

An Anglo-Saxon mortar-mixer at Bamburgh Castle

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SUMMARY

During the course of his excavations at Bamburgh Castle between 1970 and 1974, Brian Hope-Taylor revealed a substantial oval mortar feature that he referred to as the 'gin gang'. The excavation remained unpublished at the time of his death in 2001. This phase of his excavation work has been revised and freshly recorded by the Bamburgh Research Project since 2000. The mortar feature has been re-evaluated and is now considered to be the remains of a mortar-mixer of early medieval date. It is one of a number of such features known from this period, both within the UK and in continental Europe, associated with high-status secular and ecclesiastical sites.

INTRODUCTION

BAMBURGH CASTLE WAS A MAJOR CENTRE of the Northumbrian royal house from the sixth to the ninth century AD. Anglo-Saxon occupation is traditionally thought to have begun there in the mid sixth century (Morris 1973, 230–31), and by the beginning of the seventh century Bamburgh had become the pre-eminent centre of the Anglo-Saxon dynasty that came to dominate Northumbria (Stenton 1943, 75; Rollason, 2003, 49). The association of the site with this pivotal period in Northumbrian history was a primary motivation for setting up, in 1996, the Bamburgh Research Project (BRP), to study the archaeology of the castle and its hinterland. The work of the BRP has concentrated on survey and excavation within the fortress and on the Bowl Hole early medieval burial ground, located to the south of the castle (Groves *et al.* 2009). The BRP investigations are not, however, the first to be undertaken at Bamburgh in the modern era, as the site had been investigated by Brian Hope-Taylor between 1959 and 1961, and again between 1970 and 1974. He described the first phase of work in two short articles in the *University of Durham Gazette*: the excavation of a trial trench in the centre of the West Ward of the castle (Hope-Taylor 1960), and two further trenches outside the castle gate in the vicinity of the castle's public car park (Hope-Taylor 1962). Unfortunately the later phase of excavation (1970–74) remained unpublished at the time of his death in January 2001.

At the time that the BRP was founded, Dr Hope-Taylor was far from well, and as a result, contact with him was limited to a single phone conversation in 1998. Not surprisingly, the need to understand and expand on the work that he had started featured very substantially in the BRP project design. However, during the early period of our work no records were available, even to identify the size and location of his trenches, and in June 2000 it required ground-penetrating radar survey and a trial trench to locate the 1970s excavation. This situation changed following Dr Hope-Taylor's death, as the Royal Commission on the Ancient and Historical Monuments of Scotland rescued the archaeological archives that had been kept in his apartment. By 2006, some of the finds from the Bamburgh excavation and a digital copy of the surviving records had been returned to the castle.

