similar stone, also of local grit, 335mm in diameter and 110mm high. It has a slight collar, concave grinding face and the eye has been smoothly worn to an oval shape. There is no evidence of a handle hole but the stone is incomplete. This quern apparently came from Parciau, Llaneugrad, not far from Lligwy House.²⁵ Of similar shape but smaller is a much worn and damaged sandstone quern, thought to be of first or second century date, from Aberlleiniog, Anglesey, and now in the museum in Bangor. Two other sandstone querns, also in Bangor museum but unfortunately unprovenanced, have grooves around them that give the impression of a collar. One is a neat stone, 305mm in diameter and 178mm high with a narrow eye, concave grinding face and handle hole in the side and has a single groove around the shoulder. The other, 279mm in diameter and 152mm high, has two concentric grooves around the hopper.

Anglesey is particularly remarkable for its decorated querns of which at least eight have been found and a number have also been found in the parish of Llanddeiniolen near Caernarfon. The decorations can be divided into three main groups, those like the querns mentioned above with simple grooves encircling the hopper, those with chevrons or lines radiating down from the collar and those carved with spirals. Examples of querns decorated with lines or chevrons have been found at Bodafon, Rhuddgaer and Tantwr on Anglesey and at Llanddeiniolen.²⁶ Of beehive querns decorated with spirals the finest is from Blochty on Anglesey and now in the National Museum of Wales, Cardiff (Figure 4). It is a large rounded quern of sandstone, 330mm in diameter and 190mm high, with a pronounced lip or collar around the hopper, narrow eye, concave grinding face and handle hole in the side. Other scrolled querns were formerly at Tre-Anna and Dinam on Anglesey and have also been found near Llanddeiniolen. That from Dinam, now in Bangor museum, was probably very fine when new. Of coarse, crystalline igneous rock it was originally about 279mm in diameter and 127mm high and decorated with concentric rings around the collar and curvilinear pattern around the body.

The fact that there is such a concentration of decorated querns on Anglesey and in north west Gwynedd must be significant, although whether the decoration is an indication of status, wealth or has some symbolic or religious meaning is not clear (cross marked querns are not uncommon in Scotland and Ireland in later times). We know that Anglesey was the seat of Druidic learning, until the sacred groves were destroyed by Suetonius in AD60. Did the hillfort of Dinas Dinorwig in Llanddeiniolen also have some significance, the residence of a local chieftain perhaps? Also, Anglesey was a great grain producing area in both Iron Age and Roman times (as indeed it still is) and was intensively occupied in the second and third centuries. Unfortunately the majority of patterned querns are

unprovenanced or undated but most, if not all, have a roll collar and concave grinding face and the majority were found on or near Romano-British sites. It must also be noted that a number of beehive querns displaying similar decoration have been found in Ireland and although they are different in form to Welsh ones, the similarity in decoration surely indicates some cultural link. It has been put forward that the simpler the decoration, the earlier the quern,²⁷ and this could well be so, remembering that the Iron Age querns from Prestatyn and Rhuddlan were inscribed with a single groove around the top. However, a number of querns of the later Roman period are also simply decorated with rings around the collar or shoulder such as those found at Pant y Saer and Din Lligwy, both on Anglesey²⁸ and in Llandudno museum is an upper stone from *Canovium*, some 400mm in diameter, with two or possibly three concentric rings around the eye that define a collar and beaded shoulder. Mention must also be made of a lovely decorated top stone, now in Bangor museum but originally from Bryn Howell, Pentir, Gwynedd (Figure 5). Of quartzose sandstone, it is 483mm in diameter with a concave grinding face and convex top with no collar. It has a large eye, 89mm in diameter but no evidence of a rynd or handle hole. Regrettably it is undated, but it could be fourth century or later.

Possible Irish or Scottish influence can also be seen in an upper stone recovered from the remote Roman auxiliary fort at Tomen y Mur, near Trawsfynydd. About 318mm diameter, it has with a projection from the side with a hole for an upright handle.²⁹ A similar upper stone with a projection for an upright handle hole was found at Cellan, Lampeter.³⁰

