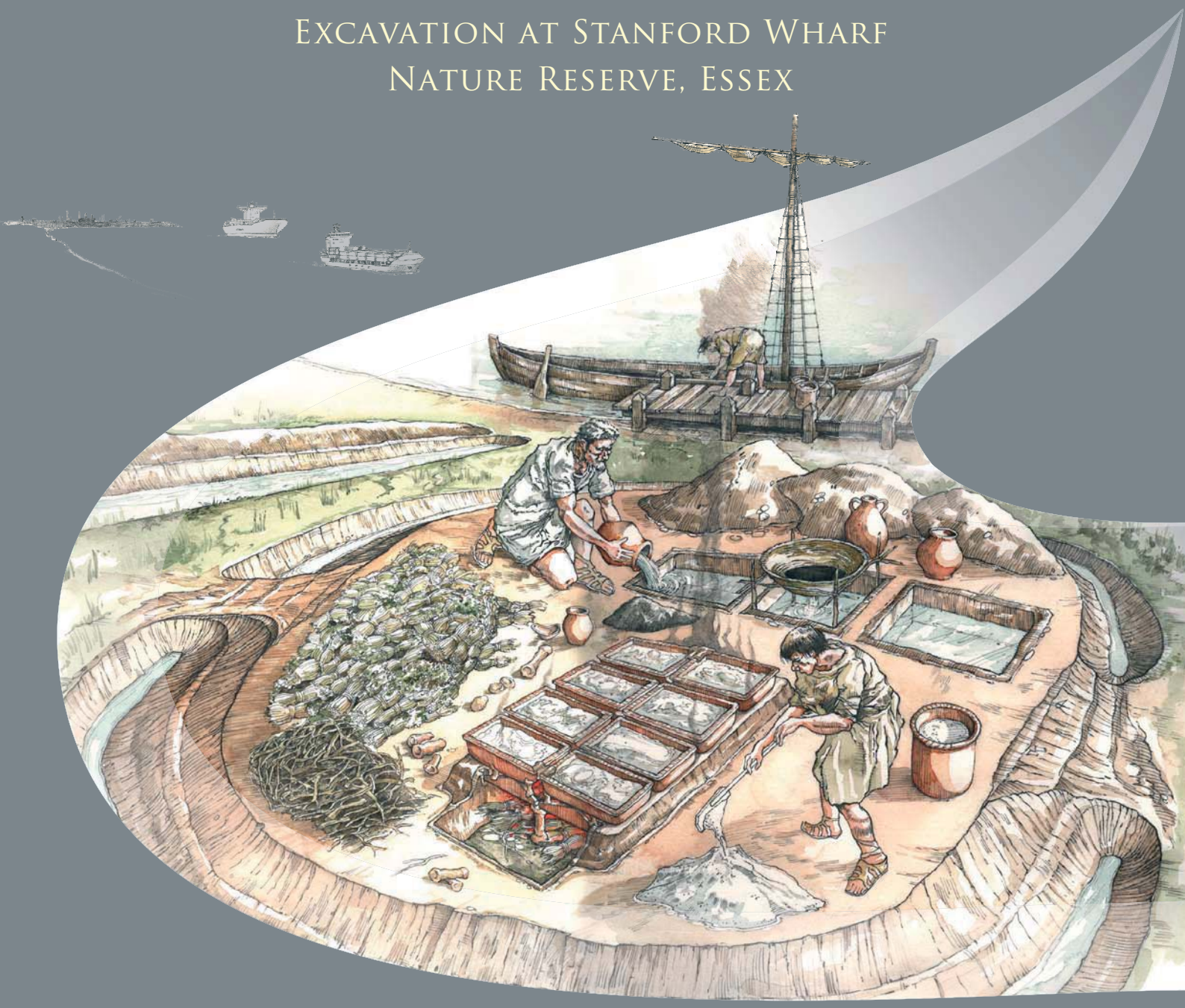
London Gateway

Iron Age and Roman Salt Making in the Thames Estuary

Excavation at Stanford Wharf Nature Reserve, Essex



Specialist Report 10

Worked Stone

by Ruth Shaffrey

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Description

The assemblage of worked stone includes an estimated 11 rotary querns or millstones made from lava and Millstone Grit. Some of the lava querns are fragmentary, but probably joined and have been counted as a single item when they are from the same context. There are also two whetstones, a piece of worked chalk and blocks of chalk and greensand. With the exception of a fragment of worked chalk of indeterminate function from ditch 1649 (1648), all the dated worked stone was retrieved from late Roman contexts.

