

CHAPTER 25

Worked stone



by Ruth Shaffrey

25 Worked stone

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A total of 85 stone objects was recovered from all phases of activity at Stansted; a summary of these is provided in Table 25.1 and selected artefacts are illustrated in Figure 25.1. Approximately two thirds of the worked stone (68%) was used for corn grinding, starting with saddle querns, and progressing to rotary querns, millstones and mortars. There are also eight hammerstones, seven whetstones and 12 miscellaneous items including two polishing stones (probably pot burnishers), two spindlewhorls and one Roman weight. These are discussed according to each major period.

Early prehistoric

A single probable hammerstone was found in an Early Neolithic tree-throw (429001 fill of 429002). This utilises an unusual type of Hertfordshire Puddingstone, very different to the variety used during later phases, with this specimen being formed of grey pebbles in a grey matrix. It is presumably from a different source, although it has not been possible to pinpoint where.

Bronze Age

A total of twenty worked stone objects were retrieved from Bronze Age contexts. These include eight rubbers, six hammerstones, two grinding stones, two probable quern fragments, one point sharpener and one item of unknown function. A limited range of lithologies were utilised, mostly fine grained quartzitic and sometimes micaceous sandstones, all probably acquired locally. The majority of these are types of Tertiary sandstone, which occurs just to the north of the airport (Ellison and Zalasiewicz 1996, 93) and which was used in particular for saddle querns and rubbers. Quartzite and vein quartz pebbles from the nearby boulder clay (Millward *et al.* 1987, 35) were also used for hammerstones and a single quern fragment is made from Hertfordshire Puddingstone.

The saddle quern of Hertfordshire Puddingstone particularly stands out because it is a lithology more commonly utilised for rotary querns during the early Romano-British period and saddle querns of it are hitherto unknown from contexts of Bronze Age date. Only a few saddle querns of Puddingstone have been found in Essex in any period (Major pers. comm.; Buckley and Major 1995, 72), and all are from Iron Age or later dated contexts. They include only one from Little Waltham (Drury 1978, 112), and two probable examples from Boreham, near Chelmsford (Tyrell 1999, 19) and Woodham Walter (Buckley and Hedges 1987, 16).

Saddle querns of all lithologies, not just Puddingstone, are rare finds in Essex and the majority are of Greensand from the southern part of the county (Buckley 1988, 73-4). Twelve fragments were produced in previous excavations at Stansted but all were small and could just as easily have been from rubbers as saddle querns (Major 2004a 34). The presence of two other saddle quern fragments from later contexts and probably of prehistoric origin (although not necessarily Bronze Age), are therefore of interest. There is one from a late Romano-British context (primary fill of ditch

335024) and one from topsoil (424001). The latter appears to have been made from a boulder but has a grinding surface prepared by pecking, while the former has a concave grinding surface that has been worn smooth through use.

Other Bronze Age finds include six hammerstones all utilising quartz and quartzite pebbles which were discarded in pits (2604, 309066 (Fig. 25.1, no. 9), 3204, 322014 and 345052) and a point sharpener from a Middle Bronze Age fill of waterhole 302001. This has been used on two faces (Fig. 25.1, no.1) but it is not a shaped artefact and makes use of a rough piece of stone. Six items, all either rubbers or grinding stones, were found in placed deposits; five were in 334063 (fill of 334059) and one was in 316086 (fill of 316085). The condition of none is remarkable, which makes their deliberate deposition rather puzzling and it is likely that they were of minor significance in relation to other deposited items.

Iron Age

Only four rubber fragments were recovered from Middle Iron Age contexts. No noticeable change was visible in the exploitation of stone from the Bronze to the Iron Age: the same lithologies continued to be used. The presence of rubber fragments indicates that domestic food preparation was taking place although no saddle quern fragments were recovered.

Seven objects were recovered from Late Iron Age contexts, including three quern or rubber fragments, two whetstones, one pot burnisher and one incised chalk fragment. The three quernstones are made from micaceous sandstone, Greensand and Hertfordshire Puddingstone; the latter being the only definite rotary quern. Two unworked fragments of Puddingstone were also found (140029 and 431039) and since Puddingstone had to be imported to the site, these fragments either represent broken up querns or waste from quern production/repair. The presence of a Puddingstone rotary quern in a late Iron Age/early Romano-British context (433025, intervention 433020, ditch 433033) is unusual, as few rotary querns of any material have been found in certain pre-Roman contexts in Essex (Major 2004d, 135). Evidence for the Iron Age use of Puddingstone has been seen only at Ivy Chimneys (Buckley and Major 1999, 115). The presence of Puddingstone at Stansted is perhaps less surprising given its Bronze Age use, however, for it continues the same patterns of exploitation.