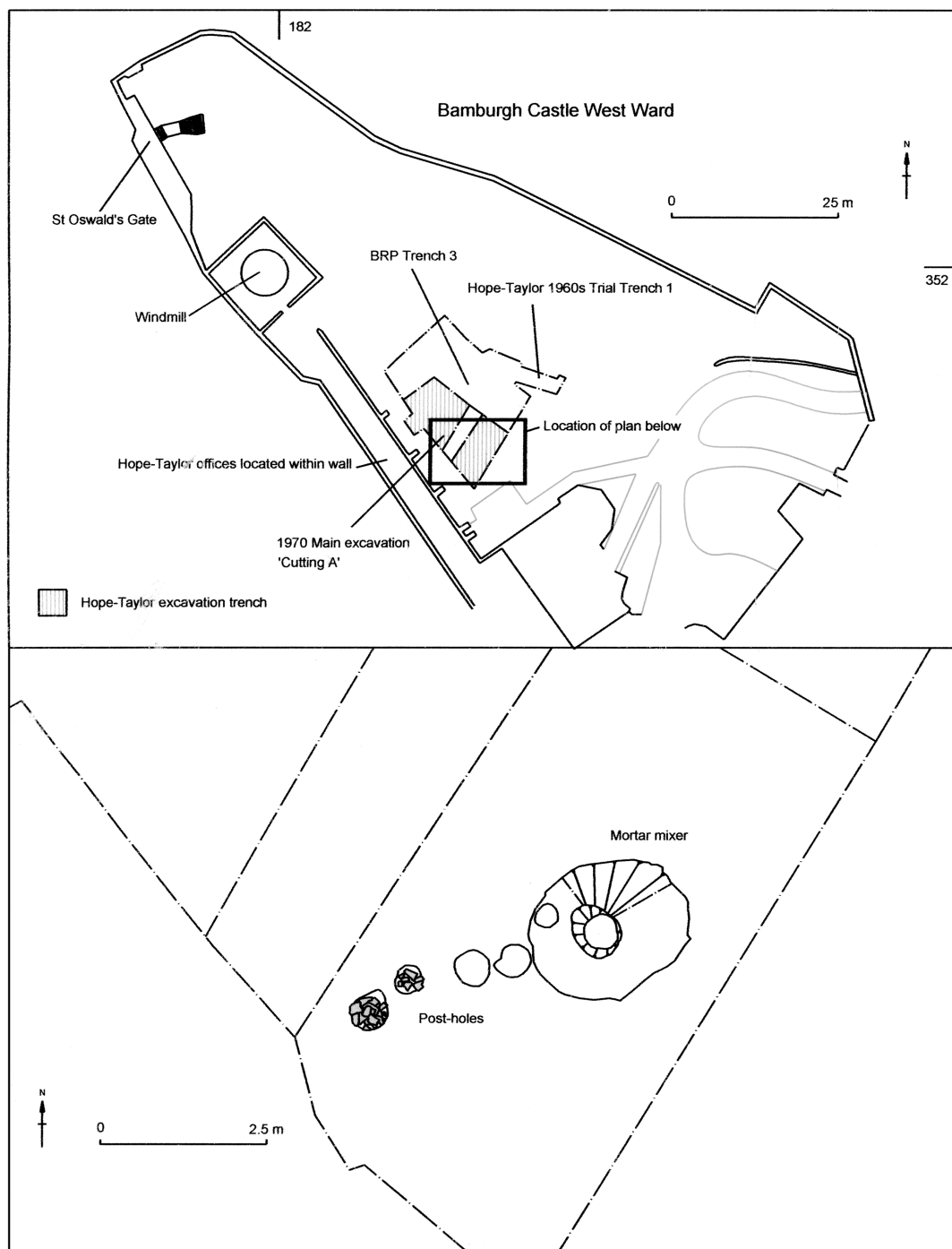


Fig. 1 The West Ward of Bamburgh Castle, showing the outlines of the excavations (top), and the location of the mortar-mixer within the Hope-Taylor excavation (bottom).

The Hope-Taylor archive, and the excavation and recording by the BRP, allows a basic understanding of this earlier work. It is clear that Hope-Taylor's excavation was both extensive and systematic, and that a substantial archive has survived, albeit in a far from complete condition. The attempt to understand his investigations has proved a fascinating and frustrating process. From the re-excavation of the majority of the 1970s' trenches, and from the surviving Hope-Taylor plans, we now know that this excavation was located immediately inside the west curtain wall of the West Ward, just to the north of the Armstrong Museum building (NU 1823 3517; fig. 1a). It had measured 16m from north-west to south-east, and narrowed northwards, being 5.8m at the north-western end and 10 m wide at its south-eastern extent. The ultimate aim is to publish the BRP and Hope-Taylor investigations together, using information from the new excavation to help compensate for the gaps in the Hope-Taylor archive. Although it will be some years yet before such a large body of work can be brought to a successful conclusion, it has become obvious that some features are of such potential significance that they bear earlier publication. The presence of a probable mortar-mixer of Anglo-Saxon date is one such feature.

THE RE-DISCOVERY OF THE 'GIN GANG'

The east side of the trench that Hope-Taylor opened in the 1970s was identified in 2000, within a new trench, measuring 30 m by 2 m and oriented broadly north to south. After this it was a relatively straightforward task to follow the edge during the following season to reveal his two main excavation areas, which were divided by a central baulk. The full trench was emptied (to the base of the original excavation) over several seasons up to 2006.

