

ART. II. – *The Production and Distribution of Beehive Querns in Cumbria – Some Initial Considerations*

By CAROLINE J. INGLE

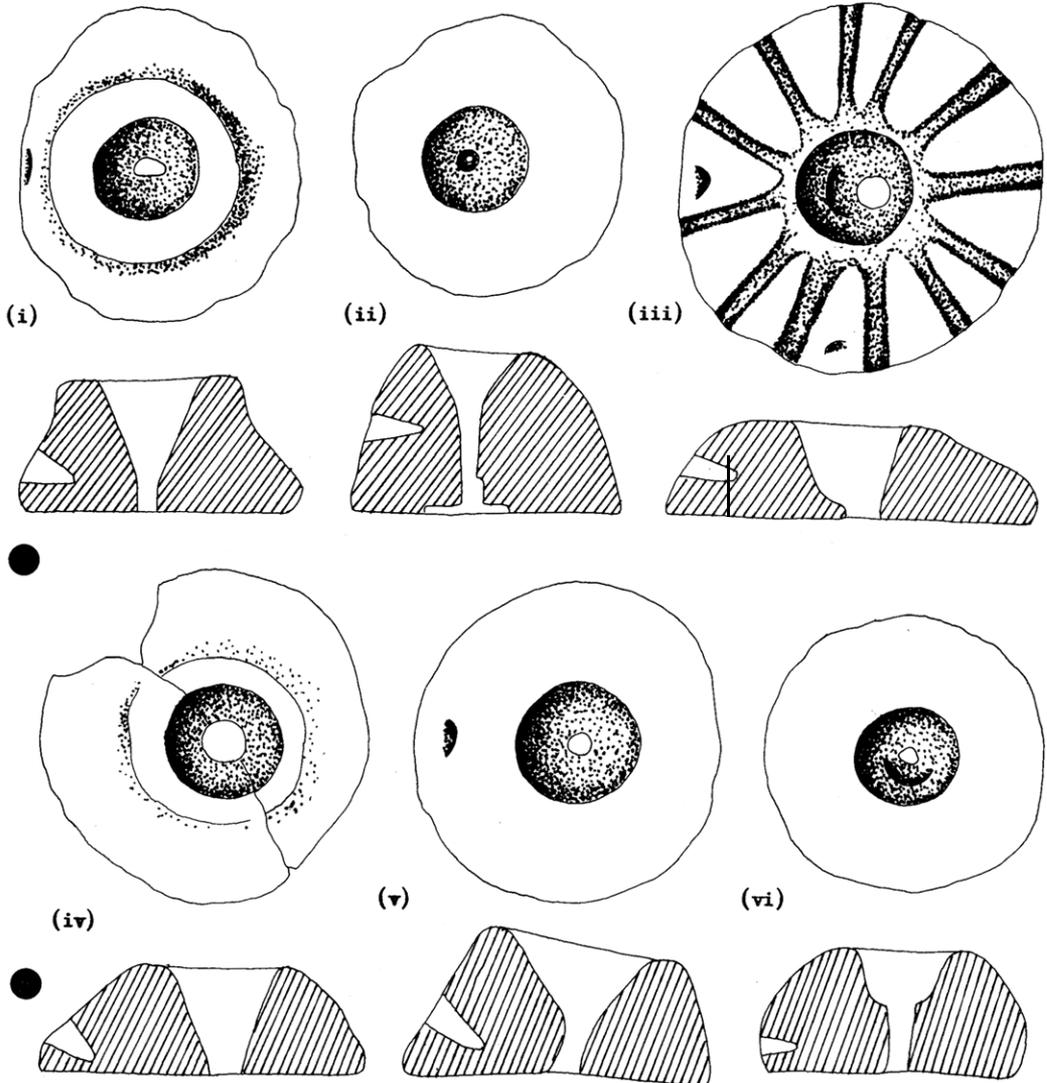
THE use of thin-section petrological analysis to determine factory sites for stone hand-axes has been successful for many years and the technique is now also being applied to the study of quernstones, e.g. by Hayes, Hemingway, and Spratt¹ in north-east Yorkshire, Ingle² in Bristol and Peacock³ in southern England. The ideas presented here are the result of a short preliminary visit to Cumbria to look at Iron Age beehive querns with the aim of determining production sites and patterns of distribution from these. It has not been possible to pursue this research at this time but even this brief study has revealed certain patterns of exploitation.