The three lava querns are all weathered but can be identified as of flat disc type, and although none have the wide kerb typical of lava querns, one has a clear line demarcating a kerb (Fig. 10.1, SF 1503). This is not typical of lava querns and does not fit into the existing lava quern typology (Crawford and Röder 1955), although it has been observed on a quern from a 3rd century deposit in Carlisle (Shaffrey 2009, 877) and on two querns from the Tees valley (Gwilt and Heslop 1995, 43). This quern adds substance to the theory that the current lava quern typology may need updating (ibid.). Radial grooving (possibly harped) survives on one example (SF 1007), while the third has a wide concentric groove on the grinding surface indicating that it was paired with a smaller lower stone (SF 1509). The most complete example (SF 1503) was from a late Roman phase 2 (LR2) deposit of dumped material (1539), also containing a significant quantity of pottery.

Eight querns are probable Millstone Grit, although one with a less certain identification (Fig. 10.1, SF 1566) is of a slightly different form to other Millstone Grit querns and has poorly incised harped grooving on the grinding surface, with which this form is not typically associated. The grooving may be in imitation of lava querns. Some of the Millstone Grit querns may be from mechanically operated millstones, although the fragments are too small to be diagnostic. There is no structural evidence of a mill on site, but millstones of Millstone Grit were also found at nearby Mucking (Buckley and Major forthcoming) and in early Roman contexts at Northfleet villa, just across the river, where an early Roman malt mill probably

existed (Shaffrey 2011, 371.2; Biddulph 2011, 224). Millstones could have been brought to Stanford Wharf for reuse from either of these locations, or elsewhere (see discussion).

Other worked stone includes two whetstone fragments of micaceous sandstone, possibly Reigate stone (Fig. 10.1, SF 1009 and SF 1603). These were probably associated with metalworking, for which other evidence was also found on the site, although one was recovered from a dumped layer (1111) and the other was a surface find (1416).

Four large blocks of greensand were recovered from dumped deposit 6228, as well as SF 1507 from ditch fill 5101 (blocks omitted from catalogue). None of these blocks have tool marks or indications that they were humanly modified, but were presumably intended for structural use. They are of a similar size to roughly hewn chalk blocks used in groups to form substantial post-bases associated with structure 5760 (5754, 5230, 5906), so the greensand blocks may have served a similar purpose. Greensand was widely used in Essex for building purposes during the Roman period (Major 2003, 87). Chalk deposits are mostly concealed in Essex, but minor outcrops do occur at nearby Grays. Chalk has more recently been quarried at Purfleet (Lucy 1999) and the chalk need not have been moved any great distance. A fragment of worked chalk of indeterminate function hints at the possibility that at some point the chalk was being shaped on site (1648, not in catalogue).

Catalogue of worked stone

Rotary quern fragment. Lava. Three fragments, probably adjoining. Tapered to centre but weathered so not clear if upper or lower stone but with radial grooving on one surface. Measures 35mm thick. Weighs 517g. Area A. SF 1007. Finds reference (6720). Unphased.

Upper rotary quern fragment. Millstone Grit. Thin disc type with flat parallel faces and rounded slightly damaged edges. Measures 28mm max thickness. Weighs 348g. Area B. Fill of ditch 4266 (4294). LR

Lower rotary quern or millstone fragment. Millstone Grit. Fragment with deep parallel grooves, probably harped. Measures 48mm thick. Weighs 605g. Area A.

Redeposited alluvial material, ctx 5250. LR2

Lower rotary quern or millstone fragment. Millstone Grit. Some concentric grooving on the grinding surface. Measures 48mm thick x indeterminate diameter although the curvature suggests it is a millstone. Weighs 728g. Area A. SF 1513. Large cessy dumped deposit coming down onto red hill (5136). LR

Upper rotary quern (Fig. 10.1). Lava. Disc style quern in 10 fragments with slightly angled but parallel faces. All the faces are worn but the upper surface has a thin line demarcating the kerb. Narrow circular cylindrical perforation. Measures 420mm diameter x 43mm thick. Weighs 5427g. Area A. SF 1503. Dumped deposit 1539. LR2

