

MEDIEVAL POTTERY FROM MAGOR PILL (ABERGWAITHA), CALDICOT LEVEL: COMPARATIVE ROMAN TO EARLY-MODERN TRADE AROUND THE SEVERN ESTUARY AND BEYOND

by J.R.L. Allen

Department of Archaeology, School of Human and Environmental Sciences, The University of Reading, PO Box 227, Whiteknights, Reading RG6 6AB.

Medieval artefacts occur in both stratified and transposed contexts on the foreshore at Magor Pill, where silts infill a well-exposed tidal palaeochannel beside which stood the settlement and port of Abergwaitha. The ceramics are various roof tiles, some from the Bristol area, and a wide range of pottery. Essentially for domestic use, and dating chiefly from the twelfth and thirteenth centuries, the pottery is dominated by 'local' Welsh products, especially Penhow and Glamorgan (Vale) Wares. As at many other medieval sites on the South Welsh littoral, strong links with the developing port of Bristol are evidenced by a significant proportion of wares from Bristol itself (eg Ham Green products) and from the hinterland to the east within the ambit of the Somerset Avon (eg Bath 'A' and Minety-type Wares). A little pottery from the London area and the continent reached Magor Pill, probably by way of Bristol. Some wares were brought down the Severn Estuary from the Gloucester area and from Malvern Chase upstream. Evidence of line-fishing based on Magor Pill is recorded by a line-sinker of lead, adding to the known use of fixed weirs and traps. There are likely to have been exports of other agricultural and also woodland products.

Magor Pill is an archaeologically persistent site, at which it is possible with the help of earlier studies to compare and contrast patterns of connection and trade during Romano-British, medieval and early-modern times. Under the impact of advances in ship-building and navigation, the use of waterways was crucial to

the embedding of the site in an evolving web of links of an increasing complexity and geographical and economic scale.

Occupation sites which lay on the coast over the period of their activity present archaeologists with the opportunity to examine the joint exploitation of marine and terrestrial resources by people, and especially the use of waterways for trade and communication on different geographical scales. Only under exceptional circumstances, however, is the coast stable. Post-glacial sea-level rise has ensured that the shores of the Bristol Channel and Severn Estuary have shifted rapidly and significantly in position over time (Hawkins 1971; Barton *et al* 1995; Allen 2000, 2002a), a process that continues to the present day, albeit more slowly. Coastal settlements that are persistent archaeologically in the strictest sense exist here only by right of substantial engineered defences or their location on high ground. At many sites, especially along the low-lying Wentlooge and Caldicot Levels (Gwent Levels), human intervention has failed to prevent the continuation of coastal change into modern times. One of these is Magor Pill, about 12 km to the east of Newport, where there was a substantial Romano-British settlement, a documented medieval minor port (Abergwaitha), and a significant early modern landing facility. The precise character(s) and location(s) of these endeavours are now uncertain because of coastal retreat, but material evidence of them has remained behind and, focused on a sheltered haven, they can all be regarded as effectively in the same place.

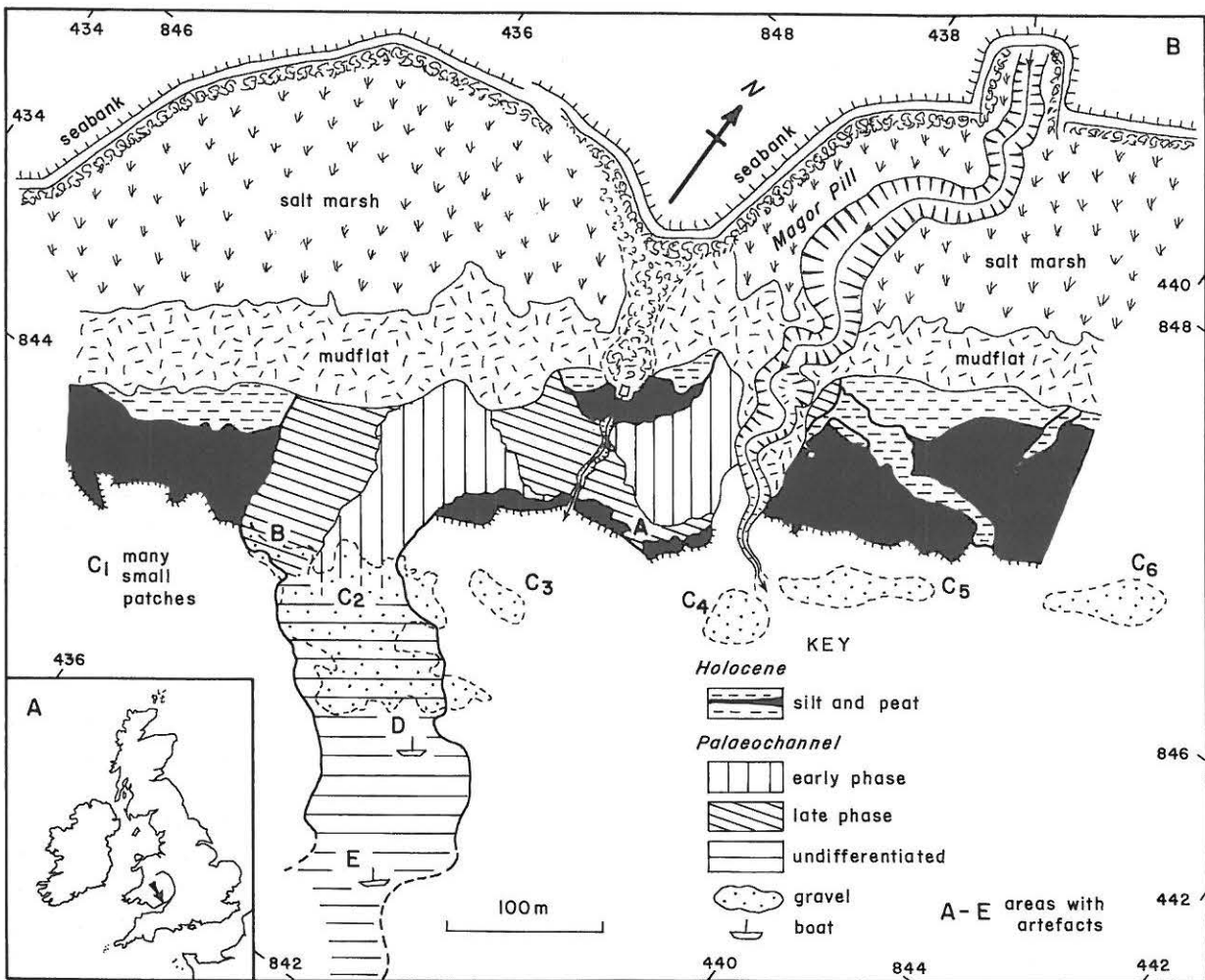


Figure 1: Magor Pill multi-period archaeological site. A - setting in the British Isles. B - simplified Holocene geology of the intertidal zone showing the location of the main archaeological contexts (adapted from Allen and Rippon 1997).

The purpose of this paper - the last of a trilogy - is to describe medieval artefacts from Magor Pill, and to relate them to previously described Romano-British and early-modern assemblages from the site (Allen 1998a, 1999a, 1999b; for nearby inland sites see Boon 1967, Meddens 2001), in an attempt to elucidate comparative trading patterns, regional as well as local, over a period of more than 1500 years.

SETTING AND MATERIAL

Magor Pill lies on the shores of the Caldicot Level on the Welsh coast of the Severn Estuary (Figure 1A). It is the surviving tidal reach of the St Brides Brook which rises in the hills of Wentwood 10 km to the north and crosses the Level in canalized

form to the sea. Surveying the modern intertidal zone, Allen and Rippon (1997) found that coastal erosion and retreat over the last few millennia had extensively exposed at an intermediate stratigraphical level the substantial, meandering channel formerly occupied by the pill (Fig. 1B). This feature, yielding a range of archaeological materials, is deeply incised into a c. 10 m thick sequence of Holocene estuarine silts and peats which formed in mudflats, salt marshes, organic marshes and just supratidal raised bogs (Allen 2000; Allen and Haslett 2002; Allen and Rippon 1997). Infilling the abandoned channel are tidal silts deposited in two stages. The early phase, of brownish green silts, and without known artefacts, spans the fifth to the tenth or eleventh centuries AD. The late phase is of chiefly pale brown silts

rich in artefacts. It began to accumulate after an erosional interval of a century or two, and in much diminished form was being deposited as late as the eighteenth or nineteenth century.

Magor Pill is now clearly understood to be the site of the documented medieval port of Abergwaitha (Rippon 1996, 1997; Allen and Rippon 1997; see also Redknap 1998a). Transposed pottery of Romano-British, medieval and early modern date has long been known from the general area of the site (Nash-Williams 1951; Boon 1967; Courtney 1986-87), but it is only recently that systematic attention, based on carefully localized collections, has been given to these and other finds (Allen and Rippon 1997; Allen 1998a, 1999a, 1999b; Redknap 1998b; Webster 1998), which include the spectacular medieval boat and a slightly later vessel (Nayling 1996, 1998). Of the medieval pottery at Magor Pill, Allen and Rippon (1997) described a small assemblage, partly stratified in the late-phase channel-fill. Another small assemblage, apparently also partly stratified in this phase, was reported by Redknap (1998b) from the context of the earlier of the boats. Courtney (1986-87) published a little quite well-preserved but transposed pottery from the coast of the Gwent Levels which had found its way into museum collections. Some was said to come from Magor Pill.

Medieval artefacts have been collected over a period of years at Magor Pill (Fig. 1B) from two kinds of context (Allen and Rippon 1997, fig. 2). Their taphonomy is similar to that of the previously described Romano-British and post-medieval wares (Allen 1998a, 1999b) and requires no further detailed consideration. However, many of the cooking pots described below are either sooted externally or coated internally with carbonized food residues. These pots, it must be supposed, had been discarded either after use at the site itself or on voyages to the site. As they are not specific to any one source of supply, both possibilities must be entertained.

In one context, archaeological material is stratified in chiefly pale brown silts representing the late phase of channel-filling, and is most readily collected after storms have cleaned the shore. In area A debris is largely found at and

near the channel base, especially in former potholes and flow-parallel erosional furrows. The medieval pottery is fragmentary but otherwise pristine. Only one early modern sherd was found here. Water-worn finds of early modern date predominate in the thin gravel lags exposed among the channel-filling silts in area B, which also have a little medieval and abraded Romano-British pottery. The pale brown silts in area D on the lower foreshore yield only medieval pottery - typically large and invariably unworn sherds - and occasional Romano-British wares. Allen and Rippon (1997, fig. 2) found medieval pottery in silts in the vicinity of the earlier medieval wreck in area E. Excavation of the wreck (Nayling 1998), proving gravels, sands and silts apparently at the channel base, yielded five Romano-British sherds (Webster 1998) and at least eight sherds of various medieval wares (Redknap 1998a).

The stratified material from areas A, B, D and E can be regarded as in primary contexts only if it had been either accidentally or deliberately discarded into Magor Pill without further transport along the channel, either directly from vessels travelling through or berthed in the pill, or from installations on the bank. Another possibility (Allen and Rippon 1997, 338-9; see also Redknap 1998a, 43-4), allowed by the abundant evidence for the repeated failure of the banks of the pill (Allen and Rippon 1997, 336-8, 345), is that material in a primary context on the banks was released into the channel as the result of collapses as meanders grew. A further possibility is that some material was washed from seaward into the pill, the mouth of which is known to have undergone a long retreat (Allen and Rippon 1997, 354-8). The large size of some sherds, as noted also by Redknap (1998a), and the pristine character of many, favours their having been discarded or released into the pill either without further transport or a movement so brief as to have imparted no detectable sign. On the other hand, the worn sherds clearly experienced reworking by currents.