Thirty-three quernstones from six museums (at Carlisle, Penrith, Kendal, Barrow-in-Furness and Whitehaven) were examined and three of these were thin sectioned (all from a recently excavated site at Tebay). In addition *c.* 70 more documented in local journals⁴ were considered but these vary in the amount of information as regards their shape, dimensions and lithology. A further thirty quernstones at Carlisle Museum could not be examined owing to restrictions of time.

There are a number of problems inherent in a study of querns, particularly when trying to establish production and distribution patterns; many are unprovenanced and hence undated for example and there have been relatively few recent excavations. Few of those seen in museums could be re-identified from journal articles because of the lack of descriptive data in these and it cannot be assumed that they are now in the museum closest to the find spot. Finally, few of the querns can be assigned a date and it is not certain (although probable) that all were of Iron Age date – there are documented examples of querns in use into the 19th century.

Shape

A fairly wide variety of shape is represented (Fig. 1) but all the querns fall within the unpierced group defined by Caulfield.⁵ They are generally bun or hemispherical in shape (although some are more conical with collared hoppers (Fig. 1.i)) with a flat or slightly concave grinding surface, a funnel-shaped or dished hopper, narrow feedpipe and a lateral handle socket that does not penetrate the feedpipe. Diameters range from 21 to 36 cm similar to beehive querns found elsewhere in Britain. Thickness is more difficult to assess as this depends not only on the original thickness but also on the amount of wear. Six of the examples studied had a second handle socket inserted when the original had either reached the grinding surface or come too close for its continued use and these are at a height of 4.5-5 cm above the original. This would seem to imply an original thickness greater by at least this amount where this evidence is found; but where only one socket is extant it cannot be determined whether an earlier socket has been completely worn away or the quern has undergone relatively little wear.



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| (i) Penrith museum | - ?Voreda | (iv) Carlisle museum | - Ravenglass |
| (ii) Penrith museum | - ?Voreda | (v) Kendal museum | - Barbon Beck |
| (iii) Whitehaven museum | - unprovenanced | (vi) Kendal museum | - Bramley Farm nr. Cockermouth |

FIG 1 - Six examples to illustrate the variety in shape.

Lithology and Source Material

There are several potential sources for quern material in Cumbria – both igneous and sedimentary rocks – but as expected only a limited number of these were used.

Granite (Fig. 2)

Twenty-five querns were of granite though not all of one type; four of pink granite (from Middle Bank Farm, Corney; Bramley Farm, Cockermouth and two from Cumcatch near Brampton), the remainder of grey or unspecified. Grey granite examples were found mainly to the north, west and south-west of the region and again more than one source rock is represented. Diameters ranged 28-35.5 cm and shape was variable; two examples seen in Carlisle and Whitehaven museums are decorated with radial grooves.

Within Cumbria there are three main sources of granite: Shap Granite (a distinctive pink porphyritic type), Eskdale Granite (variable with both pink and grey types exposed) and Skiddaw Granite (three small exposures of normal and biotite granites). The situation is complicated by the effects of glaciation moving not only the Lake District granites within the region but also introducing erratic boulders from south-west Scotland. These erratics are derived from the Loch Dee, Cairnsmore and Criffel masses, the latter including a pink porphyritic type superficially similar to the Shap Granite.

Thin-section analysis should enable identification of original source in each case but it appears that most of these granite querns were made from erratic boulders – such as are common for example along the shores of Walney Island (both Eskdale and Criffel granites).

Sandstone (Figs. 3, 4)

Both the carboniferous and permo-triassic sandstones of the region were used.