The final development of the Romano-British quern was a collared form combining features of both beehive and flat querns. It is particularly well illustrated by an upper stone with a neat rectilinear profile, 368mm in diameter and 70mm thick, which has a wedge-shaped lateral handle slot cut in its upper surface (Figure 6), that had been reused as paving in one of the huts at Cae'r Mynydd, Gwynedd. Around the roughly circular eye are two small slots thought to be grain runnels and two much larger slots for a rynd.³¹ An incomplete upper stone from *Segontium*, now on display in the museum, was originally about 368mm in diameter and around the edge, which is up to 76mm thick, there would appear to have once been three indentations to which some form of turning device was possibly fitted, there being no evidence of a handle hole. Pieces of other collared querns are on display outside the museum. At Tre Anna about half a collared top stone survives in a rockery. It was originally about 380mm in diameter and varies in thickness between about 60mm and 80mm. Like others of its type it has two rynd slots cut into the eye and a concave grinding face with no dressing. Another fine example lies at Lligwy House. Of fine grained sandstone, 455mm in diameter, it has one handle hole (possibly originally two) in the top, for the insertion of an upright handle. Unusually it has two rynd slots cut into its concave grinding face rather than into the eye or hopper suggesting that it was supported as well as located by its rynd. The

stone came originally from Tre'r Dryw, Llanidan, close to Caer Leb, an enclosure occupied in the third and fourth centuries.

Lower stones also became thinner and wider as the Roman period progressed, with the spindle hole giving way to a completely perforated eye. The underside of the stones also changed from flat or rounded to dished. Lava lower stones, as has already been said, had eyes, dished lower sides and dressed grinding faces. An exception is a most unusual lower stone, some 350mm in diameter, on display in the tide mill at Carew, Dyfed, which lacks a spindle hole but instead has a raised hump in the middle of its convex grinding face that fits into the eye of the upper stone.

It would seem, therefore, that the development of the rotary quern in Wales before and during the Roman period basically follows that set out by Curwen in his pioneering work on querns in 1937.³² The earliest form of rotary quern was the beehive type, introduced to Wales in, perhaps, the first century BC and its use persisting almost throughout the Roman period. In the first and second centuries AD newer, flatter, wider forms of quern began to be used that were probably based on the lava querns introduced by the Romans. Grinding surfaces were frequently dressed and rynds were increasingly used. The earlier flat querns appear not to have had collars, whereas those from the later Roman period did, a combination maybe of continental and native forms.

Illustrations

1: Hunsbury type beehive quern. After Blockley, K., 'Prestatyn, an Iron Age farmstead and Romano-British settlement in North Wales', British Archaeological Reports, British Series, 210 (1989)

2: Lava quern. After Welfare, A. in Jarrett, M.G. & Wrathmell, S., Whitton, an Iron Age and Roman farmstead in South Glamorgan (1981)

3: Flat topped Romano-British quern. After Welfare, A., *ibid*

4: Decorated beehive quern from Blochty, Anglesey, now in the National Museum of Wales, Cardiff

5: Decorated top stone from Bryn Howell, Caerns., now in the Museum of Welsh Antiquities, Bangor

6: Collared quern from Cae'r Mynydd, Caerns. After Griffiths, W.E., 'An enclosed hut group at Cae'r Mynydd', *Antiquaries Journal*, 39 (1959)

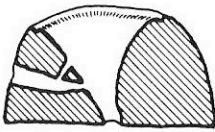


Fig. 1

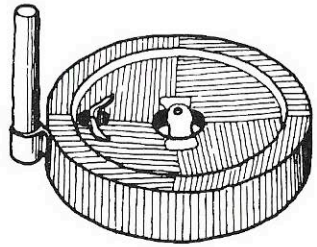
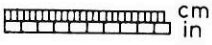


Fig. 2

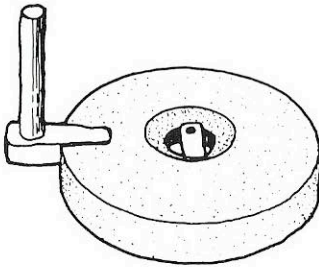


Fig. 3

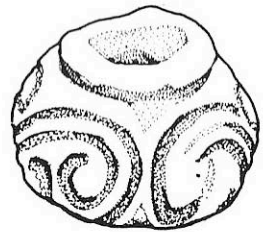


Fig. 4

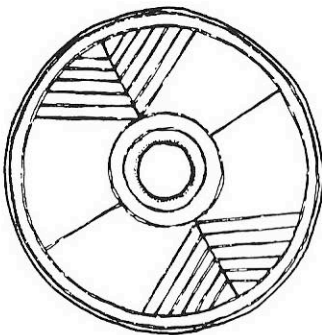


Fig. 5

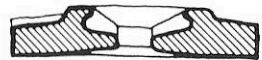


Fig. 6

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