The second context comprises detached sheets of semi-mobile gravel on the lower foreshore (Fig. 1B, areas marked C). Intensive line-walking of these yielded mostly water-worn and clearly residual material, having been garnered through the erosion of stratified contexts

such as those described. It is much more plentiful than in the channel-filling silts but has a closely similar composition. All the archaeological finds are therefore treated together below.

STONE

Building stone

As Allen and Rippon (1997, 345) noted, stone is common in the late-phase channel silts exposed in area A (Fig. 1B). A systematic study has not been attempted but, in addition to a range of pebbles and cobbles, it includes crudely dressed blocks of Old Red Sandstone and Carboniferous Limestone which, along with some of the occasional worked wood, could have contributed to roughly-made buildings. Prehistoric flintwork, coal, goethite iron ore, primitive iron-making slag and furnace lining have occasionally been found in the semi-mobile gravels of area C, but so far not stratified in areas A, B, D and E.

Stone roofing tiles

Some fragmentary stone roof tiles were recovered, chiefly from area C (Fig. 1B), into which they are presumed to have been transposed. However, as unworn examples accompany pristine medieval pottery in the pale brown channel-fill at area A, they are all for completeness recorded here. The character and positioning of their fixing holes, as illustrated by Jope and Dunning (1954, pl. XXII), is not incompatible with a medieval date for all of these pieces. Two rock-types are represented.

One lithology is a pale brown, flaggy, coarsely micaceous, fine grained quartz sandstone. It is represented by the upper part of one tile and two smaller fragments (total wt. 1028 g). The larger, roughly rectangular fragment, but with trimmed-off corners, measures 182 mm wide and 9 mm in thickness. Toward the top it has a bored, biconical fixing hole with a least diameter of 9 mm. A similar fixing hole in a smaller fragment (10 mm thick) measures 8 mm across. The third fragment (17 mm thick) preserves no fixing hole but has along one edge an open slot 19 mm wide by *c.* 12 mm deep. These tiles appear to have a source in the earlier Lower Old Red Sandstone, perhaps sandstones in the St. Maughan's Group or lower Brownstones, formations that outcrop *c.* 10-

15 km to the northwest and north of Magor Pill (Welch and Trotter 1961).

The other lithology is a hard, greenish grey to grey, flaggy, coarsely micaceous, fine- to medium-grained quartz sandstone with common to abundant flecks of coalified plant matter. It is represented by two fragmentary tiles (total wt. 309.4 g). One is 11 mm thick with a bored, markedly biconical fixing hole with a least diameter of 7 mm. The other is 13 mm thick with a cylindrical, bored fixing hole 14 mm wide. The coalified matter assigns the rock to an Upper Carboniferous source, either the Pennant measures of the central Forest of Dean (Welch and Trotter, 1961) or the equivalent strata east of Bristol (Kellaway and Welch 1993), a documented source of medieval stone tiles (Jope and Dunning, 1954).

Slate roofing tiles

The collections include ten fragments of slate roofing tile (total wt. 518.7 g). Most are water-worn and came from area C, but two from area A, although broken, show no signs of abrasion, and in this respect are as pristine as the associated medieval pottery sherds. Some of the slate could, however, have been introduced in Roman times, as similar material occurs at coastal sites as close by as Caerleon (Boon 1978). The fragments vary from 2.5 to 9 mm in thickness, none having fixing holes.

The rock is a pale silvery grey, moderately hard, well-cleaved slate with scattered flecks of pyrite and, in two pieces, signs of infaunal burrowing. Three fragments are spotted black. In thin-section under the microscope, the spots prove to be crystals of chiastolite showing the characteristic cross-shaped arrangement of abundant, opaque inclusions. The presence of this mineral, typical of thermal metamorphism, points to a source within or near the aureole of a substantial igneous intrusion. Granites in southwest England at first come to mind, but the ports from which slates from these sources were exported in medieval times all lie on the English Channel coast (Jope and Dunning 1954, fig. 1). Although widespread in southern Britain, they seldom reached sites in the Bristol Channel. The slates at Magor Pill probably came from southwest Wales, as grey, occasionally spotted, pyritic slates

Fabric	No. (%)	Wt. in g. (%)
'Local' wares		
1, Penhow Ware	129 (24.4)	2335.2 (20.4)
2, Glamorgan (Vale) Ware	35 (6.6)	587.1 (5.1)
3	39 (7.4)	123.8 (10.8)
4	2 (0.4)	47.2 (0.4)
5	16 (3.0)	626.4 (5.5)
6	7 (1.3)	342.7 (3.0)
7	4 (0.8)	97.3 (0.9)
8	25 (4.7)	420.6 (3.7)
9	23 (4.3)	374.4 (3.3)
10	1 (0.2)	12.9 (0.1)
11	1 (0.2)	24.5 (0.2)
12	1 (0.2)	18.9 (0.2)
13A	3 (0.6)	38.9 (0.3)
13B	13 (2.5)	137.4 (1.2)
13C	2 (0.4)	62.3 (0.5)
13D	3 (0.6)	64.6 (0.6)
Regional wares		
14, Malvern Chase Wares	8 (1.5)	150.6 (1.3)
15, Gloucester Early Medieval Ware	2 (0.4)	43.6 (0.4)
16, Sand-and-limestone Tempered Ware	2 (0.4)	97.9 (0.9)
17, Bath 'A' Ware	8 (1.5)	142.2 (1.2)
18, Minety-type Ware	2 (0.4)	87.0 (0.8)
19, Flint-tempered Ware	1 (0.2)	38.8 (0.3)
20, Ham Green Ware (jug fabric)	16 (3.0)	656.1 (5.7)
21, Ham Green Ware (cooking pot fabric)	18 (3.4)	279.9 (2.4)
22, 'Bristol' jugs	12 (2.3)	407.8 (3.6)
23	17 (3.2)	347.6 (3.0)
24	24 (4.5)	535.5 (4.7)
English wares		
25, Medieval Coarse Border Ware	3 (0.6)	61.9 (0.5)

Table 1: Pottery from Magor Pill (continued overleaf).

Fabric	No. (%)	Wt. in g. (%)
Continental wares		
26, Saintonge Green-glazed and Polychrome Wares	7 (1.3)	233.0 (2.0)
27	2 (0.4)	49.6 (0.4)
28, Martincamp Ware	2 (0.4)	19.6 (0.2)
Unattributed sherds		
	101 (19.1)	1865.8 (16.3)
Totals	529 (100.2)	11,445.5 (99.9)

Table 1: Pottery from Magor Pill (continued).

of Ordovician age were worked in the Presceli Hills in the thirteenth century and shipped from locations in Milford Haven (North 1946, 12, 61, 91; Jope and Dunning 1954, fig. 1).

THE POTTERY

'Local' wares

These are wares which were, or appear on geological ground to have been, produced in the Welsh hinterland of Magor Pill (Table 1).

Penhow Ware (fabric 1) of the late twelfth to late thirteenth century (Wrathmell 1981; Papazian and Campbell 1992) is predominant. The fabric is moderately hard with a dull orange to yellowish brown or dark brown exterior and a pale to mid grey core. Abundant medium- to very coarse-grained quartz sand and occasional sandstone, ferruginous concretions/ore and clay pellets are set in a micaceous, silty-sandy matrix. The vessels are mainly plain cooking pots (sagging bases seen) and some brown- or green-glazed jugs/pitchers (Figure 2.1-18). Allen and Rippon (1997) had previously noted this ware.

Less abundant than the Penhow products, Glamorgan (Vale) Ware (fabric 2) is represented by green-glazed jugs/pitchers with thumb-printed

bases and cooking pots with sagging bottoms (Figure 2.19-21). The fabric is hard with a pale reddish-brown to dusky pink, occasionally dull red, exterior and pale grey core. Moderate amounts of fine- to coarse-grained quartz sand with some ferruginous concretions/ore and rare clay pellets are dispersed in a fine silty matrix. Decoration is restricted to applied strips and occasional horizontal combing. These products, dating from the late twelfth into the fourteenth and possibly as late as the sixteenth century, probably came from sites in the Vale of Glamorgan (Vyner 1982; Price and Newman 1985; Papazian and Campbell 1992), a thirteenth-century kiln as near as Caerleon yielding pottery similar to the ware (Clarke 2001).

Finer grained than Penhow Ware, fabric 3 may also be of local origin. It has a buff to pinkish buff exterior and generally light grey core. Dispersed in a plentiful, fine-grained micaceous matrix are fine- to coarse-grained quartz sand, a little ore and ferruginous concretions, and occasional clay pellets. There are jars and cooking pots decorated with combing and rouletting (Figure 2.23-31) and a probable jug/pitcher with a green glaze (Figure 2.22). Fabric 4, represented by a jar or small cooking pot with a pie-crust rim (Figure 2.32), is closely similar but has a little limestone.

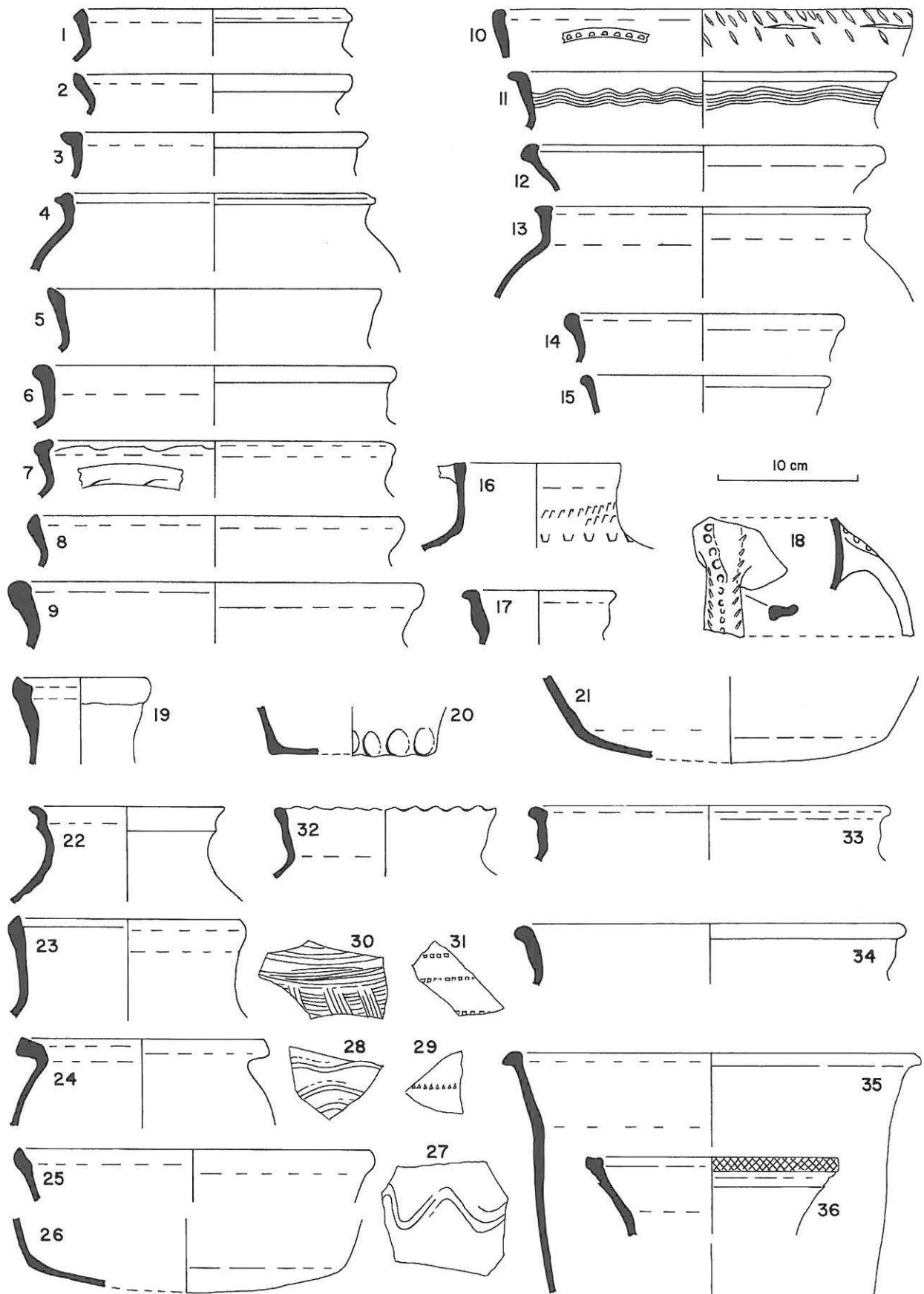


Figure 2: 'Local' and regional pottery from Magor Pill. 1-18: Penhow Ware. 19-21: Glamorgan (Vale) Ware. 22-31: fabric 3. 32: fabric 4. 33-36: fabric 5.

