



## Gems from the Mills Archive

# An ancient milling revolution

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*It's the oldest item in our collections – a heavy, smooth, conical lump of rock, about nine inches across and four and a half inches high. Known as a beehive quern (due its similarity in shape to a traditional dome-shaped wicker beehive), it was found in north west Essex in the Stansted area and is made of Hertfordshire puddingstone. Although this ancient artefact is probably over 2000 years old, in its day it was a revolutionary new form of technology, both literally and metaphorically.*

Today we are so familiar with each new year bringing new technological advances, we can hardly imagine what it was like to live in a time when most of the tools people used as part of their everyday lives were the ones they had inherited from their parents and grandparents before them, and when a new form of technology would have seemed wholly unprecedented. For thousands of years, from perhaps as early as 4000 BC or before, the form of millstone used the world over was the saddle quern, consisting of a large flat stone with a smaller upper stone which would be rubbed back and forth across it. Grinding enough flour for the daily bread at a saddle quern was very strenuous work. Research from the University of Cambridge in 2017 indicates that Neolithic women had stronger arms than today's elite rowers due to spending up to five hours a day grinding wheat.

In the Iron Age, for the first time in thousands of years a completely new type of mill appeared – the rotary quern. It was significantly more efficient, taking perhaps only hour to grind the wheat for the day's bread, and made de-husking the grain much easier. The new type of mill was only made possible by the introduction of iron, enabling the creation of both the iron tools used to shape the stone and the iron spindle around which the upper stone rotates. Grain was fed into the 'eye' in the centre of the upper



stone, which was turned using a wooden handle inserted into a hole at the side. Grain is crushed between the rotating upper stone and the stationary lower one, exiting as meal all around the rim.

The exact time and place of the rotary quern's origin is not certain; however they seem to have arrived in Britain in around 400-300 BC. We can only guess at the effects the new type of mill had on society, but in providing a means to produce flour much more quickly and in greater amounts, it must have led to significant social changes, comparable to the effects of the introduction of the even more efficient water powered mills in the Roman period, and the development of modern roller milling technology in the 1800s. Beehive querns continued to be used into the Roman period, gradually being replaced by larger and thinner stones. Even with wind and water powered mills, handmills still continued in use into the Middle Ages, and for grinding oats in the Scottish isles into the 20th century.

The Mills Archive is a permanent repository for the documentary and photographic records of traditional and contemporary mills and milling, as well as similar structures dependent on traditional power sources. It makes that material freely available for public inspection and use in research and learning.

The Mills Archive is one of the world's great mill collections. It has rescued over 3 million documents and images that might otherwise have ended up in a landfill site. It is an Aladdin's cave filled with memories and free to users. The collections show the rich and diverse crafts, buildings, machinery, equipment and people involved with mills in the UK and around the world.



[www.millsarchive.org](http://www.millsarchive.org)