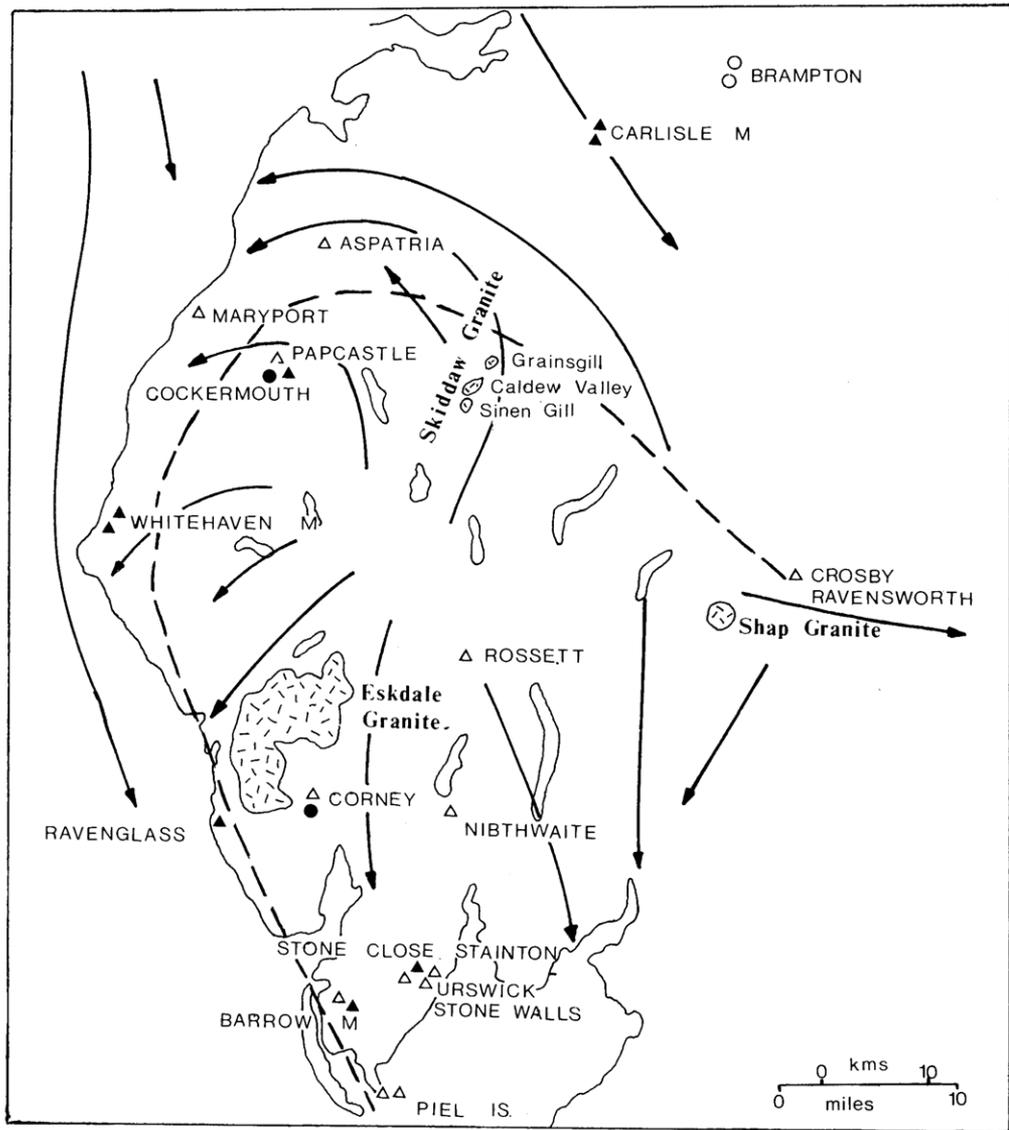
(i) Millstone Grit (Namurian sandstones)

Seven quernstones are of Millstone Grit, three of these from a site near Tebay – a fortified native farmstead of the 1st to 2nd century A.D.⁶ One is asymmetrical and somewhat conical in shape, the second more bun-shaped and flatter and the third only a fragment. In thin-section they exhibit typical Millstone Grit characteristics: dominantly of subrounded quartz with feldspar and a few fragments of mica.