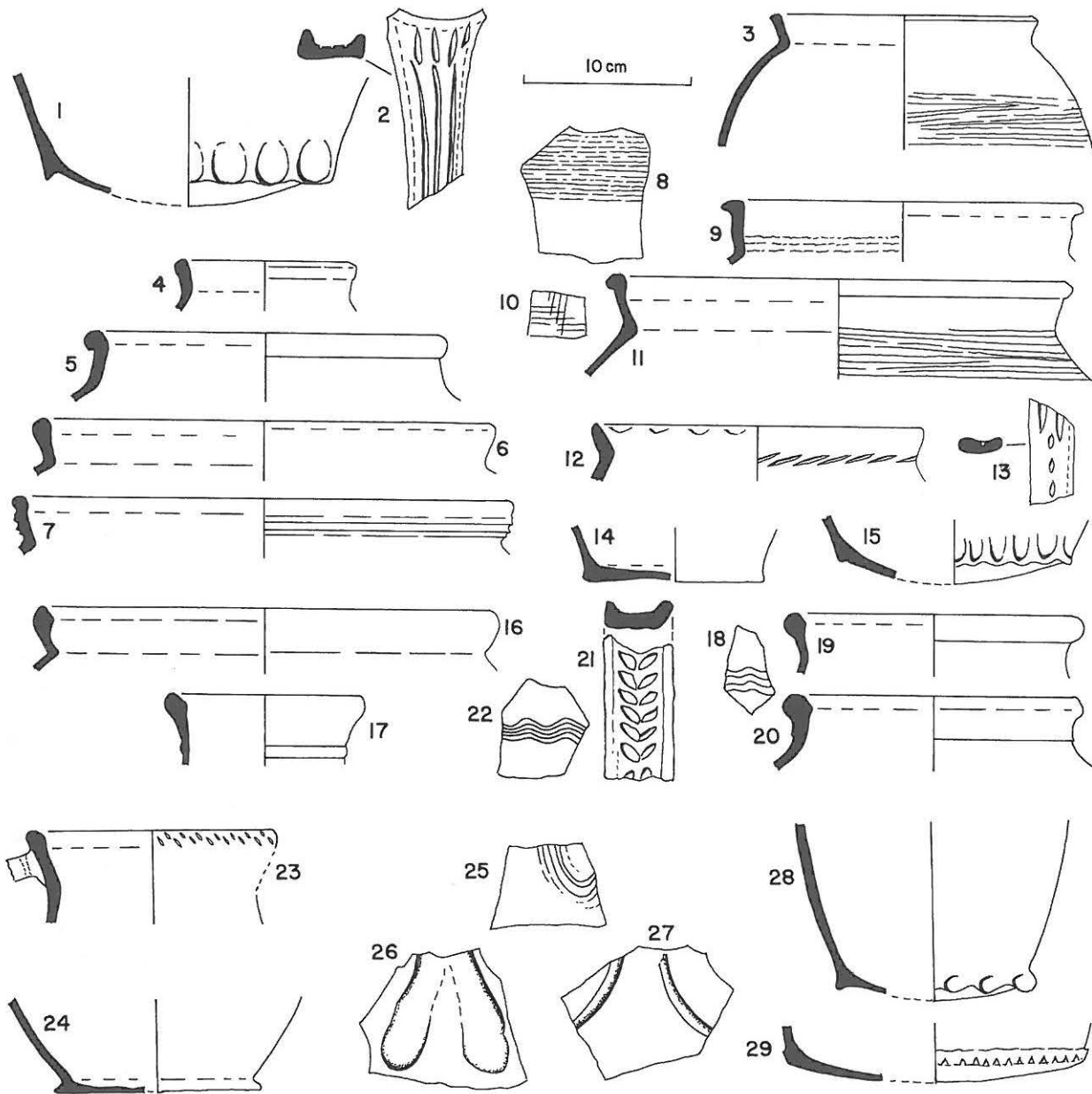


Figure 3: 'Local' and regional pottery from Magor Pill. 1, 2: fabric 6. 3: fabric 7. 4-7: fabric 8. 8-11: fabric 9. 12: fabric 12A. 13: fabric 12B. 14: fabric 12C. 15: fabric 12D. 16, 17: Malvern Chase Ware. 18-20: Bath 'A' Ware. 21, 22: Minety-type Ware. 23-29: Ham Green Ware (jug fabric).

Fabric 5 is hard and pale to mid grey or occasionally buff. It is dominated by fine- to medium-grained quartz sand, with occasional much larger grains (≤ 2 mm), and some clay pellets, limestone (≤ 4 mm) and sandstone. The vessels (Figure 2.33-36) include cooking pots, one cylindrical, and a green-glazed jug/pitcher with a rouletted rim. The source is unknown, but possibly local.

A finer grain and a much lower proportion of inclusions characterise fabric 6, which is otherwise of a similar colour and composition. The vessels are hand-made jugs/pitchers with a patchy green glaze. Bases are coarsely thumb-printed and sagging, and the handles stabbed and longitudinally scored (Figure 3.1, 2). Cooking pots are also represented.

Fabric 7, of unknown source, is either mid to dark grey throughout or with a pale brown exterior. It has a scattering of rounded granules of quartzitic sandstone (≤ 4 mm) with some very coarse-grained quartz set in a slightly micaceous, sandy matrix. The vessels are medium-sized cooking pots with unevenly, coarsely wiped outer surfaces (Figure 3.3).

Fabric 8 is hard with a very dark grey to black core which rapidly grades into a bright orange to bright red outer layer. Abundant medium- to coarse-grained quartz sand is set with occasional clay pellets and sandstone in a silty-sandy matrix with moderately coarse mica. The vessels are mainly cooking pots, one with a grooved rim, but include a probable glaze-splashed jug (Figure 3.4-7). A body sherd is rouletted as in fabric 3 (Figure 2.31).

Typically, fabric 9 is hard and red throughout but can have a grey core or be grey overall. It is characterised by the predominance of partly welded clay pellets, with subordinate angular to rounded quartz (≤ 2 mm) and very occasional sandstone and limestone. The vessels are large cooking pots with sagging bases and a decoration of coarse, uneven grooves, occasionally criss-crossing (Figure 3.8-11). It is unlike known Bristol products, and may therefore be local in origin.

Several distinctive, probably local wares are represented by a single sherd. Fabric 10 is superficially like Merida-type Ware of Iberian origin in its inclusions, but is much cruder and, aside from the orange-red outer surface, pale grey. The surfaces glitter with large (≤ 1 mm) flakes of white mica, hinting at a possible origin in the earlier Lower Old Red Sandstone (?Usk valley). Fabric 11, wheel-thrown and reddish brown with a dark grey core, has frequent inclusions of finely crystalline limestone (including dolomite) and clay pellets with some medium- to coarse-grained quartz sand. It could have come from a district exposing the Carboniferous Limestone Series. Probably fabric Hb of Vince (1991), fabric 12 is dark grey to black, with scattered to common inclusions mainly of angular sandstone (≤ 5 mm) and rounded quartz (≤ 2 mm) in a silty-sandy, micaceous matrix.

There is a little pottery in a very fine grained fabric with few inclusions and plentiful mica just evident to the unaided eye. Fine Micaceous Ware is a convenient general title to cover the four variants. The sources are unknown - the wares are lacking at Bristol and apparently at Chepstow - but the general fabric is compatible with manufacture from the Holocene estuarine silts anywhere on the Severn Estuary Levels, including as far afield as Somerset. Fabric 12A is hard and orange-red externally with a dark grey to almost black core. It includes a scattering of medium-grained quartz sand and occasional ferruginous concretions and pellets of white sandstone. The vessels have a yellowish-brown glaze and, in the one case known, a simple rim with slight thumb-prints internally and overlapping slashes externally at the base (Figure 3.12). Fabric 12B is hard, buff to orange externally and with a pale to mid-grey core. The only inclusions are a little quartz sand and ferruginous concretions. The vessels appear to be mainly jugs/small pitchers with slashed and stabbed handles, thumb-printed bases, and a colourless to olive-green glaze (Figure 3.13). Fabric 12C is moderately soft, dull pinkish-orange externally but pale grey in the core. Ferruginous concretions are common and there is very occasional quartz sand and pellets of white sandstone. The two sherds (joining, but independently collected) are from a green-glazed vessel, probably a jug, with a plain, flat base (Figure 3.14). The fourth variant, fabric 12D, is very hard, very pale buff to pinkish buff externally and with a pale grey core. The only inclusions are a little quartz sand, mostly fine but including occasional large, rounded grains. The vessels appear to be jugs/pitchers with sagging, thumb-printed bases and a patchy green glaze (Figure 3.15). These various vessels appear to be of a twelfth or thirteenth century date.

Regional wares

This category covers wares which definitely entered Magor Pill from outside Wales, especially from the Severn Vale and from Bristol and its hinterland (Table 1).

Pottery was made at Malvern Chase (fabric 14) through medieval into early modern times (Vince 1977; Hurst 1994) and is well known from

widely scattered sites within the influence of the lower Severn (eg Bond and Hunt 1977; Morris 1980; Heighway 1983; Papazian and Campbell 1992; Allen 1999b). Earlier Malvern Chase Ware occurs as sherds from unglazed jugs and cooking pots with upright to infolded rims (Figure 3.16), suggesting a thirteenth to early fourteenth century date. The fabric is moderately hard, buff to dark grey and sandy, with scattered Malvernian rock fragments. Sixteenth-century glazed products are represented by a single rim-sherd from a small, collared and spouted jug in a porous, orange, sandy fabric with very occasional quartz sand and vein-quartz (Figure 3.17). Allen and Rippon (1997) and Redknap (1998b) had also noted Malvern products at Magor Pill.

The Gloucester products found at Magor Pill are Gloucester Early Medieval Ware (fabric 15), of the eleventh to thirteenth centuries, and Sand-and-limestone-tempered Ware (fabric 16) of the eleventh and twelfth (Vince 1983). The sherds are from hand-made cooking pots.