The early use of, and familiarity with, Puddingstone at Stansted might also help explain why there is evidence for the early use, and possibly manufacture of, rotary querns in general at the site. The presence of a stratified pre-Roman rotary quern compliments one recovered during previous excavations at Stansted (Major 2004d, 135) and further evidence for the Iron Age use of rotary querns here is also suggested by a complete Greensand rotary quern (SF 103; Fig. 25.1, no. 4). This was unfortunately recovered from the ploughsoil on the LTCP site, but it is of the same design as rotary querns known to be of Iron Age date, such as one seen at Ivy Chimneys, Witham (Buckley and Major 1999, 115) and it is therefore very likely to date to this period.

Stone was utilised on the site for more than just grinding and two whetstones were also recovered. One of these is a secondary whetstone (Shaffrey in prep); it made use of a large slab of stone which now has a worn surface and it is of a type probably used

for the sharpening of smaller blades (Parkhouse 1997, 419). The second whetstone is of some note. It is a complete primary whetstone of an unusual flat diamond shape with a small piercing in one of the corners (Fig. 25.1, no. 7). It was mostly utilised across the face but the edges are also worn indicating that it was used for the sharpening of a number of different tools. The piercing suggests it was suspended from a tool belt and it was probably a personal belonging rather than from a workshop, hence its inclusion in the deliberate backfill of a cremation (151005 fill of 151004). A single polishing pebble, probably a pot burnisher, was also found in a placed deposit, this time in a ditch fill (439050, intervention 439047, ditch 433054). A small fragment of chalk, found in 439048 (intervention 439047, ditch 433054, Fig. 25.1, no. 2), appears to have been deliberately incised in a similar way to a number of chalk pieces found in various contexts at Avebury (Smith 1965, 134 and fig 57).

Romano-British (including Late Iron Age/ early Romano-British transition)

A total of 23 stone items were retrieved from Romano-British or late Iron Age/Roman contexts. These include two possible whetstones, four rubbers, fragments from four millstones and six rotary querns, one saddle quern, two indeterminate quern fragments, one probable spindlewhorl or personal ornament, one hammerstone and one weight. A variety of lithologies were exploited and alongside the locally available quartzites, chalk and Tertiary sandstones of earlier phases, it is during the Romano-British period that imported stone first appears at Stansted in the form of lava and Millstone Grit. Both materials were extensively imported to the region at this time and it is therefore no surprise to find them at Stansted. The more local stones such as the Tertiary sandstones continued to be utilised, in particular finer grained varieties, which were found to be suitable for whetstones.

Rotary querns and millstones

All the grinding equipment was recovered from the fills of ditches, gullies and pits. Of the ten probable rotary querns or millstones, six are made from Millstone Grit (plus the two indeterminate fragments), three are made from Niedermendig lava and one is made from Hertfordshire Puddingstone. Lava fragments were found in three contexts (347019, 6309 and 323014); they are all very weathered fragments so it is difficult to be sure precisely how many querns they formed originally, but they are few in number and three querns therefore seems plausible.

Millstone grit was used for half the rotary querns and all the millstones and appears to have been the material of choice for grinding at Roman Stansted. Millstone Grit was utilised in some form on the majority of sites in Essex and was the dominant material on others nearby including Church Langley, Harlow (Medlycott 2000, 61). Whether the predominance at Stansted is due to actual patterns of use, or to patterns of survival, is difficult to say, but as the lava fragments are all very weathered, it would be inadvisable to read too much into the numbers retrieved.