The Millstone Grit series does not crop out in central Cumbria but is seen in the north-west (small discontinuous outcrops), to the east in the northern Pennines, to the south-east in the Lancashire fells and in one small outcrop in the parish of Urswick, Low Furness, in a field named Quernbarrow.⁷ Even at Urswick this rock was not used to the exclusion of other types – the nearby site of Urswick Stone Walls produced three granite querns although a whetstone, considered to be of Millstone Grit, was also found.⁸ The majority of the Millstone Grit querns were found in south-east Cumbria, i.e. at a maximum distance of 45-50 km from the nearest available source.

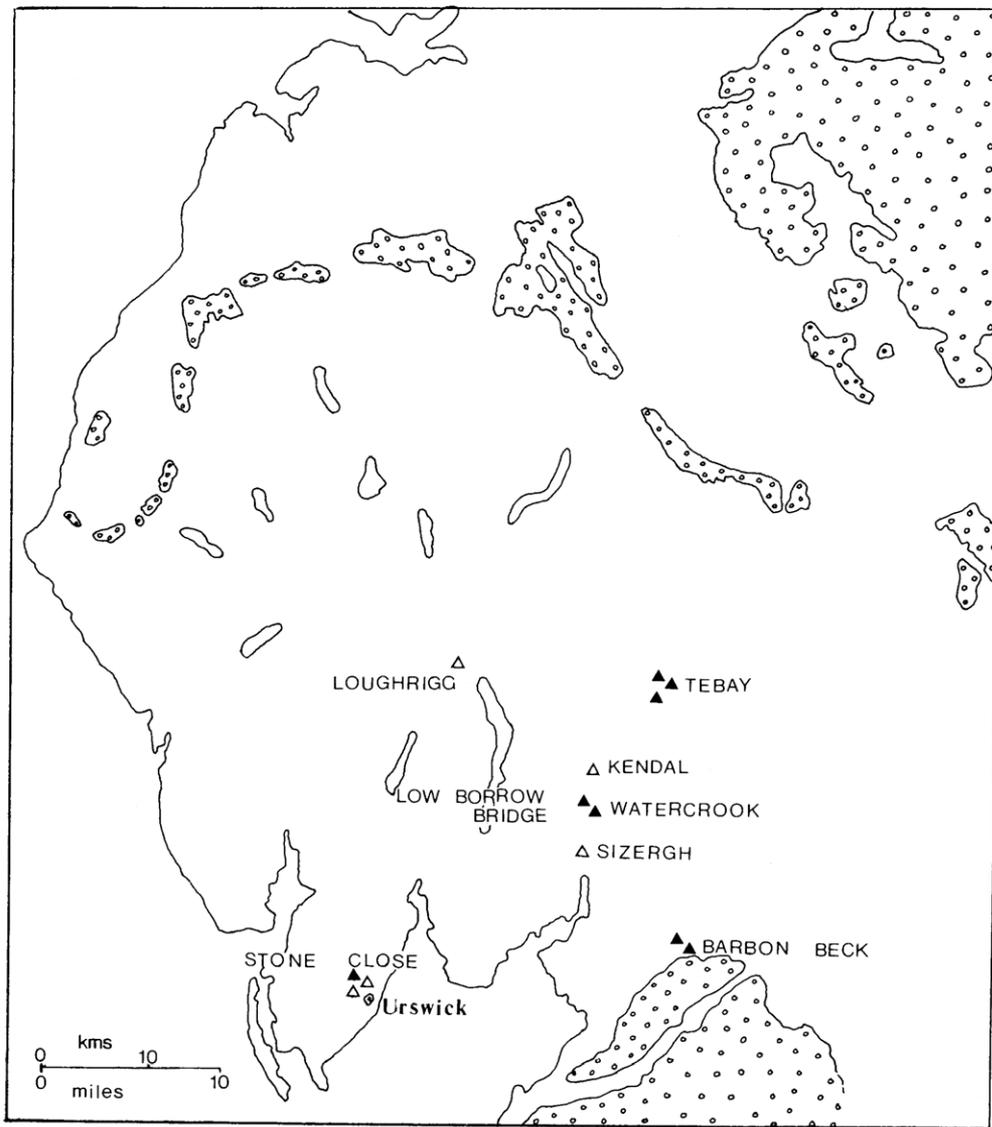
(ii) Permo Triassic and other

Of the remaining querns for which the lithology is known most are of medium to coarse grained red sandstone e.g. three of the five thought to have come from Voreda (Penrith museum). The other two are of yellowish brown medium grained quartzitic