There is a little Bath 'A' Ware (fabric 17) of the twelfth and thirteenth centuries, thought to have been made in the Bath area (Vince 1979). The fabric is moderately hard, orange-pink to pale grey, with a very fine matrix with dispersed, well sorted, rounded and frequently polished quartz grains (≤ 2 mm), a little flint/chert and ferruginous concretions/ore and, in some sherds, occasional fine-grained limestone. The vessels appear to be medium- to large-sized cooking pots with rounded, swollen rims (Figure 3.18-20). One body sherd has wavy grooves and another a thin external brown-green glaze.

Minety-type Ware (fabric 18), from western and northern Wiltshire and south Gloucestershire (Musty 1973; McCarthy 1974; Redknap 1990), is represented by two sherds, possibly from the same large jug/pitcher (Figure 3.21, 22). The fabric is hard, mid grey and abundantly tempered with fragments of oolitic limestone associated with some quartz sand and a little ore. The handle carries a herringbone pattern of slashes and the body sherd five-fold, wavy grooves. Both have a strong, olive-green glaze. The ware ranges from the twelfth to the fifteenth century, but the sherds appear to be of the thirteenth. Redknap (1998b) reported sherds from an externally sooted cooking

pot in a Minety-type fabric in association with the medieval boat-wreck.

A single sherd from a used cooking pot represents Flint-tempered Ware (fabric 19), probably from east Wiltshire or Berkshire. The fabric is hard and pale grey outside with a darker core. It is fine grained and micaceous, including moderate amounts of angular to sub-rounded flint (≤ 6 mm), rounded quartz (≤ 2 mm) and some fine-grained limestone, possibly chalk. A similar fabric occurs at Gloucester from the twelfth and thirteenth centuries, but not at the Gates (Heighway 1983).

Ham Green Ware (Barton 1963, 1988), produced on the south bank of the Avon west of Bristol, is modestly represented at Magor Pill (fabric 20) by green-glazed jugs/pitchers decorated with applied strips, stretched thumb-marks at the lower handle-fixings, stabbed rims and thumb-printed or rouletted bases (Figure 3.23-29). The fabric is hard and pale buff to pinkish buff on the unglazed, interior surfaces, with a generally mid grey core. It is fine grained with variable amounts of fine- to coarse-grained quartz sand, pale to dark clay pellets, and occasional limestone, chert/flint and ore. The date-range at Chepstow (Vince 1991) is from the early thirteenth century and later. A jug had previously been recorded by Allen and Rippon (1997)

Hand-made cooking pots (Figure 4.1-5), but in a different fabric (fabric 21), were also produced at or near Ham Green in the thirteenth century and later (Barton 1963; Vince 1991). At Magor Pill the fabric is hard and dark reddish-brown, either throughout or with a pale grey core. Set in a very fine grained matrix is very abundant fine- to medium-grained quartz sand with some chert, variable amounts of 'limestone' (? some/all modern shell debris), and a little ore. Sherds from the shoulder display horizontal combing or, in one case, widely spaced coarse grooves. Allen and Rippon (1997) had earlier recorded a Ham Green cooking pot.

The wheel-made jug/pitcher fabric (fabric 22) probably came from the Bristol area. It is hard and chiefly mid to dark grey in the core, with pale buff to pale pink or pale orange unglazed interior surfaces. Very abundant medium- to coarse-

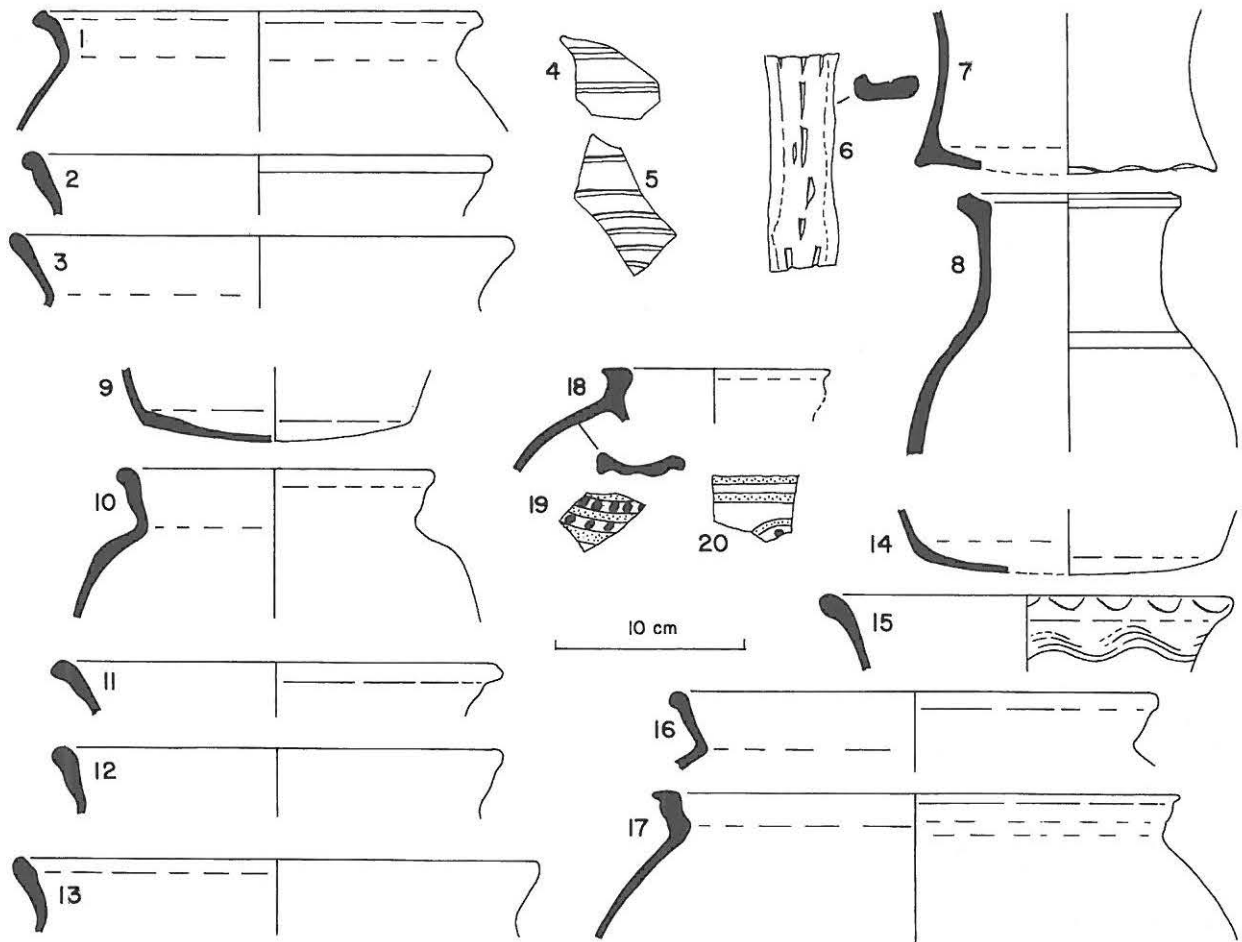


Figure 4: Regional and continental pottery at Magor Pill. 1-5: Ham Green Ware (cooking pot fabric). 6-8: fabric 22 (?Bristol jugs). 9-13: fabric 23 (?Bristol cooking pots). 14-17: fabric 24 (?Bristol). 18-20: Saintonge Green-glazed and Polychrome Wares.

grained quartz with occasional clay pellets and limestone are set in a sparse silty matrix. The decoration includes slashes or stabs on the handles, applied strips on the sides, and thumb-printed bases (Figure 4.6, 7). The strong glaze, patchy on some sherds, is mainly speckled and dark green. One vessel in a pale grey fabric, fired upside down, has a collared form and a brown-streaked, pale olive-green glaze, suggesting a fourteenth-century or possibly later Bristol Redcliffe jug (Figure 4.8). The other pottery is likely to date from the thirteenth century.

Fabric 23, which is hard and very dark grey to black, closely resembles Vince's (1991) Bristol fabric Kb of the twelfth to thirteenth century. Very abundant fine- to coarse-grained quartz sand with occasional sandstone and chert is set in a

silty, micaceous matrix. The vessels are cooking pots with sagging bases (Figure 4.9-13).

Fabric 24 is probably another Bristol product, closely resembling Bristol type-fabric 305, found on the Redcliffe waterfront and dated from the late twelfth to the early thirteenth century. The vessels are jars and cooking pots with sagging bases (Figure 4.14-17).

English wares

The only English product from beyond the Severn basin is Medieval Coarse Border Ware (fabric 25), represented by three sherds from probably different vessels (Table 1). The fabric is hard, pale buff to brownish pink, and fine grained with a little fine mica. The common to abundant

inclusions are chiefly of generally well rounded and sorted, fine- to coarse-grained, colourless to pink quartz sand. There are occasional clay pellets and grains of red ore. One sherd, probably from a jug, carries on both surfaces a colourless to speckled and blotched dark green glaze. The other sherds have a similar glaze, but only internally in the one case and only externally in the other. This ware in the London area dates from the mid thirteenth to the earliest sixteenth century (Pearce and Vince 1988), but in Wales may not have appeared before the fifteenth (Papazian and Campbell 1992).

Continental wares

The commonest continental pottery (Table 1) at Magor Pill is Saintonge Green-glazed and Polychrome Wares (fabric 26). The fabric is hard and very pale grey to very pale buff, with scattered inclusions of angular to rounded quartz, some of which is pink, and very occasional large grains (≤ 2 mm). The matrix is very fine grained, with much fine mica, and very occasional mica flakes *c.* 1 mm in size are seen. The vessels include a large jug with a rich green to almost black glaze and a polychrome jug with a pattern of red and brown bands and dots (Figure 4.18-20). According to Papazian and Campbell (1992), Saintonge pottery was arriving in South Wales from the mid to late thirteenth century until possibly as late as the fifteenth. Redknap (1998b) dates to *c.* 1300 the unstratified base of an unglazed Saintonge jug found in the general area of the medieval boat-wreck.

Two sherds, apparently from different wheel-thrown vessels (?jugs), represent a related, presumed continental, fabric which is moderately hard, buff to pink, and very fine grained and slightly micaceous, with occasional quartz and red ore, and very rare limestone (fabric 27). The vessels are splashed externally with a pale green glaze over a thin and patchy, dark brown skin or wash. This is Bristol type-fabric 316 of the early sixteenth century.

Martincamp Ware (fabric 28) of the sixteenth and seventeenth centuries (Hurst *et al* 1986) is represented by two sherds from different, thin-walled vessels. The fabric is pinkish buff, very hard and fine grained and non-micaceous,

with very fine quartz sand visible under the hand-lens.

CERAMIC ROOF TILES

The wide range of these objects is dominated by ridge tiles but includes some that are flat and would have been laid lower on a roof (Table 2). Few can be provenanced, but in general character they are compatible with a mainly later medieval or earliest early-modern date.

A ware from Malvern Chase (fabric A) is represented by two fragments of ridge tile 12-14 mm thick in a hard, coarse-textured fabric with Malvernian rock fragments, some coarse quartz sand and granules, very occasional sandstone and scattered coarse mica flakes. The exterior is orange red and the core grey. A closely similar fabric at Chepstow (Vince, 1991, 87, tile fabric A) is attributed to the sixteenth century.