It was during the 2006 excavation season that the substantial mortar feature that is the subject of this paper was revealed (figs. 1b, 2, 3). Since 2001, when the first elements of the Hope-Taylor archive were discovered at the castle, the BRP had been aware of a feature that Hope-Taylor had referred to as the 'gin gang', a dialect term for an animal-powered circular mill. The relevant part of the archive was recovered when rooms within the curtain wall to the west of the trench were opened by the castle groundsman so that these could serve as accommodation and storage for the new phase of excavation. A mixture of finds, tools and soil samples were revealed, which — from the evidence of the surviving labels — proved to be from the 1970s' excavations. The most intriguing items were four plaster casts: three taken from an archaeological surface, and the fourth bearing a single hoof-print. An accompanying letter (from Charles Baker-Cresswell to Brian Hope-Taylor) described the difficult operation of encouraging a bullock to step in wet plaster; it also included the slaughterhouse certificate for the animal that had provided the specimen footprint (Young 2009). One of Hope-Taylor's finds-labels mentioned a mortar sample and hoof-prints surrounding the gin gang. Given such evidence, it did not take long to connect these pieces of the puzzle together and to identify the plaster casts with the footprints mentioned on the label. Clearly Brian Hope-Taylor had thought to preserve the evidence of the operation of the mill from the hoof-prints that he had identified in the surface surrounding it (fig. 3), before these layers were themselves excavated (fig. 2).

The mortar feature itself was found to be oval in plan and between 2 m and 2.4 m in diameter. One part of it, on the north side, had been excavated as a quadrant by Hope-Taylor. The 'gin gang' proved to be a concave bowl-shaped cut that survived to a depth of 0.44 m towards the centre. The base of the cut was flat and sloped only very gradually down to a



Fig. 2 The mortar-mixer, photographed by Brian Hope-Taylor, 1970–74.
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slightly lower level towards the centre of the feature. The sides were steep, not far from vertical, with the change of angle between the side and the base occurring over a short curve. No trace of a lining was evident on the Hope-Taylor photographs or during the re-examination of the feature by the BRP. Our best interpretation is that it represents a simple cut feature. The fill of the bowl was a cream-yellow mortar with a high pebble content. Slightly offset to the west of its centre was a substantial pit containing large rounded stones. Whilst it is tempting to see this feature as marking the position of a central post to which a traction animal was attached, its size, form, and the presence of a series of similar pits extend-



Fig. 3 Hoof-prints in the surface surrounding the mortar-mixer, photographed by Brian Hope-Taylor, 1970–74. © Crown copyright: RCAHMS.

ing to the west make it much more likely to be a later feature cut into the mortar, very probably removing any trace of such a central post.

Although Hope-Taylor had excavated the stratigraphy surrounding the mortar, other layers survived intact, both in the baulk directly to the west and in the area of the BRP excavation to the north. The level that the BRP excavation has reached can be dated with confidence to the mid to early ninth century, based on a substantial number of styca coins, including a hoard, and other small finds (Young and Castling 2011, 311–13). This level is substantially above that from which the bowl-shaped depression containing the mortar had

been cut and this would therefore indicate, at least superficially, a date no later than the eighth or early ninth century for this feature.

Given the 'gin gang' label Hope-Taylor had given it, it seems that he regarded the feature as a mill, powered by a horse or an ox which was harnessed to a beam that extended from a central post. The animal would have walked around in circles in order to power the mill. The use of this label may also reflect the simple fact that he was excavating in the early 1970s, before many comparable features had been excavated, and before the term mortar mixer had become established in archaeology.

The most recent report on mortar mixers in Europe (Stelzle-Hueglin 2007, 5–8) lists 47 examples from 29 different sites, dating from the fifth to the eleventh centuries, from Belgium, Switzerland, Germany and Poland. In Britain there are early-medieval examples recorded from Northampton (Williams 1985, 113–36), Dunbar (Perry 2000, 64–75), Wearmouth (Cramp 2005, 31, 93–5), and from two sites in Oxfordshire, Eynsham Abbey (Hardy *et al.* 2003, 73–6, 487–9), and St Peter's Church, Wallingford (Soden *et al.* 2005). These examples are comparable in size and morphology to the Bamburgh example. Thus the re-discovery of the probable mortar-mixer at the royal site of Bamburgh should come as no great surprise.