Technology

Six potential millstones were recovered from both the MTCP and LTCP sites. Of these, three are only tentatively identified as such – they are very thick but their diameters are indeterminate and it is therefore possible (but unlikely) that they could

be thicker than usual rotary querns. Two millstones are of small to average size (600-750 mm in diameter) and late Roman in date, having been recovered from late Roman enclosure ditch 143007 (context 143007, intervention 143001 and context 152005, intervention 152001) while a third is of similar size (SF 1046) but unstratified. Interestingly, having been imported to the site from Derbyshire, the two Roman millstones imitate the lava querns in having a raised kerb around the upper outer rim – a purely stylistic and non-functional feature (SF 362 Fig. 25.1, no. 8). Millstone Grit querns with kerbs are unusual but there are other examples from Essex including Stebbing Green (Major 1999, 17) which is close to Stansted (see Major 2003, 87 for a review of these). It may be that there was more imitation in the eastern counties closest to where lava querns entered the country.

The presence of millstones at Stansted suggests a fairly substantial Roman settlement with some kind of centralised organisation and the difference in millstone size indicates the presence of more than one mill (whether simultaneous or sequential is impossible to say). No structural evidence for mills was found at either site, but two small watercourses which traversed the site (Pincey Brook and the Stansted channel) might have provided the water to operate a mill if animal power were not used.

Other worked stone

Amongst the Late Iron Age/early Roman assemblage are eleven other stone objects including some material which is likely to be residual from earlier phases of activity such as one saddle quern (from the fill of late Romano-British ditch 344052 (intervention 335024) and four rubber fragments. There are also two whetstones of the tertiary sandstone used during the prehistoric period. Both whetstones utilise existing slabs of stone, rather than being primary whetstones shaped to serve that purpose. This is in keeping with the rest of the county which has produced very few primary whetstones (Major 2003, 88).

The other items of worked stone include a possible palette and a chalk spindlewhorl (SF 879, not illustrated). The palette is not a shaped stone but is a flat slab that appears to have been utilised. A small flat-bottomed bun-shaped object (SF 26; Fig. 25.1, no. 6) retrieved from the secondary fill of late Romano-British ditch 306165 (context 6526, intervention 6525) is probably a weight. It resembles almost exactly an object found in a Romano-British context at Little Waltham (Drury 1978, 112 and fig 65) which was also interpreted as a weight and another similar but more crudely fashioned weight from an Iron Age context at Birdlip in Gloucestershire (Parry 1998, 61). The example from Stansted weighs 155 g but is slightly damaged and in its complete form would probably have weighed the same as half a Roman libra (168 g, Parry 1998; Frere 1972, 160).

Medieval and post-medieval

The bulk of the medieval worked stone assemblage consists of rotary quern fragments, all of lava and mostly very fragmentary. These were retrieved from nine contexts, mostly pit and ditch fills, though some fragments were also found in hearth 324002. This sole use of lava for rotary querns fits well with the evidence from previous excavations at Stansted and in the county as a whole, which have shown that in Essex medieval rotary querns are, almost without fail, made from Lava (Major

2004g, 397). In addition, there is a single small perforated object (SF 255, Fig. 25.1, no. 5) which may have been a spindlewhorl or, as it is rather irregular in shape, a piece of personal ornament.

The post-medieval worked stone assemblage is small but comprises two rotary querns, one whetstone, one mortar and one probable pot burnisher. Both rotary querns are made from Niedermendig lava; one was found in a midden layer (457014) and the other in the backfill of ditch 449089 (459016, intervention 459014). Both were well used but had been finely grooved on the grinding surface. The whetstone is in three fragments (having been broken in antiquity but deposited together in the deliberate backfill of construction cut 461038) and is made from a probable Greensand (Fig. 25.1, no. 3). It is a long rod type with square cross-section which has been worn to rounded edges through use. The probable pot burnisher was found in the fill of ditch 326081 (intervention 309133), where it may have been redeposited from an earlier phase; it is not worked but is a well rounded pebble, used sufficiently to create polish on one surface.

A single Purbeck Marble mortar (SF 1379, Fig. 25.1, no. 10) was found in the cessy fill of a garderobe at the hunting lodge (LTCP), reinforcing the suggestion that this was a fairly high status establishment. A second (Jurassic limestone) mortar is unphased but utilises the same stone type as a single fragment of building stone, which may be part of a post-medieval doorway or porch. None of the post-medieval worked stone is unusual either in the types of objects retrieved or in the material used.

Discussion

The excavations at Stansted have produced a broad range of worked stone artefacts from all periods. These provide evidence of domestic activities including food preparation (querns, rubbers, palette and mortars), industry (whetstones, pot burnisher, hammerstones, a weight) and personal belongings (a possible pendant for a necklace).