Another Malvern Chase ware (fabric B) is represented by fragments of ridge tile 9-14 mm thick with sparse traces of brown-green glaze and,

Fabric	No. (%)	Wt. in g. (%)
A, Malvern Chase	2 (5.6)	216.7 (3.5)
B, Malvern Chase	10 (27.8)	1170.3 (18.8)
C	4 (11.1)	322.2 (5.2)
D	2 (5.6)	291.4 (4.7)
E	1 (2.8)*	2061.0 (33.1)
F	1 (2.8)	282.0 (4.5)
G	13 (36.1)	1346.3 (21.6)
H	3 (8.3)	542.2 (8.7)
Totals	36 (100.1)	6232.1 (100.1)

Table 2: Ceramic tiles from Magor Pill.

on some, of a pale brown wash. Along the spine of one piece are the remnants of a decoration of applied strips. The fabric is moderately hard and characterized by a harsh feel and a much higher sand content than fabric A. It consists of very abundant, ill-sorted, medium- to very coarse-grained quartz sand with frequent, generally subangular fragments of vein quartz (≤ 10 mm) and sparse Malvernian rock fragments, with occasional clay pellets and limestone. These are set in a coarse-textured matrix with a little fine mica. These tiles may date from the sixteenth into the early seventeenth century, as the ware resembles, but is less refined than, the late Malvern products (Vince, 1977; Hurst 1994), commonly known as Malvern Pink.

Fabric C is represented by ridge tiles 10-12 mm thick with a grey core and a cream to pale brown, oxidized exterior. It is hard and consists of common to abundant, rounded, medium- to coarse-grained quartz sand and occasional limestone set in a fine-textured, non-micaceous matrix. The glaze is pale to dark green and black-speckled.

Fragments of ridge tile 9-10 mm thick represent fabric D. It is very hard with a cream to pale grey core and a pale pinkish cream exterior. Large rounded pellets of fine clay (≤ 3 mm) and occasional fragments of white chert (≤ 2 mm) are set with abundant, rounded, medium- to coarse-grained quartz sand in a fine-textured groundmass. The widely spread glaze is pale to olive green speckled with brown. A source east of the Severn is indicated by the presence of chert. With its light colour and clay pellets, the fabric is suggestive of a Bristol product, as illustrated by the Ham Green (fabric 20) and other jugs (fabric 22), albeit in a substantially coarser form.

Plentiful large flakes (≤ 1 mm) of mica in the matrix distinguish fabric E, represented by a single, flat roof tile measuring 360x175x16-18 mm. The fabric is very hard, with a dark grey core and a buff to dull brown exterior, and composed of common very fine to medium-grained quartz sand set in a silty matrix. Accompanying the quartz are scattered pellets (≤ 3 mm) of coarsely micaceous sandstone and occasional pieces of vesicular iron-making slag (≤ 5 mm). Near one narrow edge are two circular

fixing holes 12-14 mm in diameter. The provenance is unknown, but the coarse mica and micaceous sandstone strongly suggest a source in the Raglan Marl Group or lowermost St. Maughan's Group (early Lower Old Red Sandstone), outcropping in the valley of the lower Usk and to the west of Monmouth on the Wye (Welch and Trotter 1961). There are similarities with pottery fabric 10.

Fabric F is represented by another flat roof tile, measuring 14-16 mm in thickness, with fixing holes pierced using a large forged nail of rectangular cross-section. The fabric is orange-red and hard, with abundant, well-sorted and rounded, medium- to coarse-grained quartz sand, common microcrystalline limestone grains (≤ 1.5 mm), and occasional clay pellets and ore (≤ 3 mm) set in a fine-grained groundmass.

The commonest fabric (G) in the collection is soft, orange-red throughout or with a greyish core, and typified by the predominance of a fine-textured groundmass with scattered fine mica. Ferruginous concretions merging into clay pellets (≤ 3 mm) are rare to common, and there may be some quartz sand and occasional limestone, fine-grained sandstone and even vesicular, iron-making slag. Fabric G is represented by fragments of ridge tiles 11-18 mm thick, some with a brown or green glaze. This is a possibly heterogeneous group with some affinity to Vince's (1991, 89) group E at Chepstow.

Related to this last fabric is fabric H. The fine-textured, orange-red matrix is again predominant, with scattered to common ferruginous concretions merging into clay pellets (≤ 6 mm), but differs in being hard and irregularly streaked with yellow. Limestone grains are occasionally seen but quartz sand is absent except as a surface dusting. It is represented by ridge tiles 11-13 mm thick.

Two fragments possibly represent floor tiles. Fabric I is very hard with a dull orange exterior grading rapidly into a thick mid-grey core. It consists of plentiful subangular quartz sand (0.5-2 mm) with scattered ore and occasional sandstone pellets set in a silty matrix. The fragments are 16-18 mm thick, flat and unpatterned.

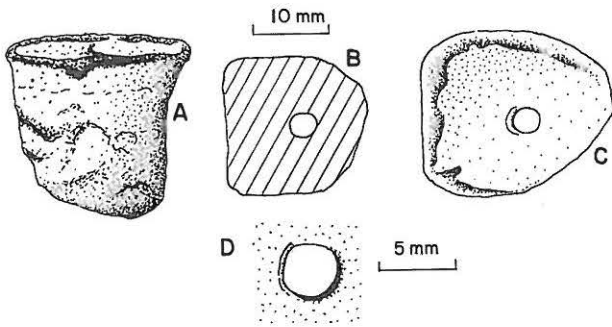


Figure 5: A possible lead fishing-line sinker from Magor Pill. A - side view. B - cross-section. C - top view. D - axial hole as seen on base.

A METAL OBJECT

Area A (Fig. 1B) yielded a stratified object of lead in association with medieval sherds (Figure 5). Weighing 67.9 g, the object is 25 mm high and 24x22 mm across, having three, unequal, flattish sides roughly at right-angles joined by a longer, curved face. The upper surface is concave with a pronounced, irregular lip around much of the circumference. The underside is rounded. Piercing the object axially is a straight, cylindrical hole 3.5 mm in diameter. A faint to distinct protrusive lip surrounds this hole on the underside of the object (Figure 5D). These features suggest that the object was produced by pouring molten lead into a cavity made in clay using a piece of wood of square section that had been somewhat reshaped and rounded at the end. Into the bottom of this mould had been pushed vertically a cylindrical object - perhaps a debarked green twig - that could easily be pulled from the subsequent casting. The object is probably a sinker for a fishing line. It compares with a similar object (93.6 g) from the medieval site at Hock Cliff upstream (Allen 2001, fig. 13. 56) and with what are considered to be line-sinkers from the waterfront of medieval London (Steane and Foreman 1988, figs. 8, 9). It also resembles axially pierced, subconical lead objects (32 g, 57 g), believed to be sinkers, from the Romano-British site at Kenn Moor (Rippon 2000, fig. 23.1, 3).

TRADE AT MAGOR PILL

Medieval connections and trade

Documentary sources begin in this period to supplement the archaeological evidence for trade and connections at Magor Pill, which lay at the end of a possible Roman road that struck south-southeastward past Penhow Castle from the main west route (Rippon 1996, fig. 11). The Gwent Levels were by now largely, although not securely, embanked. Abergwaitha, as it had become known, is first recorded in 1245, but by 1327 the port there is described as deserted (Rippon 1996, 1997), an event some two decades before the general disruption of economic life by the plagues of the mid fourteenth century. The name remained extant, however, for a further 300 years, and there are allusions to the port, at times clearly thriving, up to at least the mid seventeenth century.

The pottery described above shows that Magor Pill had strong connections, almost certainly by road, with the Welsh hinterland (Figure 6B). However it is calculated (Table 1), products from this area total more than half of the whole assemblage, with Penhow Ware contributing almost one-quarter. Glamorgan (Vale) Ware, coming in at a poor third, could have been traded by boat from Newport or Cardiff, as it is also recorded from a site on the Severn Estuary not far below Gloucester (Allen 2001). Some of the tiles and unprovenanced 'local' wares may have arrived by the same route. Presceli slates from the west would appear also to have been brought in by boat.

The origins and character of Anglo-Saxon and Norman Bristol may be obscure (Sivier 2002), but excavation leaves no doubt that from the early twelfth through to at least the sixteenth century there was a steady growth of wharves and docks at the town, together with associated industries (Williams 1982; Jones 1986, 1991; Burchill *et al* 1987; Good 1987, 1990-91; Jones *et al* 1987; Nicholson and Hillam 1987; Price 1990-91; Cox 1998; Parker 1999). Bristol had become the hub of an expanding and increasingly complex web of trade that covered the Bristol Channel, ranged westward and southward into the seas beyond, and reached eastward and northward into the basins of

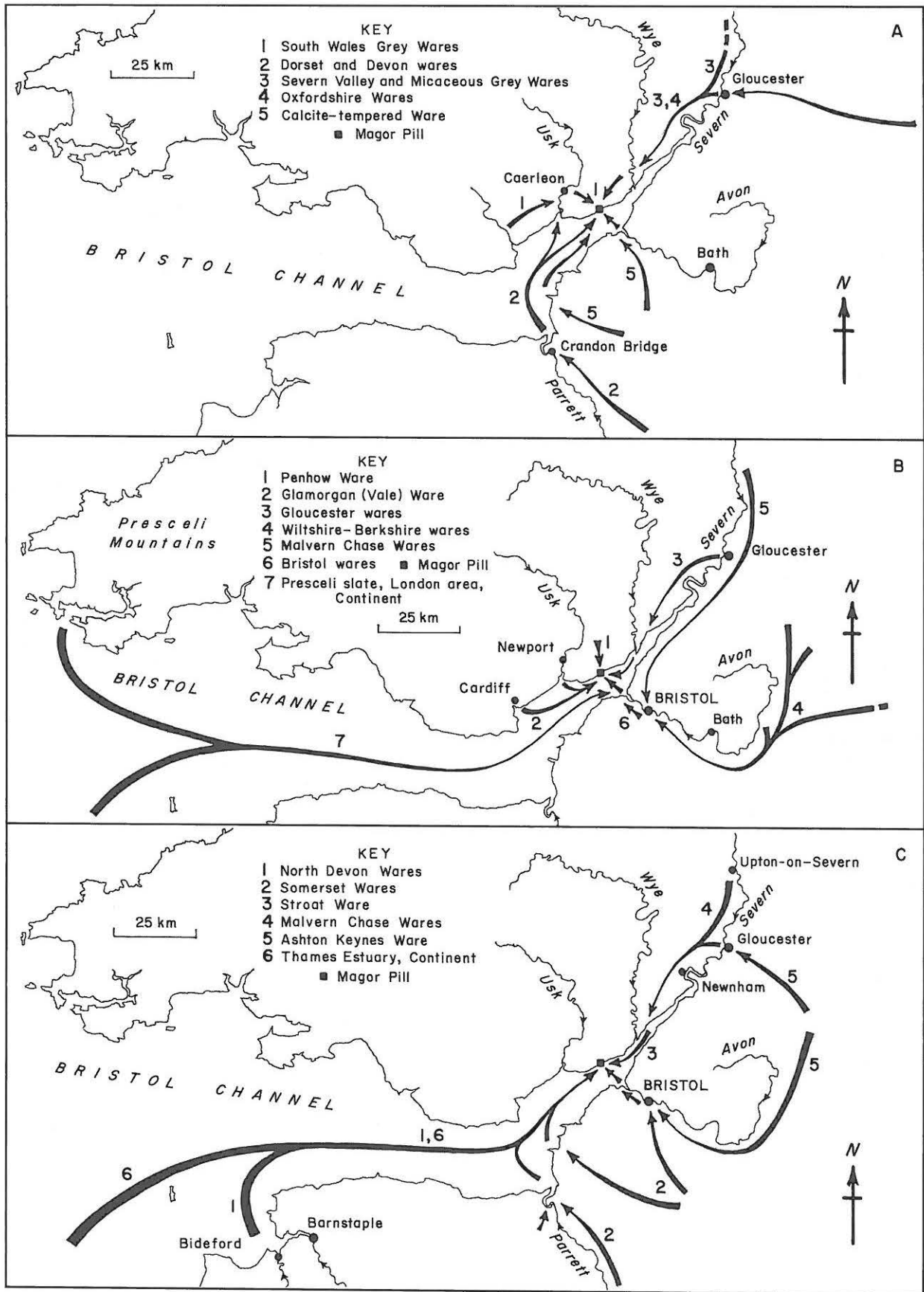


Figure 6: Comparative patterns of connection and trade at Magor Pill based on pottery assemblages. A - Roman period. B - medieval times. C - early-modern period.

the Somerset Avon and the Severn. Magor Pill was embedded in that web, for almost one-fifth of the pottery and apparently some of the tiles there were sourced in Bristol and its hinterland. For example, Ham Green cooking pots and jugs, well represented at the pill (Table 1), are widely distributed along and around the Severn Estuary and Bristol Channel (Barton 1963; Papazian and Campbell 1992), as well as in Ireland (eg Barton 1988; Hurst 1988; Vince 1988). Other ceramics from Bristol and the basin of the Somerset Avon have a similar distribution.