Probable quern fragment. Millstone Grit. Small fragment with one flat worked surface. Weighs 200g. Area A. Dumped deposit 1539). LR2

Rotary quern. Lava. Slightly weathered fragments. Centre missing. Pecked upper and lower faces, although the grinding surface is worn with a wide concentric groove towards the rim suggesting pairing with a differently sized stone. The edges are straight but lean in slightly with vertical grooves. Measures 44mm max thickness. Weighs 593g. Area A. SF 1509. Floor surface. Ctx 5041. LR2

Lower rotary quern fragment. Millstone Grit. Deep regularly spaced radial grooves, probably harped, on grinding surface. All edges damaged. Measures 31mm thick. Weighs 452g. Area A. Primary fill of ditch 6682 (6676). LR1

Upper millstone or rotary quern fragment. Millstone Grit. Deep regularly spaced and harped radial grooves on grinding surface. Possibly a millstone. Measures 42mm max thickness. Weighs 937g. Area A. Primary fill of ditch 6682 (6676). LR1

Upper millstone or rotary quern fragment. Millstone Grit. Burnt and stained orange. Grinding surface is heavily worn smooth but traces of the harped radial grooving survive. Measures 35mm thick. Weighs 1470g. Area A. Primary fill of ditch 6682 (6676). LR1

Upper rotary quern fragment (Fig. 10.1). Possibly Millstone Grit. Damaged and charred. Top is flat/slightly rounded with a rough shallow bowl shaped hopper. Grinding surface is also slightly concave with harped grooves. Eye is circular (damaged) and hour glass. Measures approximately 420mm diameter x 58mm max thickness. Weighs 6204g. Area A. SF 1566. Possible remains of oven structure 5551 (5949). LR2

Whetstone (Fig. 10.1). Probable Reigate stone. One damaged end. Oval cross section with some bevelling through use. Measures >73mm long x 27 x 21mm. Weighs 81g. Area A.SF 1603.surface finds. Ctx 1416. LR

Whetstone (Fig. 10.1). Probable Reigate stone. Primary whetstone, with one end damaged. Oval cross section with some bevelling through use. Measures >91 x 20 x 16mm. Weighs 53g. Area A.SF 1009. Ctx 1111, deposit of briquetage spread across area. R

Worked stone of unknown function. Slightly micaceous pale grey quartz sandstone. Shaped on several faces. Possibly used as a hone or alternatively may be part of a statuette. Measures approximately 30 x 40 x 25mm. Weighs 76g. Area A. Burnt dump of demolition material including salt encrusted briquetage (5489). R

Discussion

Querns are normally taken as evidence of domestic occupation, in the sense that as they were normally used to grind grain into flour, they indicate the processing of food. However, in the context of Stanford Wharf, it seems unlikely that they can be related to food production, as there is little in the way of other evidence for domestic or occupational activity. If they were used for grinding here then an industrial purpose seems likely, although precisely what is unclear. An alternative is that the querns were not used for grinding flour or other substances at Stanford Wharf and instead were brought onto site for structural or other purposes. While most were found in dumped deposits in ditches, at least two were recovered from structural positions: one in a floor surface (5041) and another in a possible oven structure (5949).

The quern materials of Millstone Grit and Lava are typical of Essex. The origin of both stone types is some considerable distance away, with approximate sources in Derbyshire and Germany. However, it is most likely that the querns/millstones at Stanford Wharf came from a much nearer secondary source. Irrespective of whether they were brought to the site for an industrial purpose or simply as rubble for reuse, this source was probably somewhere very nearby. One possible source for them is the Roman-period settlement at Mucking where excavations produced the largest assemblage of querns from any excavation in Essex, totalling in excess of 300 fragments (Buckley and Major forthcoming). The two most common materials within the assemblage are Millstone Grit and lava (although one has to be cautious with inter-site comparisons of lava querns, which are variously quantified by fragment count, weight, or number of contexts depending on fragmentation). Another possible source is the town of Springhead, just across the River Thames, where both lava and Millstone Grit were common quern materials. A positive link between the sites cannot be determined by analysis of querns, although a connection between Springhead and nearby Mucking is indicated by the high numbers of ferruginous puddingstone querns at both sites (Buckley and Major forthcoming; Shaffrey 2011). It is rare to find querns of ferruginous puddingstone, so the high numbers at Northfleet and Mucking are striking and indicate a cross-river link between Mucking and Northfleet (Shaffrey 2007).

