

A ROMAN DONKEY MILL FROM THE CLYRO

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In the summer of 2001 the remains of a bi-conical (hour-glass shaped) stone object was discovered during building work on farm buildings close to the site of Clyro Roman fort. It was nearly simply broken up for hard core but fortunately a visitor to the farm noticed its unusual shape and its discovery was reported to the then Department of Archaeology and Numismatics at Amgueddfa Cymru - National Museum Wales. On examination the object proved to be the upper stone of a Roman donkey mill, a cause of much surprise, as evidence for such objects is very rare from Britain. Early in 2004 there was further surprise when the solid, conical, lower stone was spotted amongst a pile of rubble on the farm. The first lower stone of a Roman donkey mill to be found in Britain (Plate 1).

The Roman donkey mill (*mola asinariae*) consisted of a bell-shaped lower stone (*meta*), which remained stationary, and a hollow hour-glass shaped upper stone (*catillus*) that turned (White 1984, p.65). As the name suggests it was an animal powered mill. A donkey, mule or horse, too worn-out for other uses, could have been used. In a British context the latter may well have been the most likely. The Clyro example follows the standard form of such mills and is of comparable size to other known Roman examples (Moritz 1958, p.75): its upper stone is 650mm high and has a maximum diameter of 690mm, the lower stone is 920mm high and has a maximum diameter of 630mm.



PLATE 1 Clyro Donkey Mill © Amgueddfa Cymru National Museum Wales

Grain was ground as it descended between the upper and lower stones, the flour collecting around the base. It has been suggested that the hour-glass design had a double purpose: the upper cone could be employed as a hopper, and the stone could be reversed, so that at the cost an initial outlay somewhat greater than if only the minimum hopper had been provided the life of the stone could be lengthened considerably (Moritz 1958, p.77). There were two square projections on opposite sides of the narrowest part of the upper stone, these projections contained a square socket pointing inwards but not penetrating into the central hole. At right angles to the socket there was a much smaller round hole which presumably held a pin/dowel to hold in place the beams insert into the square sockets. These beams were joined, over the top of the mill by other beams (Moritz 1958, p.76-7). There is little evidence for the internal fittings of Roman donkey mills. A central spindle seemed usually to have been present but the purpose of the spindle and the method by which it was fixed is unclear. Nor is there firm evidence whether a rynd was used in conjunction with, or as an alternative to, a separate hopper, sometimes seen in Roman depictions of donkey mills. It is not even certain whether the upper stone rested directly on the lower or was suspended slightly above it (Moritz 1958, p.83-8). The milling surfaces of the stones appear not to have been grooved (Moritz 1958, p.79). There appears to be very little evidence for how much flour these mills could produce: a figure of 543 litres a day is quoted by Alcock (2001, p.25), but it is unclear on what this is based.

Donkey mills are well known from examples at Pompeii, Ostia and other Mediterranean sites (Plate 2), but only two other examples are recorded from Britain: one from London (Birley 1929, p.220-1; Williams-Thorpe & Thorpe 1988, p.276) and one from Corfe Mullen, Dorset, (Williams-Thorpe & Thorpe 1988, p.276). A third possible example, of slightly different form, from Hamworthy, Dorset, appears more likely to be post-Roman in date (Williams-Thorpe & Thorpe 1988, p.277-8). The London and Corfe Mullen examples are both made of imported lava (Williams-Thorpe & Thorpe 1988, p.278), whereas the one from Clyro is in a hard sandstone.

Clyro as the location of the finding of a donkey mill is of interest to the study of the archaeology of the Roman period in Wales. The site of the Roman fort of Clyro sits on a small hill overlooking the River Wye, close to the modern town of Hay-on-Wye. Its existence has been known of since at least the 1830s, but little is known about the site, with some uncertainty even about the size of the fort. Whether it was of 10.4 hectares or only 7.3 hectares it is, however, still too large to be a conventional auxiliary fort. The finding of a donkey mill on the site may provide a clue, as to the function of the site. The presence of a donkey mill would suggest quite large scale flour production which could suggest that the site acted, at least in part, as a supply base. The fort appears to have been abandoned by AD 70, as the few finds that have come from the site are all pre-Flavian in date (Brewer 2010, p.238-9), so if it did function as such, it would have been during the early Roman campaigning against native tribes in Wales, which started in AD 47, rather than during the final campaign of conquest in the early AD 70s.



PLATE 2 Drawing of part of a Roman stone relief from the Vigna delle tre Madonne, now in the Vatican Museum
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Why the Roman army left the mill behind when they abandoned the fort is unclear, but some at least of the damage to the upper stone appears to have happened in antiquity, so it seems reasonable to suggest that the upper stone may have been already broken, or possibly broke in the process of moving, and so was not worth the effort of retrieval.

Both stones are on long-term loan to Amgueddfa Cymru - National Museum Wales, and are currently on display in the Wales Is gallery at St Fagans National Museum of History.

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