Regional wares from the Gloucester area may have been directly supplied to Magor Pill. The landing place could have been an occasional stopping point for Norman traders carrying Gloucester Early Medieval Ware to Ireland from Gloucester (Barton 1988; Vince 1988) without touching Bristol. They are found, for example, at the medieval landing place at Hills Flats in the middle Severn Estuary (Allen 2003). It is more likely that the Malvern Chase products that reached the pill had been trans-shipped at Bristol. Traded from river ports, they are widely distributed in the West Midlands and Welsh Borders and, appearing also at Bristol, have a similar though less prolific distribution around the Bristol Channel to Bristol ceramics (Vince 1977; Papazian and Campbell 1992). Also more likely to have been trans-shipped at Bristol than landed directly at Magor Pill is the small amount of Saintonge Ware from southwest France, a product that rode on Bristol's wine trade.

The ceramics support the documented desertion of Magor Pill as a port by 1327. Most of the pottery recorded in Table 1 is of the twelfth and/or thirteenth century, and little can be attributed to the fourteenth or fifteenth. What caused this economic decline is unknown - the destruction of installations by coastal erosion, as at Goldcliff Priory a century later (Williams 1964), is a possibility, as also is the rise of ports at Chepstow and Newport - but it was not Bristol's fortunes. Bristol continued to grow as a trading and industrial centre during the later medieval period, its staples being the export of cloth gathered from a range of English, Welsh and Irish sources, and the import of wine first from northern and then southwest France and later also from Iberia (Carus-Wilson 1967; Sherborne 1971;

Stephens 1974; Vanes 1979; Crawford 1984). Economic revival at Magor Pill probably began in the fifteenth or sixteenth century. Renewed contacts with Bristol are suggested by the small amounts of Medieval Coarse Border Ware, probably imported by sea from the London area, and of Martincamp and Merida-type wares of continental origin (see also Allen 1999b, table 1). Malvern Chase products from the lower Severn also soon found their way again to Magor Pill.

Supporting the other evidence for marine connections are the two medieval boat-wrecks boasted by Magor Pill, respectively of the mid thirteenth (Nayling 1998) and fifteenth-sixteenth centuries (Nayling 1996). The older of these carried a cargo (at least c. 200 kg) of iron ore, chiefly goethite but with a little haematite, in a range of lump and ochreous forms (Allen 1996; Allen and Rippon 1997; Young and Thomas 1998, 1999). There can be no doubt that the ore came from the Bristol Channel Orefield, but the geochemical grounds for the claim of provenance in southeast Wales (Young and Thomas 1998, 1999) seem weak and inconclusive. Mineralogically, it is more likely that the ore was under shipment from the Bristol-Mendip area (Allen 1996). Redknap and Young's (1998) implicit position that the ore was intended for smelting may also be challenged. The plentiful ochreous forms could not have served that purpose. They could, however, have been used directly or with little further treatment as pigments, as surviving medieval churches and other buildings testify (eg Turner 2000), and the lump ore could have been intended for crushing.

Boats working out of Magor Pill could also have provided one kind of platform for the line-fishing implied by the lead object described above (Figure 5), although the evidence for this activity is at present slight. Fishing by means of weir and basket traps is known to have been practised at Magor Pill from the ninth or tenth century AD onwards (Allen and Rippon 1997; Nayling 1999).

Connections in the Roman period

As the archaeological outcome of the Chepstow-Nash pipeline makes clear (Meddens 2001), the Gwent Levels, embanked in places, seem in Roman times to have been a thinly populated and

largely pastoral landscape (Figure 6A). There was activity at Nash (Meddens and Beasley 2001) and Goldcliff (Bell 1994; Allen 2002b), and near the coast apparently sizeable settlements at Rumney Great Wharf (Allen and Fulford 1986; Fulford *et al* 1994; Allen 1998a) and Magor Pill (Allen 1998a, 1998b, 1999a), the latter at the end of a possible Roman road (Rippon 1996, fig. 11). From all of these sites have come pottery collections of a few hundred to several thousand sherds. The material is chiefly of the third and fourth centuries, with evidence of activity over at least a century earlier. The main hinterland settlements are the towns of Caerleon (*Isca Silurum*), Usk (*Burium*) and Caerwent (*Venta Silurum*), all long-ranging. Insufficient is known to judge the status of Cardiff, except that it had a fort. The pottery assemblages from Caerwent need revision, but those from Caerleon and Usk are well characterised (Zienkiewicz 1986, 1993; Evans 2000; Manning 1993).

Like the other sites on the Levels, Magor Pill was not of high status. The predominance of South Wales Grey Wares, matching what is seen on the Levels generally, suggests that its main link was to the hinterland, with some emphasis on the areas west of the Usk (Figure 6A). A definite but perhaps not strong connection with Caerleon can be inferred from the presence of a small quantity of Caerleon Legionary Ware (Allen 1999a). Nevertheless, there was a major tie with the Somerset coast, for Magor Pill yields a high proportion of the reduced coarseware manufactured in southeast Dorset (SEDBB1) and also some from the Exeter region. The rich and varied pottery assemblage recovered from buildings at Crandon Bridge on the Parrett estuary (Langdon and Fowler 1971; Allen and Fulford 1996), including items of continental manufacture, compares with those from high-status Caerleon and Usk and identifies this place as a major port for onward trade. However, no continental finewares appear at Magor Pill, which may mean that either the contact by sea was indirect, or these goods were strictly reserved for town markets and not carried to settlements of lesser status. Nothing suggests any significant contact between Magor Pill and Sea Mills (*Abonae*), across the Severn Estuary on the Somerset Avon. Activity at this haven, adopted in earliest Roman times, seems to have been limited to the early period (Boon 1945,

1949; Bennett 1985; Ellis 1987). Contact by river and estuary with settlements in the Severn basin is suggested by several indicators. At Magor Pill there is Severn Valley Ware and related products, made at several scattered centres (Webster 1976; Rawes 1982; Timby 1990), and also Micaceous Grey Ware, on petrographic and distributional grounds a product of the Forest of Dean (Allen and Fulford 1996). Magor Pill has the expected low ratio of the widely dispersed Oxfordshire finewares (Young 1977) - chiefly bowls, beakers and mortaria - from the Thames basin, and also from the east a sherd each from the New Forest and Nene Valley industries. The Oxfordshire and Nene Valley products probably reached Magor Pill by way of Gloucester (*Glevum*), either by water or by road, crossing the Wye by the bridge at Chepstow.

In summary, the ceramic assemblage at Magor Pill, combined with the geographical location, suggest that connections by water were important for this small Roman settlement of the second to fourth century. Reliance on water transport had, however, been anticipated in the late Iron Age and first century AD, for the site yields a distinctive, calcite-tempered ware (Allen 1998b). Petrographically, it comes from the Bristol-Mendip area and, as the ware is distributed along both banks of the Severn Estuary and along the tributary rivers, arrival by water seems highly likely. The Romano-Celtic boat found on the Caldicot Level near Llandevenny illustrates one type of craft that could have been involved in Roman if not earlier trading (McGrail and Roberts 1999; McGrail 2001).

Trade in early-modern times

The modest revival in the fortunes of Magor Pill evident from the fifteenth or sixteenth century rapidly strengthened in the early-modern period. Documentary sources, now more plentiful than before, again complement the archaeological evidence. The detailed account of the latter, given earlier (Allen 1999b), overlaps slightly with that of the medieval artefacts described above. Other accounts of post-medieval wares are by Courtney (1986-87) and Allen and Rippon (1997). What is striking about the early-modern ceramic assemblage is the absence of wares of unequivocal Welsh origin.

If the relative amount of pottery is a reliable guide, the strongest link at this time (Figure 6C) was with the enormous, well-documented pottery industry centred on Barnstaple and Bideford in North Devon (Watkins 1960; Grant 1983; Papazian and Campbell 1992). The wares exported along the Bristol Channel from there to Magor Pill (and beyond), largely during the late seventeenth and early eighteenth century, are predominantly specialized products for the dairy industry, especially jugs and the large, shallow, sometimes spouted bowls known as pancheons. Similar products entered the pill, probably by water, from a kiln at Stroat on the Severn Estuary 5 km upstream from Chepstow and, without doubt by water, from an important industry in South Somerset (Coleman-Smith and Pearson 1988). A re-evaluation of some of the reported Stroat Ware suggests that more North Somerset products reached Magor Pill than had previously been thought (Allen 1999b).

Of a similar order of abundance to North Devon and South Somerset Wares are products of the late Malvern Chase industry (Malvern Pink), probably despatched down the Severn up to about 1633 from landing places at Hanley Castle and especially Upton on Severn (Figure 6C). A variety of pottery from sources deeper in the Welsh Borderland and Midlands reached Magor Pill also by the river route but in small amounts (eg Buckley-type Wares, Midland Purple Ware, Bristol/Staffordshire Wares). Ashton Keynes Ware is the fourth most-prevalent at Magor Pill and the only pottery to come from the hinterland of Bristol. One possibility is that it followed the valley of the Somerset Avon and was exported from Bristol. It could otherwise have been carried along the main road from Cirencester to Gloucester and shipped along the Severn from there.

Bristol had become even more important as the hub of a complex web of Atlantic, Caribbean, regional and local trade by sea, tideway and river (eg Willan 1937; Cullen 1968; Stephens 1974; Morgan 1993; Wanklyn 1996; Buchannan 2000; Hussey 2000). Although wares definitely made in or near Bristol are unknown at Magor Pill, contact with the port seems to have been maintained, as small amounts of pottery from the continent (Martincamp Ware, Merida-type Ware) and the

Thames Estuary (Surrey-Hampshire Border Wares, Metropolitan Ware) have been recovered (Figure 6C). The former probably reached Bristol with wine from France and Iberia (Crawford 1984). In the eighteenth century ships sailed frequently and regularly between Newnham on the Severn and London (Herbert 1979).

CONCLUDING DISCUSSION

Although Magor Pill was effectively persistent archaeologically over 1500 years, the evidence as it currently stands suggests that there was change in the functions of the site. The Romano-British pottery (Allen 1998a, 1998b, 1999a) and the medieval group described above are essentially domestic in character. They are dominated by local Welsh products and include no vessels that could only have served an industrial purpose. In medieval and Romano-British times the site would seem to have been a settlement which included landing facilities. The early-modern assemblage (Allen 1999b) is different. Although some tablewares are present, the pottery is specialized toward the dairy industry, with its need for large bowls in which cream can be separated, jugs to hold cream and other products, and jars in which butter, amongst other foodstuffs such as preserved fish, can be packaged. Wares from the Welsh hinterland are conspicuously absent. Hence there would seem to have been no permanent settlement during this period at Magor Pill, although buildings for storage and for temporary occupation may be expected to have been present at the landing place.