At Stanford Wharf, the probable Reigate stone whetstones are likely to have been transported from north Kent. If salt and other goods such as garum were being shipped across the river to Springhead, then broken querns and building stone would have made ideal ballast on the return journey. It is not possible to determine precisely where the querns came from but it is highly likely they came from an intermediate source such as Mucking on the north side of the river or Springhead or Northfleet on the south side.

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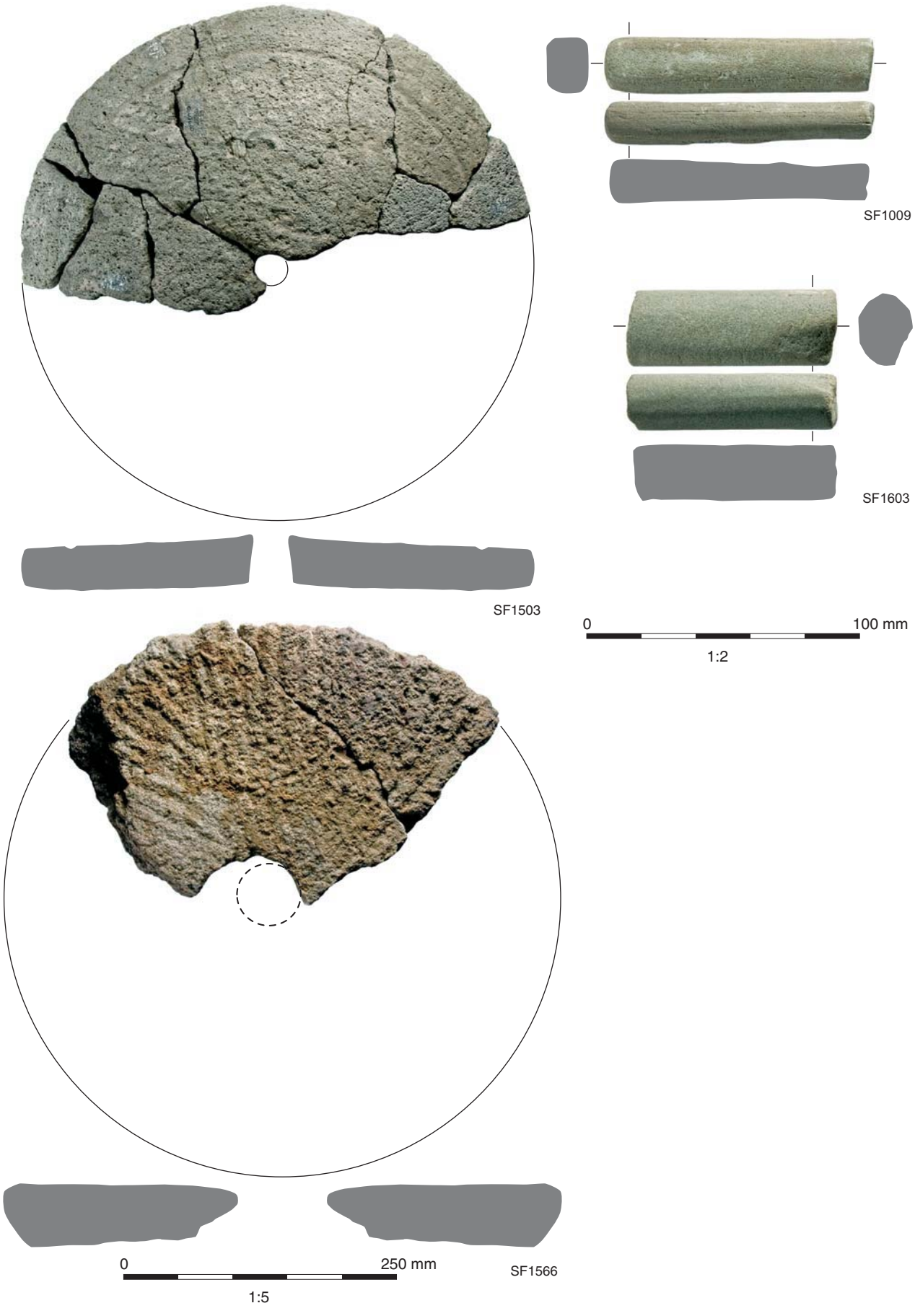

Figure 10.1: Worked stone

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