The main lithologies utilised at Stansted were Tertiary and other sandstones along with Greensand, Lava, Millstone Grit and Hertfordshire Puddingstone. The patterns of use varied with time as some lithologies came in or out of use. Hertfordshire Puddingstone, for example, appears to have been used sparsely but throughout all the earlier periods of occupation with worked pieces from Bronze, Iron Age and Roman contexts. Additional unworked fragments were also found, suggesting that the stone may have been brought to the site as a raw material and worked there, rather than finished objects being acquired. The recovery of stratified saddle querns of Hertfordshire Puddingstone from Bronze Age contexts and of rotary querns from Iron Age contexts are of particular interest as the latter are rare and the former are hitherto unknown.

It is difficult to be sure of a precise source for Hertfordshire Puddingstone as it can be found in many locations, both as outcrop and in the form of glacial erratics and although it was known locally, near Bishop's Stortford (Potter 1998, 290), it occurred mainly between Chesham and Ware (Ellison and Zalasiewicz 1996, 106). With the exception of one Mesolithic or Neolithic fragment which differs, the type of Puddingstone found at Stansted is consistent throughout all periods, a cream coloured

matrix containing dark flints with iron stained rims. This type is very similar to that found at nearby excavations along the route of the A120 (Shaffrey 2007) and it seems likely that the stone came from a similar source.

In contrast to the Hertfordshire Puddingstone, Niedermendig Lava was first introduced to the region during the Romano-British period and appears in all subsequent phases, either as identifiable rotary querns or more commonly in the form of small weathered fragments. All the identifiable querns are from medieval or post-medieval contexts but at least one is of Roman design (301001) and is therefore probably residual. Lava is a material that is easily broken down by weathering so it is not unusual to find only small fragments as evidence that rotary querns of it existed. Other materials appear to have been utilised at more specific times, notably the Millstone Grit which was only found in Roman contexts.

In general, the types of stone utilised at Stansted are comparable to other sites in the vicinity although the evidence for the early use of Hertfordshire Puddingstone is of particular interest. The technological range of artefacts is broad and includes items of high status (the Purbeck Marble mortar) and unusual finds such as the stone weight. In addition, the assemblage indicates the high significance and long tradition of food preparation in the area (ie flour production) starting with rare finds of stratified Bronze Age saddle querns and progressing to unusual finds of early rotary querns. This theme continues with the recovery of a number of millstone fragments indicating central organisation and management.

Catalogue of illustrated worked stone objects

1. MTCP (BAAMP00), context 302004, Point sharpener
2. M11 (BAALR00), context 439048, Worked fragment
3. LTCP (BAACP01), context 461027, Two whetstone fragments
4. LTCP (BAACP00), context 101001, SF 103, Complete upper rotary quern
5. FLB (BAAFL00), context 401013, SF 255, Possible spindlewhorl
6. MTCP (BAAMP99), context 6526, SF 26, Weight
7. LTCP (BAACP00), context 151005, SF 356, Pierced whetstone
8. LTCP (BAACP00), context 143006, SF 362, Two fragments of upper millstone
9. MTCP (BAAMP00), context 309067, Hammerstone
10. LTCP (BAACP01), context 447012, SF 1379, Mortar rim fragment

Appendix 1: thin section

A medium-grained, moderately well sorted quartz sandstone mainly comprising polycrystalline quartz, feldspars and clays. It has been subject to pressure solution and compaction with the result that it has very low porosity and deformed mineral edges. It is largely cemented with clay, some of which has formed from the weathering of feldspars; the remaining feldspars are mainly orthoclase with some plagioclase. Rarer minerals include microcline feldspar, muscovite and a ?hornblende; there are also very few rock fragments. The combination of the pressure solution, high clay but low haematite and rock fragment content, along with the presence of microcline, mean this is not a fragment of Old Red Sandstone from either South Wales, the Wye Valley,

Portishead or the Mendips (Saunders 1998). It seems most likely that it is Millstone Grit but it is not an absolute identification without detailed microscopic study of Millstone Grit.