Complex webs of connection that included pathways of considerable length are evident in all three periods. Some non-Welsh pottery - the Dorset and Oxfordshire wares - reached Magor Pill in Roman times only after an overland journey longer in terms of distance than the possible journey by water (Figure 6A). Boat transport was largely limited to the Severn, the Severn Estuary and the inner Bristol Channel. For example, the evidence from the geographical distribution of pottery ratios shows that Dorset pottery was shipped from a port on the southern shores of the Bristol Channel, having been brought there overland from the Poole Harbour area (Allen and Fulford 1996). Commercial sailings around the Cornish peninsula seem to have been eschewed.

No doubt a reflection of developments in ship-building and navigation, there was more emphasis on water transport in medieval times, with slate from the Presceli Hills and pottery from the London area, France and Iberia moving into the Bristol Channel (Figure 6B). The Severn continued to play an important role, and the Somerset Avon is likely to have been exploited for the movement of the pottery that reached Bristol from Berkshire, Wiltshire, south Gloucestershire and the Bath area. Wares produced in and around Bristol and its hinterland reached Magor Pill on the other side of the Severn Estuary in substantial quantities. Except for the lack of Welsh products, the early-modern pattern has many similarities with the medieval (Figure 6B, C). Magor Pill was supplied, partly or wholly by water, with specialized pottery from sources - Malvern Chase, Somerset and especially North Devon - as distant as 130 km away. Routes into Bristol for goods made within the influence of the Avon continued to function.

The issue so far left untouched is what goods, if any, were being exported from Magor Pill. The archaeological evidence is at present limited to the early-modern period, in the form of a large assemblage, partly stratified, of bones and other hard parts from cattle, sheep and horses, including a semi-articulated skeleton (Allen and Rippon 1997). Magor Pill appears on these grounds to have been one of the many places on the Welsh coast from which livestock was exported across the Severn Estuary and Bristol Channel, a trade well-attested in various ways by late medieval and early-modern chiefly documentary sources (Skeel 1926; Lewis 1927; Dawson 1932; Hulbert 1936; Williams 1963; Robinson 1972; Bettey 1983; Toulson and Forbes 1992). Cheese, butter and other foodstuffs were carried out to ships from Magor Pill (Robinson 1972), and there was a wide trade in dairy produce from South Wales into the West and Southwest of England (Dawson, 1932; Williams 1963; Robinson 1972). There is no proof, either archaeological or documentary, for the export of other goods, but it would be surprising, given the character of the hinterland, if the export of rough cloth, wool, dairy produce, hides and perhaps forest products (eg bark from Wentwood) had not been a feature of Magor Pill in medieval and early modern times. What might have been exported

from the pill in the Roman period, and to where, can only be the subject of speculation. The closest settlements of any size are nearby overland at Caerwent, and either overland or by water at Caerleon. It is likely that Roman Magor Pill looked inland to these for the disposal of any surpluses it possessed, rather than across the Severn Estuary, where large settlements, such as Gloucester and Bath, lay at a substantial distance.

ACKNOWLEDGEMENTS

I am indebted to Derek Upton for introducing me to Magor Pill, and thank Mark Redknap and Nigel Blackmore of the National Museum & Gallery (Cardiff) and Sue Giles (City Museum & Gallery, Bristol) for the opportunity to examine pottery collections in their charge.

BIBLIOGRAPHY

- Allen, J.R.L. (1996) A possible medieval trade in iron ores in the Severn Estuary of south-west Britain. *Medieval Archaeology* 40, 226-230.
- Allen, J.R.L. (1998a) Magor Pill multiperiod site: the Romano-British pottery, and status as a port. *Archaeology in the Severn Estuary* 9, 45-60.
- Allen, J.R.L. (1998b) Late Iron Age and earliest Roman Calcite-tempered Ware from sites on the Severn Estuary Levels: character and distribution. *Studia Celtica* 32, 27-41.
- Allen, J.R.L. (1999a) Magor Pill multiperiod site: the Romano-British pottery and status as a port. A postscript. *Archaeology in the Severn Estuary* 10, 130-131.
- Allen, J.R.L. (1999b) Magor Pill (Gwent) multiperiod site: post-medieval pottery, and the shipping trade. *Archaeology in the Severn Estuary* 10, 75-97.
- Allen, J.R.L. (2000) Sea level, salt marsh and fen: shaping the Severn Estuary Levels in the later Quaternary (Ipswichian-Holocene). *Archaeology in the Severn Estuary* 11, 213-34.
- Allen, J.R.L. (2001) A medieval waterside settlement overlooking Severn Estuary alluvium,

- Hock Cliff, Fretherne and Saul, Gloucestershire. *Archaeology in the Severn Estuary* 12, 79-98.
- Allen, J.R.L. (2002a) Interglacial high-tide coasts in the Bristol Channel and Severn Estuary, southwest Britain; a comparison for the Ipswichian and Holocene. *Journal of Quaternary Science* 17, 69-76.
- Allen, J.R.L. (2002b) The context and meaning of the Roman Goldcliff Stone, Caldicot Level. *Archaeology in the Severn Estuary* 13, 147-154.
- Allen, J.R.L. (2003) A post-Roman pottery assemblage from Hills Flats, South Gloucestershire: trade and communication by water in the Severn Estuary. *Transactions of the Bristol and Gloucestershire Archaeological Society* 121, 201-212.
- Allen, J.R.L. and Fulford, M.G. (1986) The Wentlooge Level: a Romano-British saltmarsh reclamation in southeast Wales. *Britannia* 17, 91-117.
- Allen, J.R.L. and Fulford, M.G. (1996) The distribution of South-east Dorset Black Burnished Category I pottery in south-west Britain. *Britannia* 27, 223-281.
- Allen, J.R.L. and Haslett, S.K. (2002) Buried salt-marsh edges and tide-level cycles in the mid-Holocene of the Caldicot Level (Gwent), South Wales, U.K. *The Holocene* 12, 303-324.
- Allen, J.R.L. and Rippon, S.J. (1997) Iron Age to early modern activity and palaeochannels at Magor Pill, Gwent: an exercise in lowland coastal-zone geoarchaeology. *Antiquaries Journal* 77, 327-370.
- Barton, K.J. (1963) A medieval pottery kiln at Ham Green, Bristol. *Transactions of the Bristol and Gloucestershire Archaeological Society* 82, 95-126.
- Barton, K.J. (1988) The medieval pottery at Dublin. In MacNiocaill, G. and Wallace, P.F. (eds.) *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney*. Galway, Galway University Press, pp. 271-324.
- Barton, R.N.E., Berridge, P.J., Walker, M.J.C. and Bevins, R.E. (1995) Persistent places in the Mesolithic landscape: an example from the Black Mountain upland of South Wales. *Proceedings of the Prehistoric Society* 61, 81-116.
- Bell, M. (1994) Field survey and excavation at Goldcliff, Gwent 1994. *Archaeology in the Severn Estuary* 5, 114-144, 157-165.
- Bennett, J. (1985) *The Roman town of Abonae: excavations at Nazareth House, Sea Mills, Bristol, 1972*. Bristol, City of Bristol Museum and Art Gallery Monograph No. 3.
- Betty, J.H. (1983) Livestock trade in the West Country during the seventeenth century. *Proceedings of the Somerset Archaeological and Natural History Society* 127, 123-128.
- Bond, C.J. and Hunt, M.A. (1977) Recent archaeological work in Pershore. *Vale of Evesham Historical Society Research Papers* 6, 52-62.
- Boon, G.C. (1945) The Roman site at Sea Mills, 1945-5. *Transactions of the Bristol and Gloucestershire Archaeological Society* 66, 258-295.
- Boon, G.C. (1949) A Claudian origin for Sea Mills. *Transactions of the Bristol and Gloucestershire Archaeological Society* 68, 184-188.
- Boon, G.C. (1967) Roman pottery from the base of the alluvium at Magor. *Monmouthshire Antiquary* 3, 121-127.
- Boon, G.C. (1978) Excavation on the site of a Roman quay at Caerleon and its significance. *Monographs and Collections Cambrian Archaeological Society* 1, 1-24.
- Buchanan, B.J. (2000) The African trade and the Bristol gunpowder industry. *Transactions of the Bristol and Gloucestershire Archaeological Society* 118, 133-156.
- Burchill, R., Coxah, M., Nicholson, A. and Ponsford, M. (1987) Excavations in Bristol 1985-6. *Bristol and Avon Archaeology* 6, 11-30.

- Carus-Wilson, E.M. (1967) *The overseas trade of Bristol in the later Middle Ages*, 2nd ed. London, Merlin Press.
- Clarke, S.H. (2001) A medieval pottery kiln at Isca Grange, Caerleon. *Archaeology in Wales* 41, 81-83.
- Coleman-Smith R. and Pearson, T. (1988) *Excavations in the Donyatt Potteries*. Chichester, Phillimore.
- Courtney, P. (1986-87) Some exotic 'imports' and other wares from the South Wales coast. *Medieval and Later Pottery in Wales* 9, 23-30.
- Cox, S. (1998) Excavations on the medieval waterfront at Bristol Parade, Bristol, 1998. *Bristol and Avon Archaeology* 15, 1-27.
- Crawford, A. (1984) *Bristol and the wine trade*. Bristol, Historical Association.
- Cullen, M.L. (1968) *Anglo-Irish trade 1660-1800*. Manchester, Manchester University Press.
- Dawson, J.W. (1932) *Commerce and Customs, a history of the ports of Newport and Caerleon*. Newport, Directory Press.
- Ellis, P. (1987) Sea Mills, Bristol: the 1965-68 excavations in the Roman town of Abonae. *Transactions of the Bristol and Gloucestershire Archaeological Society* 105, 15-108.
- Evans, E. (2000) *The Caerleon Canabae: excavations in the civil settlement 1984-90*. London, Britannia Monograph Series No. 16.
- Fulford, M.G., Allen, J.R.L. and Rippon, S.J. (1994) The settlement and drainage of the Wentlooge Level, Gwent: excavation and survey at Rumney Great Wharf 1992. *Britannia* 25, 175-211.
- Good, G.L. (1987) The excavation of two docks at Narrow Quay, Bristol, 1978-9. *Post-medieval Archaeology* 21, 25-126.
- Good, G.L. (1990-91) Some aspects of the development of the Redcliffe waterfront in the light of excavations at Dundas Wharf. *Bristol and Avon Archaeology* 9, 29-42.
- Grant, A. (1983) *North Devon pottery, the seventeenth century*. Exeter, Exeter University Press.
- Hawkins, A.B. (1971) The late Weichselian and Flandrian transgression of southwest Britain. *Quaternaria* 14, 115-130.
- Heighway, C. (1983) *The East and North Gates of Gloucester*. Bristol, Western Archaeological Trust Excavation Monograph 4.
- Herbert, N.M. (1979) The Newnham and London traders. *Transactions of the Bristol and Gloucestershire Archaeological Society* 97, 93-100.
- Hulbert, N.F. (1936) A survey of the Somerset fairs. *Proceedings of the Somerset Archaeological and Natural History Society* 82, 83-159.
- Hurst, J.D. (1994) A medieval ceramic production site and other medieval sites in the parish of Hanley Castle: results of fieldwork in 1987-1992. *Transactions of the Worcestershire Archaeological Society* 14, 115-128.
- Hurst, J.G. (1988) Medieval pottery imported into Ireland. In MacNiocaill, G. and Wallace, P.F. (eds.), *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney*. Galway, Galway University Press, pp. 229-253.
- Hurst, J.G., Neal, D.S. and Van Beuningen, H.J.E. (1986) *Pottery produced and traded in North-West Europe 1350-1650*. Rotterdam, Museum Boymans-van Beuningen, Rotterdam Papers No 6.
- Hussey, D. (2000) *Coastal and river trade in pre-industrial England: Bristol and its regions 1680-1730*, Exeter, Exeter University Press.
- Jones, J., Levitan, B. and Watons, N. (1987) The early medieval waterfront at Redcliffe, Bristol: a study of environment and economy. In Balaam, N.D., Levitan, B. and Straker, V. (eds.) *Studies in palaeoeconomy and environment in South-west England*. Oxford, British Archaeology Reports, British Series No. 181, pp. 135-162.