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|  | Granite Outcrops | Grey Granite Querns: |
|  | Direction of ice movement | △ Literature reference |
|  | Limit of erratics from Criffell and south-west Scotland | ▲ Examined in Museum (M) |
| | | Pink Granite Querns: |
| | | ○ Literature reference |
| | | ● Examined in Museum (M) |

FIG. 2 - Granite: main outcrops, find spots and direction of ice movement.

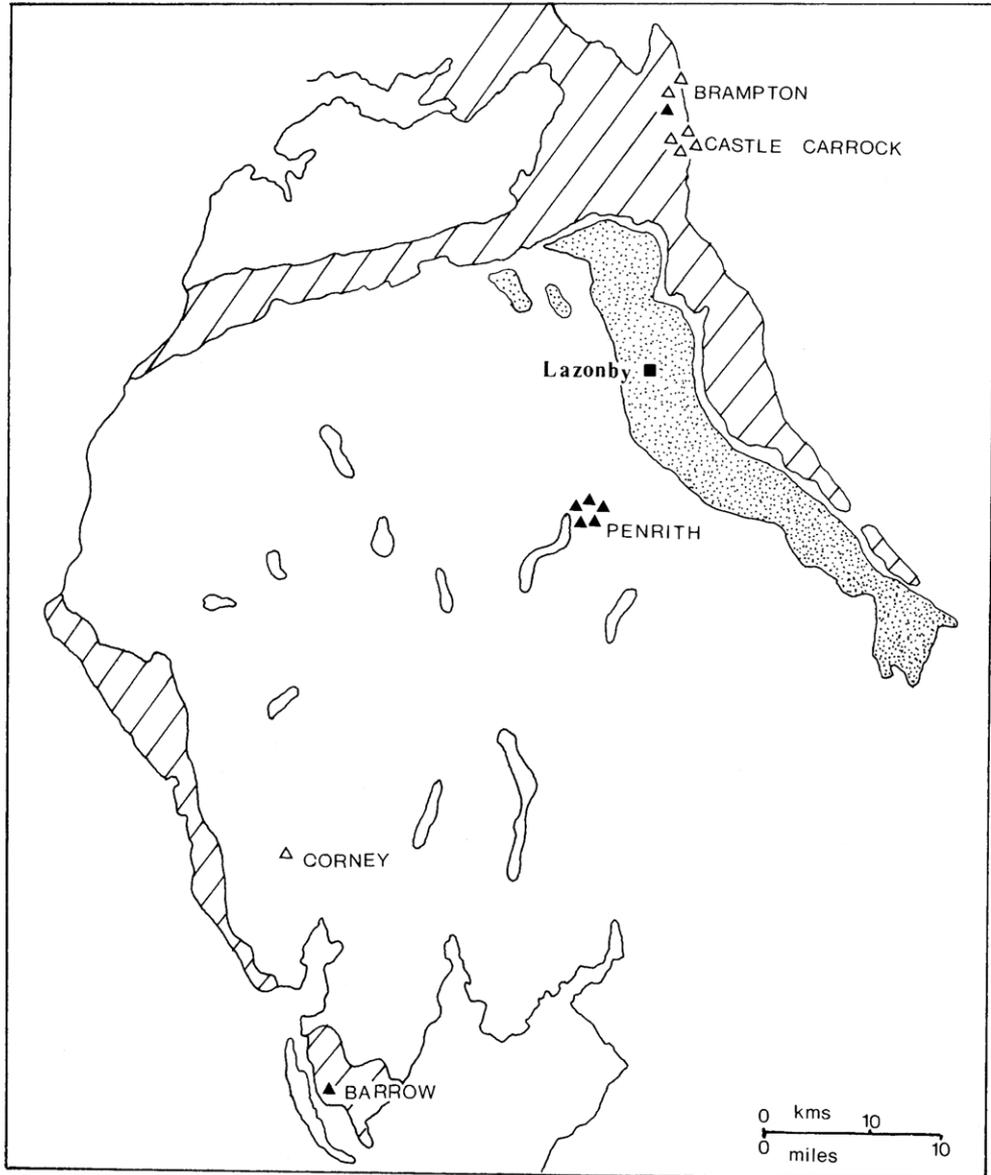


Millstone Grit Outcrops

 Literature reference

 Examined in Museum

FIG 3. - Millstone Grit: main outcrops and find spots.



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|  | Permian Sandstone Outcrops |  | Examined in Museum |
|  | Triassic Sandstone Outcrops |  | Literature reference |

FIG 4. - Permian and Triassic sandstones: main outcrops and find spots.

sandstone which could be Lower Carboniferous – a similar lithology is seen in examples in Barrow museum.

Triassic sandstones crop out in the Carlisle and Brampton areas, in the Vale of Eden and at St Bees Head – a quarry at Barn Ghyll near Whitehaven was noted for good millstones in the 19th century.⁹ The Permian Penrith Sandstone is typically soft around Brampton, but a harder red-brown sandstone occurs near Penrith forming some of the highest ground in the Vale of Eden, for example Lazonby Fell, where quarries were also known in the 18th and 19th centuries for “superior millstones”.¹⁰ This sandstone could also have provided a source in the Iron Age for the Penrith area and possibly farther afield.

Conclusion

From this brief study of beehive querns it appears that centres of production did exist, although the scale and period of time involved cannot be assessed at this time. The main sources seem to be: Millstone Grit – in the south-east and possibly a smaller more local centre in Urswick: Penrith Sandstone – probably from the Eden Valley: granite erratics with no single source but utilizing a naturally widely distributed material.

