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**Hereford City Excavations  
Volume 3**

**The finds**

**by R Shoesmith**

**1985**

**Research Report No 56**

**The Council for British Archaeology**

**Hereford City Excavations**

**Volume 3 (Microfiche)**

**The finds**

**by R Shoesmith**

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**1985**

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**M4.A5**

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Full cross-references are given in Volume 2 but the contexts listed below have a sufficient variety of finds to make the provision of this quick reference table useful.

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	Charcoal	M9.C7
	Grain	M9.D7
	Inorganic material	M9.E2

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SITE AND CONTEXT	TYPE OF MATERIAL	MICROFICHE
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	Charcoal	M9.C3
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	Bone bodkins ( <u>Fig 24.17 &amp; 18</u> )	M5.E6
	Coin (no 10)	M5.F7-F8
	Pottery ( <u>Fig 57:M7.D5</u> )	M7.D4-D6
	Plant material	M9.D8
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# INTRODUCTION TO VOLUME 3

This is the final volume of the report on the excavations which took place in Hereford between 1965 and 1976. It completes what has been a long and, at times, frustrating exercise in publication. The full report in the three volumes is not as clear and concise as I would have liked and the cross-referencing is at times cumbersome and complex. For these faults I apologise to the reader but in my defence, and perhaps to help others who may have become enmeshed in similar publication problems, I think a brief history of the whole project is now appropriate.

The only common factor to the excavations is that they were all funded, to a greater or lesser part, by the Department of the Environment or its predecessor, the Ministry of Public Building and Works. Several directors were involved in the work on behalf of various bodies and the general policy, which evolved as sites became available, was the development of the city defences from the origin of the city until after the Civil War.

The excavations between 1965 and 1969 were mainly organised or coordinated by the Hereford Excavations Committee. Different directors were employed on individual projects and the site records, which were eventually collected together, varied from interim reports to full dossiers with well indexed finds. The Hereford Excavations Committee was disbanded in 1969, when the work of constructing the inner relief road was completed, and its records and remaining assets were transferred to the Woolhope Naturalists' Field Club. Unfortunately no provision was made for post-excavation work or publication of the

Committee's researches and, apart from the work published during the life of the Committee (Stanford, 1966; Noble, 1967; Shoesmith, 1967, 1968), the reports and finds were stored pending a new policy.

Between 1970 and 1974 there was no local organisation responsible for archaeological work in the city and excavations were mainly carried out under the direct auspices of the Department of the Environment. At that time there was no consistent post-excavation policy and the site records and finds were stored to await processing as and when grants became available.

By 1974, in common with many historic towns and cities, Hereford had a serious back-log of excavations which had been completed but for which no final reports had been prepared and, partly as a result of a report detailing the problem and assessing the archaeological implications of future development (Shoesmith, 1974), the City of Hereford Archaeology Committee was formed. The Committee immediately organised an archaeological unit to carry out further work in the city and to accumulate, process and publish the results of the earlier excavations.

Development was imminent on several important sites in the city and between 1974 and 1976 the Committee organised major excavations at Bewell House, Berrington Street and Cantilupe Street thus adding to the back-log of unprocessed material. In breaks between the excavations, the earlier material (1965-9) was prepared as an article to be submitted to the Woolhope Club for insertion in their transactions. However, by 1976 the development boom in the city had come to an end and it was possible to take stock and establish, in cooperation with the Department of the Environment, a post-excavation and publication policy.

It was resolved to publish all the excavation reports, finds and conclusions in one large A4 volume. Plans, sections and finds from the early excavations, which had been drawn for reduction to the Woolhope Club Transactions quarto size, were redrawn to fit A4 size and the scales adjusted to be comparable with the later work (before 1969 most site work had been in imperial measurements). The post-1970 excavations were processed, final drawings made and a draft text prepared. It soon became obvious that a single volume would be very large and expensive and it was agreed that the excavation reports and finds would be in two separate volumes. The text was re-edited and a cross-referencing system between the two volumes was introduced and by early 1979 the final draft was complete and sent to the academic editor. It was returned with the suggestion, amongst others, that the Castle Green excavations should be published as a separate report as it did not directly concern the defences. This was agreed; the excavation report and principal finds were extracted from the original work and the resulting text was edited as a separate volume incorporating a reassessment of a small excavation in 1960. It was published as a Council for British Archaeology Research Report (No 36) in 1980.