Table 25.1: Summary of stone artefacts by period

Phase	Grinding	H/stone	W/stone	Other	Other type	Total
Early prehistoric		1				1
Bronze Age	12	6	1	1	Unknown	20
Iron Age	7		3	2	1 pot burnisher, 1 incised piece	12
LIA-ERB	4		1	1	Palette	6
Romano-British	14	1	1	2	1 spindlewhorl, 1 weight	18
Medieval	10			1	1 possible spindlewhorl	11
post-medieval	3		1	2	1 pot burnisher, 1 architectural	6
Unstratified	8			3	3 unknowns	11
	58	8	7	12		85

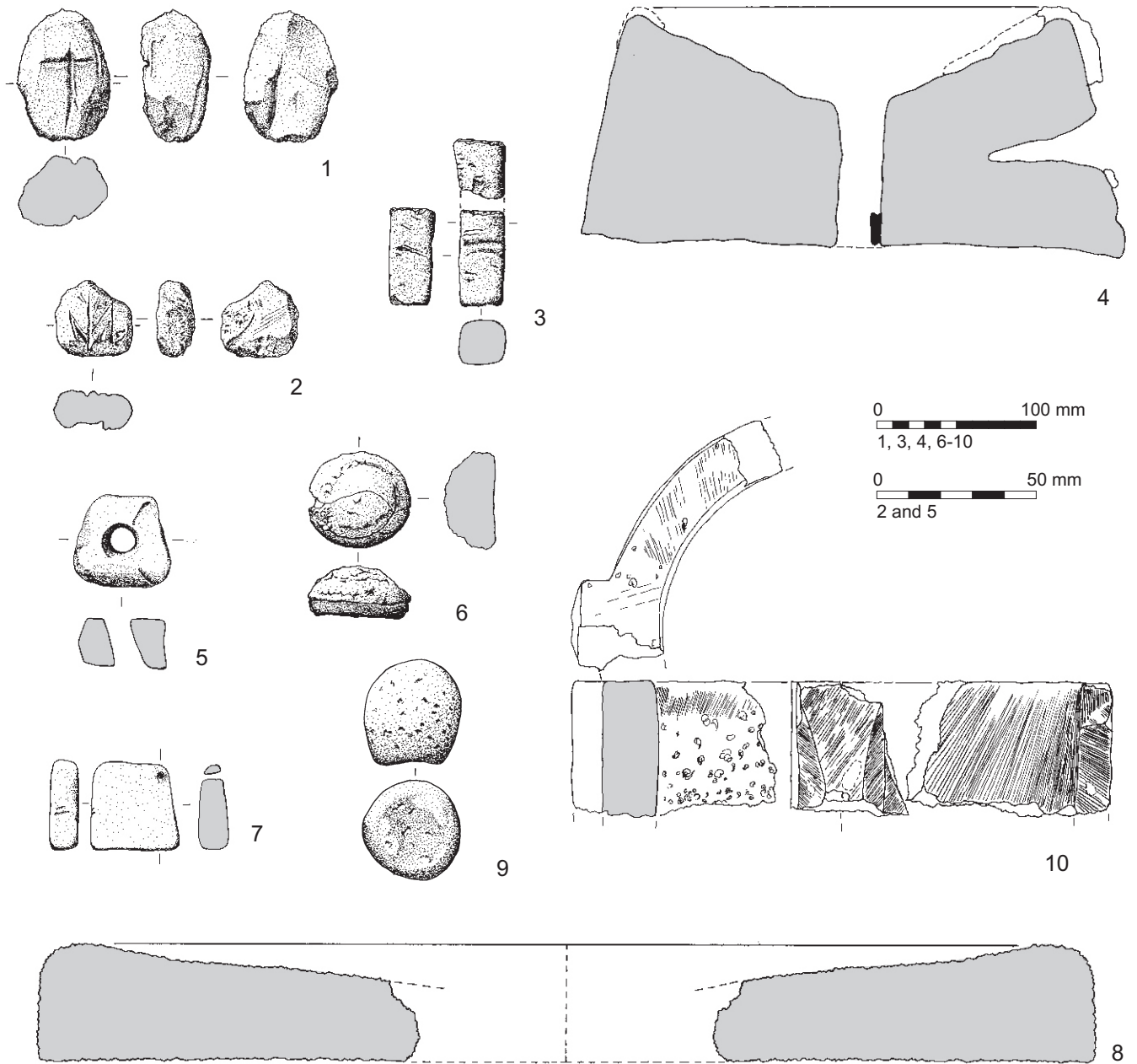


Figure 25.1: Selected pieces of worked stone (details in the catalogue)



*Framework
Archaeology*

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