A much larger data base and more exhaustive study of the material using petrological analysis where necessary is now required to either corroborate or correct these tentative conclusions. It may then be possible to locate quarry sites and determine a more detailed pattern of exploitation including that of the glacial erratics.

Acknowledgements

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Notes and References

- ¹ R. H. Hayes, J. E. Hemingway, D. A. Spratt, “The distribution and lithology of Beehive querns in north-east Yorkshire”, *J. Arch. Sci.* (1980), 7, 297-324.
- ² C. J. Ingle, “A petrological study of some quernstones from the Bristol region”, *Bristol and Avon Arch. Soc.* (1984), 3, 8-12.
- ³ D. P. S. Peacock, *Iron Age and Roman quern production at Lodsworth, West Sussex*, (forthcoming).
- ⁴ The following contain reports of quernstone finds in the area: CW1, iv, 337-43; CW1, v, 121-3; CW1, vi, 456-80; CW2, iii, 91-3, 419; CW2, iv, 352-3; CW2, ix, 295-309, 328; CW2, xii, 277-84; CW2, xxiii, 206-76; CW2, xxiv, 117-22; CW2, xxvi, 1-62; CW2, xlv, 192-3; CW2, lix, 1-14; CW2, lxiii, 77-95; CW2, lxvii, 241-2; CW2, lxxi, 1-16; CW2, lxxiv, 1-7; CW2, lxxxi, 57; CW2, lxxxiii, 174-5; T. W. Potter, *Romans in North-West England* (1979), CW Research Series; RCHM, *Westmorland*.
- ⁵ S. Caulfield, “The Beehive Quern in Ireland”, *J. Roy. Soc. Antiq. of Ireland* (1977), 104-38.
- ⁶ J. Anstee (Personal comm.).
- ⁷ J. Dobson, “Urswick field names”, *BNFC.*, xvii, 201-3.
- ⁸ CW2, vii, 72-94.
- ⁹ CW2, lxxii, 112-141.
- ¹⁰ *Ibid.*

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