The remaining parts of the complete report were ready to be submitted to the CBA as two separate volumes - 'Excavations on and close to the defences' and 'The finds' when it was appreciated that publications costs were escalating at such a rate that the costs of these two volumes would be prohibitive if all the material was included. After a series of meetings with the CBA and the DOE it was agreed that the two volumes would be produced but that the printed texts should include only summaries of the excavation reports and finds and that the full reports, plus some material which

was originally planned as an unpublished archive, should be published in microfiche.

The report of the excavations was the first volume to be tackled and summaries were written, plans amended and a new cross-referencing system introduced to allow reference from and to the microfiche sections in both the excavation report volume and the finds volume. 'Excavations on and close to the defences', complete with microfiche section, was eventually published in 1982 as Research Report No 46 in the CBA series.

The finds section was even more complex to split into printed text and microfiche than the excavation section had been as there were many contributors involved. It was agreed that the printed text should include a fair summary of all the reports but that items of national interest should be given some priority over sections which had a local or regional bias. Several reports and many tables which had originally been considered as archival material were edited and included in the microfiche section thus creating a further degree of confusion in the, by the, complex cross-referencing system.

The final published reports, and microfiche must be considered as a form of publication, are a tribute to the patience and understanding of the many people involved in their production. It is to be hoped that, in future, authors do not have to follow this tortuous, repetitive and complex path from excavation to final publication of their reports.

It should be appreciated by all readers that the individual reports included in this volume were completed by the contributors some seven years ago. There have been many advances in individual fields since the various sections were written and there are many new and significant works published since 1977, which are not mentioned in the bibliography. I would like to thank the various contributors for allowing me to publish their work without revision - a task which would have delayed publication once again.

## **THE MICROFICHE SECTION**

In Volume 2, the microfiche section includes the full excavation reports and all the associated plans and sections. It can thus be read as an alternative to pages 24-69 in the printed text by those who need full descriptions of the excavations. It was not felt necessary to produce the remainder of the printed part of Volume 2 in microfiche form.

In Volume 3, the printed text is a summary of the information published in this microfiche section. The two parts can thus be read separately and are complete in themselves. Indications are given at appropriate points in the text of the extent of the additional information available in the microfiche and where it can be found. This complements the contents and figures lists which are published at the beginning of the printed text and relate text to fiche.

There are three individual fiches in Volume 2. They are identified on the heading strip as: "Hereford City Excavations Volume 2, Excavations on and close to the defences" and are separately numbered in the set as 1 of 3, 2 of 3, and 3 of 3. In the text for ease of cross-referencing these three fiches are listed as M1, M2, and M3.

There are six fiches in Volume 3. To avoid confusion with those in Volume 2 they are identified on the heading strip as "Hereford City Excavations, Volume 3, The finds" and are numbered in the set as Fiche 4, (1 of 6), Fiche 5 (2 of 6), etc and are referred to in the text as M4, M5, M6, M7, M8, and M9.

The individual frames on each fiche can be identified using the following table:

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14
F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14
G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G15

Every attempt has been made to arrange the frames in the microfiche section so that the text is as close as possible to the line drawings to which it relates. However, this has not always been possible and cross-references are inserted wherever necessary.

Photographic illustrations are not reproduced in the microfiche section but the appropriate figure number is inserted where necessary. Throughout the microfiche report figures which are included in the printed text are shown underlined.

A full list of references is included at the end of the text and on the final frames of the last fiche (M9).

## VOLUME 1 - FINDS REFERENCES

The decision to publish parts of Volumes 2 and 3 in microfiche form was taken when Volume 1 was in page proof form and the cross-referencing system which was to have been used in Volume 1 to identify finds published in Volume 3 had to be abandoned.

The following list rectifies this omission and should be read as an addendum to Volume 1.