The context in which these mortar-mixers are found is markedly similar. The continental and British examples listed above (with the possible exception of St Peter's Church at Wallingford), are found associated with high-status ecclesiastical and/or royal sites. The ideas, fashions, techniques, and the masons themselves, associated with stone architecture, would have spread through ecclesiastical and royal networks. Their appearance in Britain is probably connected to the endeavours of high-status ecclesiastics (such as Benedict Biscop) who were actively seeking to copy the stone architecture and the practices of the continental Roman church (Cramp 2005, 31). The earliest example of a mortar-mixer is in fact found at Benedict Biscop's monastic site at Wearmouth. The discovery of two mortar-mixers there, the first of which dates to the initial construction phase in AD 674 — and numerous examples of mortar adhering to walls and floors — indicates that this was a fundamental process in the construction of this early, high-status, monastery (Cramp 2005, 93–5).

Slightly later examples from the kingdom of Northumbria include the mortar-mixer found at Bamburgh and the single example found at the royal site of Dunbar, East Lothian. The latter, when considered alongside the associated structures and finds, suggests a high-status site, dating no later than the mid ninth century (Perry 2000, 64–72). However, the function of the building with which the mortar-mixer is associated by proximity to the east wall, is not clear. It had dimensions comparable to the surviving seventh-century church at Escomb, in County Durham, and it was aligned east to west (Perry 2000, 73–5), perhaps indicating that it was an ecclesiastical building. This would not be unusual on a royal site such as Dunbar, as we know that the Northumbrian kings had churches at other royal sites, such as Yeavering and Bamburgh (Hope-Taylor 2010, 73). Alternatively, the building at Dunbar may have been a royal hall, although this would have been highly unusual during this period, as most known royal halls were made of wood. The only other comparable site with mortar-mixers is that in Northampton, which also dates to the early ninth century. Five examples were excavated, associated with the re-building of a putative stone palace and an ecclesiastical complex (Williams 1984, 113–36). However, John Blair (2005, 204–12) has argued that the palace may have been the central building of a 'great monastic site', and that it need not have been secular at all.

These examples suggest a strong link between the church and the construction of stone buildings. They also suggest the possibility of the appropriation of this technology by the

secular ruling elite. The cluster of mortar mixers in the kingdom of Northumbria, (Wearmouth, Dunbar, and Bamburgh) may suggest that the kings were appropriating these skills and were building themselves stone halls at their royal centres. After all, the royal courts of Anglo-Saxon England had a close bond with the church, and many of the royal houses provided the ruling ecclesiastics of the time (Blair 2005, 84–91).

CONCLUSIONS

The presence of an early medieval mortar-mixer at Bamburgh has clear implications for the building techniques employed on this important secular site in this period. Bede provides a narrative of the re-introduction of mortar-bonded stone building techniques from Gaul in the context of the construction of the churches of Wearmouth and Jarrow, and the excavations there have provided ample archaeological evidence to support this (Cramp 2005). Direct evidence for an extensive phase of stone construction at Bamburgh at such an early date is limited to the stone walls, earlier than the twelfth century, that were identified during trial-trenching by the BRP in and around the chapel in the Inner Ward (Kirton and Young, forthcoming), and to a robber-trench, apparently for a stone building, within pre-twelfth century stratigraphy in Trench 1, adjacent to St Oswald's Gate, at the northern end of the castle. Taken together with the identification of the probable mortar-mixer, it is possible to hypothesise that the repertoire of stone and mortar construction had been adopted from the ecclesiastical world into the secular royal court of Northumbria, and that it was probably used in the construction of high-status ecclesiastical and/or secular buildings on the site before the middle of the ninth century.

The Hope-Taylor excavation has been re-recorded, and covered with a permeable membrane and by a thin layer of soil to help preserve it until the BRP excavation reaches the same levels. We are yet to identify the structure that the mortar-mixer at Bamburgh was first used for, nor is it yet clear whether it was servicing the royal palace itself or its associated ecclesiastical buildings. In future seasons the stratigraphic relationship of the mortar-mixer with the wider site will be more clearly understood; this can only help to cast light on the wider debates surrounding the introduction and use of stone buildings in the Anglo-Saxon period.

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