- Jones, R.H. (1986) *Excavations in Redcliffe 1983-5*. Bristol, City of Bristol Museum and Art Gallery.
- Jones, R.H. (1991) Industry and environment in medieval Bristol. In Good, G.L. and Ponsford, M. W. (eds.) *Waterfront archaeology*. York, Council for British Archaeology Research Report No. 74, pp. 19-26.
- Jope, E.M. and Dunning, G.C. (1954) The use of blue slate for roofing in medieval England. *Antiquaries Journal* 34, 209-217.
- Kellaway, G.A. and Welch, F.B.A. (1993) *Geology of the Bristol District*. London, Memoirs of the Geological Survey of Great Britain.
- Langdon, M. and Fowler, P.J. (1971) Excavations near Crandon Bridge, Puriton, 1971. *Proceedings of the Somerset Archaeological and Natural History Society* 115, 53-54.
- Lewis, E.A. (1927) *The Welsh port books (1550-1603)*. London, Honourable Society of Cymmrodorion.
- Manning, W.H. (1993) *Report on the excavations at Usk; the Roman pottery*. Cardiff, University of Wales Press.
- Meddens, F. (2001) The Roman landscape between Chepstow and Nash and its implications for Roman land management. *Archaeology in the Severn Estuary* 12, 1-13.
- Meddens, F.M. and Beasley, M. (2001) Roman seasonal wetland pasture exploitation near Nash, on the Gwent Levels, Wales. *Britannia* 32, 143-184.
- McCarthy, M. (1974) The medieval kilns at Nash Hill, Lacock, Wiltshire. *Wiltshire Archaeological and Natural History Magazine* 69, 97-160.
- McGrail, S. (2001) The Barland's Farm boat within the Romano-Celtic tradition. *Archäologisches Korrespondenzblatt* 31, 117-132.
- McGrail, S. and Roberts, O. (1999) A Romano-British boat from the shores of the Severn Estuary. *The Mariner's Mirror* 85, 133-146.
- Morgan, K. (1993) *Bristol and the Atlantic trade in the eighteenth century*. Cambridge, Cambridge University Press.
- Morris, E.L. (1980) Medieval and post-medieval pottery in Worcester - a type series. In Carver, M. O.H. (ed.) *Medieval Worcester. The archaeological framework*. *Transactions of the Worcestershire Archaeological Society* 7, 1-356.
- Musty, J. (1973) A preliminary account of a medieval pottery industry at Minety, north Wiltshire. *Wiltshire Archaeological and Natural History Magazine* 68, 79-88.
- Nash-Williams, V.E. (1951) New Roman site at Redwick (Mon.). *Bulletin of the Board of Celtic Studies* 14, 254-255.
- Nayling, N. (1996) Further fieldwork and post-excavation: Magor Pill, Gwent Levels intertidal zone. *Archaeology in the Severn Estuary* 7, 85-93.
- Nayling, N. (1998) *The Magor Pill medieval wreck*. York, Council for British Archaeology Research Report 115.
- Nayling, N. (1999) Medieval and later fishweirs at Magor Pill, Gwent Levels: coastal change and technological development. *Archaeology in the Severn Estuary* 10, 99-113.
- Nicholson, R.A. and Hillam, J. (1987) A dendrochronological analysis of oak timbers from the early medieval site at Dundas Wharf, Bristol. *Transactions of the Bristol and Gloucestershire Archaeological Society* 105, 133-145.
- North, F.J. (1946) *The slates of Wales*, 3rd ed. Cardiff, National Museum of Wales.
- Papazian, C. and Campbell, E. (1992) Medieval pottery and roof tiles in Wales AD 1100-1600. *Medieval and Later Pottery in Wales* 13, 1-118.
- Parker, A. J. (1999) A maritime cultural landscape: the port of Bristol in the Middle Ages. *International Journal of Nautical Archaeology* 28, 323-342.

- Pearce, J.E. and Vince, A. (1988) *A dated type-series of London medieval pottery, part 4: Surrey Whitewares*. London, Middlesex Archaeological Society Special Paper 10.
- Price, C. and Newman, R. (1985) Vale fabric: a revaluation. *Medieval and Later Pottery in Wales* 8, 10-19.
- Price, R. (1990-91) An excavation at Broad Quay (Watergate), Bristol, 1979. *Bristol and Avon Archaeology* 9, 24-28.
- Rawes, B. (1982) Gloucester Severn Valley Ware. *Transactions of the Bristol and Gloucestershire Archaeological Society* 100, 33-46.
- Redknap, M. (1990) The pottery from Ewen, Gloucestershire. In Reece, R. Excavations, survey and records around Cirencester. *Cotswold Studies* 2, 64-89.
- Redknap, M. (1998a) The historical and archaeological significance of the Magor Pill boat. In Nayling, N. *The Magor Pill medieval wreck*. York, Council for British Archaeology Research Report 115, pp. 143-153.
- Redknap, M. (1998b) Medieval pottery. In Nayling, N. *The Magor Pill medieval wreck*. York, Council for British Archaeology Research Report 115, p. 41.
- Redknap, M. and Young, T. (1998) The iron industry of south-east Wales in the 13th century. In Nayling, N. *The Magor Pill medieval wreck*. York, Council for British Archaeology Research Report 115, 112-115.
- Rippon, S.J. (1996) *The Gwent Levels: the Evolution of a Wetland Landscape*. York, Council for British Archaeology Research Report 105.
- Rippon, S. J. (1997) *The Severn Estuary; landscape evolution and wetland reclamation*. London, Leicester University Press.
- Rippon, S.J. (2000) The Romano-British exploitation of coastal wetlands: survey and excavation on the North Somerset Levels, 1993-7. *Britannia* 31, 69-200.
- Robinson, W.R.B. (1972) Dr Thomas Phaer's report on the harbours and customs administration of Wales under Edward VI. *Bulletin of the Board of Celtic Studies* 24, 485-503.
- Sherborne, J.W. (1971) *The port of Bristol in the Middle Ages*. Bristol, Historical Association.
- Sivier D. (2002) *Anglo-Saxon & Norman Bristol*. Stroud, Tempus.
- Skeel, C. (1927) The cattle trade between Wales and England from the fifteenth to the nineteenth centuries. *Transactions of the Royal Historical Society* (4)9, 135-158.
- Steane, J.M. and Foreman, M. (1988) Medieval fishing tackle. In Aston, M. (ed.) *Medieval fish, fisheries and fishponds in England*. Oxford, British Archaeological Reports, British Series 182 (i), pp. 137-181.
- Stephens, W.B. (1974) Trade trends at Bristol, 1600-1700. *Transactions of the Bristol and Gloucestershire Archaeological Society* 93, 156-161.
- Timby, J. (1990) Severn Valley Ware: a reassessment. *Britannia* 21, 243-251.
- Toulson, S. and Forbes, C. (1992) *The drover's roads of Wales II. Pembrokeshire and the south*. London, Whittet Books.
- Turner, R. (2000) St. David's Bishop's Palace, Pembrokeshire. *Antiquaries Journal* 80, 87-194.
- Vanes, J. (1979) *The port of Bristol in the sixteenth century*. Bristol, Historical Association.
- Vince, A.G. (1977) The medieval and post-medieval ceramic industry of the Malvern region: the study of a ware and its distribution. In Peacock, D.P.S. (ed.) *Pottery and early commerce*. London, Academic Press, pp. 275-305.
- Vince, A.G. (1979) The medieval pottery. In Cunliffe, B. (ed.) *Excavations in Bath 1950-1975*. Bristol, Committee for Rescue Archaeology in Bristol, Avon and Somerset Excavation Report No. 1., pp 27-52.

- Vince, A. G. (1983) The medieval pottery. In Heighway C. *The East and North Gates of Gloucester*. Bristol, Western Archaeological Trust Monograph 4, pp. 124-131.
- Vince, A.G. (1988) Early medieval English pottery in Viking Dublin. In MacNiocaill, G. and Wallace, P.F. (eds.), *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney*. Galway, Galway University Press, pp. 254-270.
- Vince, A.G. (1991) The medieval pottery. In Shoesmith, R. *Excavations at Chepstow 1973-1974*. Bangor, Cambrian Archaeological Association, pp.89-140.
- Vyner, B.E. (1982) Vale fabric - a medieval pottery industry in Glamorgan. *Medieval and Later Pottery in Wales* 5, 31-43.
- Wanklyn, M. (1996) The impact of water transport facilities on the economies of English river ports, c. 1660-c. 1760. *Economic History Review* 49, 20-34.
- Watkins, C.M. (1960) North Devon pottery and its export to America in the 17th century. *United States National Museum Bulletin* 225, 19-59.
- Webster, P.V. (1976) Severn Valley Ware: a preliminary study. *Transactions of the Bristol and Gloucestershire Archaeological Society* 94, 18-46.
- Webster, P.V. (1998) Roman pottery. In Nayling N. *The Magor Pill medieval wreck*. York, Council for British Archaeology Research Report 115, p. 41.
- Welch, F.B.A. and Trotter, F.M. (1961) *Geology of the Country around Monmouth and Chepstow*. London, Memoirs of the Geological Survey of Great Britain.
- Willan, T.S. (1937) The river navigation and trade of the Severn Valley 1600-1750. *Economic History Review* 8, 658-79.
- Williams, B. (1982) The excavation at Bristol Bridge, 1981. *Bristol and Avon Archaeology* 1, 12-15.
- Williams, D.H. (1964) Goldcliff Priory. *Monmouthshire Antiquary* 3, 37-54.
- Williams, M.I. (1963) Cardiff - its people and trade 1660-1720. *Morgannwg* 4, 74-97.
- Wrathmell, S. (1981) A medieval pottery kiln and wasters at Penhow, Gwent. *Medieval and Later Pottery in Wales* 12, 113-6.
- Young, C.J. (1977) *Oxfordshire Roman pottery*. Oxford, British Archaeological Reports, British Series No. 43.
- Young, T. and Thomas, G. (1998) The cargo: iron ore analysis. In Nayling, N. *The Magor Pill medieval wreck*, York, Council for British Archaeology Research Report 115, 105-111.
- Young, T. and Thomas, G. (1999) Provenancing iron ore from the Bristol Channel Orefield: the cargo of the medieval Magor Pill boat. In Pollard, A.M. (ed.) *Geoarchaeology: exploration, environments, resources*. London, Geological Society Special Publications 165, 103-121.
- Zienkiewicz, J.D. (1986) *The Legionary Fortress Baths at Caerleon. II. The finds*. Cardiff, National Museum of Wales and Cadw.
- Zienkiewicz, J.D. (1993) Excavations in the *Scamnum Tribunorum* at Caerleon: the legionary fortress museum site 1983-5. *Britannia* 24:27-140.