Page 17:

Inventory (Vol 3) - period 1c

Small finds

Metal	Lead bar	L14	Fig 8.6
	Lead bar	L14	Fig 8.7

Page 21:

Inventory (Vol 3) - period 2a

Small finds

Metal	Lead plate	L25	Fig 8.5
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Inventory (Vol 3) - period 2c

Small finds

Metal	Lead bar	L9	Fig 8.10
	Iron arrowheads	L9, L13	Figs 2.2, 7, 8, 11, 12, 13
	Copper pin	T1.L3	Fig 4.11

Page 22:

Inventory (Vol 3) - period 3

Small finds

Metal	Iron arrowhead	L11	Fig 2.9
	Pewter buckle	L11	Fig 7.21

**Page 22 (cont)**

**Inventory (Vol 3) - trench 2**

**The one sherd illustrated is of fabric C2 and is  
Fig 43.10. It comes from L8**

**Inventory (Vol 3) - area 1**

**Small finds**

<b>Metal</b>	<b>Iron arrowhead</b>	<b>L29</b>	<b>Fig 2.10</b>
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**Page 23:**

**Inventory (Vol 3) - unstratified, illustrated finds**

<b>Metal</b>	<b>Iron arrowhead</b>	<b>Fig 2.3</b>
<b>Jewellery</b>	<b>Glass bead</b>	<b>Fig 20.6</b>

## VOLUME 2 - CORRECTIONS TO MICROFICHE

During the preparation of Volume 3 a few minor mistakes were found in the microfiche section of Volume 2. The mistakes are principally in the inventories and are corrected below:

M1.D8        The pottery fabric table should read:

Fabric	A1	D1	E1a	G1
Sherds	3	5	12	12
Percent	9	16	37	37

M1.D13       The pottery fabric table should have the following column inserted:

Fabric	A7b
Sherds	1
Percent	2

The percentage of fabric B1 should be changed from 40 to 38

M1.E5        The pottery fabric table for the early ditch should have the following column inserted:

Fabric	A2
Sherds	1

M2.D2        In the inventory of ceramic material for 'Fig 46.2' read 'Fig 46.3'

M2.BB        In the caption for Fig 78 for 'site 6' read 'site 4'

**M2.E12** The pottery fabric table for pits should have the following column inserted:

Fabric	A6
Sherds	1
Percent	-

**M2.G7** The inventory of small finds should read:

Stone	Whetstones	245, 384 & 364	Fig 11.9-11
Worked bone	Carved bone plate	260	Fig 24.14
Coins	Silver penny of Henry I	400	Coin 6
	Silver penny of Henry II	260	Coin 8

**M3.D5** Insert in the inventory

Stone	Flint (unillustrated)	L7	No 17
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**M3.F11** Insert in the inventory

Stone	Flint (unillustrated)	L13	No 18
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## **ACKNOWLEDGEMENTS**

A full list of acknowledgements is included in the General Introduction to Volume 1. The authors of the various parts of this volume are recorded in the appropriate sections both in text and microfiche and to them I am especially indebted.

The long and complex task of retyping the text as camera-ready copy for the microfiche sections of Volume 2 and Volume 3 was undertaken by Mrs H Banks and I am exceedingly grateful for her patience and understanding.

## **THE SITES**

The reports of the excavations, from which the finds recorded in this volume were obtained, can be found in Volumes 1 and 2 of the Hereford report (CBA Research Reports Nos 36 and 46). The following summary, which is included for ease of reference, enables the finds to be associated with an individual period and date range and with a particular type of occupation, but the complete reports are necessary to relate the finds to an individual context. The order of the summaries is the same as that of the excavation reports in Volumes 1 and 2 and page and microfiche cross-references are included.

### **CASTLE GREEN (Vol 1)**

A small excavation in 1973 established that the area on which the Norman castle was built was originally one of the principal burial grounds of the city and also housed the collegiate church of St Guthlac. The religious settlement moved to a new site in the suburbs of the city in the mid 12th century and its original property became absorbed in the bailey of the castle.

**PERIOD 1** Part of an east-west oriented building which contained several 'charcoal' burials was in use for some of the period between the 8th and early 10th centuries (period 1a). The building was reconstructed during the early 10th century and finally demolished before the mid 11th century (period 1b). Burial on the site continued at least until the mid 12th century (period 1c). Some seven different varieties of burial were identified and a chronology proposed.

**PERIOD 2** The area became part of the bailey of Hereford castle in the mid 12th century and continued to be so used until after the Civil War.

**PERIOD 3** The whole of the Castle Green was landscaped as a public open space during the 18th and 19th centuries.

### **VICTORIA STREET (Vol 2, 28-35 and M1.B6-M1.D14)**

This area excavation took place in 1968 and was designed to establish the constructional phases of the western defences of the city. It followed an exploratory excavation in 1967 (Shoesmith, 1967). Ditch and bank sections, which were exposed by workmen constructing a pedestrian subway, were also examined.

**PERIOD 1** Two grain drying ovens, partly constructed of re-used Roman materials, each consisting of a combined stoke hole and firing chamber with a single long horizontal flue, were found. They were probably in use between the mid 7th and the end of the 8th century.

**PERIODS 2 and 3** Built partly over the destroyed remains of the grain drying ovens was a timber building of posthole construction. A metalled path led to the building from the south and on the west was a small boundary bank and ditch. The building, probably part of a group of similar buildings, each in a separate plot, is dated to the late 8th or 9th century. Other buildings of the group were found on the Berrington Street sites (period 1).

**PERIOD 4** The tail of a clay and gravel bank, considered to be defensive, sealed the period 3 occupation. It was probably constructed in the mid or late 9th century.

PERIOD 5 A turf and clay rampart was built on top of the period 4 gravel rampart (period 5a). Only the rear part survived in the main excavation area. The rampart was strengthened by the addition of at least one stone wall and a rear metalled road (period 5b) and eventually fell into disuse (period 5c). A constructional date in the very late 9th or early 10th century is postulated with a strengthening in the early to mid 10th century followed by a disuse phase which lasted into the middle of the 11th century.

PERIOD 6 A thick layer of clean gravel, which sealed the earlier defensive features, is considered to represent the next phase of the city defences and was probably built in the middle of the 11th century.

PERIOD 7 The front part of the defences of periods 4-6 was cut away to accommodate the medieval wall during the early to mid 13th century.

PERIOD 8 Pits and gullies were cut into the tail of the defences as they fell into disuse.

A watching brief, in an area to the north of the main site, was organised to examine a series of sections of the ditches and ramparts (the Subway Sections). These sections established that the defences of periods 4 and 5 turned eastwards between West Street and Eign Gate whilst the period 7 defensive ditch continued to the north together with the medieval wall.

## **CANTILUPE STREET (Vol 2, 35-45 and M1.E8-M1.G14)**

Excavations in 1972 and 1975, in the garden of 5 Cantilupe Street, established the eastern line of the defences previously described as Victoria Street periods 5 and 7. The remains found, which were in a good state of preservation, have been conserved and will be open to public view. Several trenches were cut by machine to examine the external ditches.

**PERIOD 1** The earliest occupation of the site consisted of a turf and clay rampart with timber lacing and a timber face similar to the period 5a defence at Victoria Street. A ditch in front of this defensive work could belong to period 1 or period 2a. The defences are considered to have been constructed during the late 9th or early 10th centuries. There was no trace of the Victoria Street period 4 clay and gravel bank.

**PERIOD 2a** The period 1 defence was improved by the addition of a massive stone revetment wall to the front, a smaller wall on the rear crest, and a path along the bottom of the tail. This building phase, comparable to Victoria Street period 5b, is dated to the early or mid 10th century.

**PERIOD 2b** Repair work to the stone walling of the defences was carried out at some date later in the 10th century.

**PERIOD 3a** The defences fell into disuse and reverted to a smooth bank as the walls collapsed. This phase lasted at least until the mid 11th century.

**PERIOD 3b** Either a timber palisade or a thorn and paling fence was constructed on top of the disused defences at some time between the mid 11th and the early 13th centuries.

**PERIOD 4** The medieval wall was built in a deep foundation trench which partly utilised the period 1 or period 2a ditch. Gravel from the associated new ditch was thrown behind the wall thus sealing all the earlier works of periods 1-3. The medieval wall is of early to mid 13th century date.

**PERIOD 5** The medieval wall was partially rebuilt several times between the 14th and the 19th centuries and slight pits were cut into the layers behind the wall.

#### **BERRINGTON STREET (Vol 2, 46-55 and M2.A1-M2.F6)**

Four separate sites were examined between 1972 and 1976 in the area between the western defences and Berrington Street. The excavations established details of the pre-Conquest development of the area and of the post-defensive occupation. The four sites (Berrington Street sites 1 to 4) are reported as one excavation

**PERIOD 1** Parts of the plans of four posthole buildings, fronting a metalled street running parallel to and 35m to the west of Berrington Street, were established. Traces of three other buildings of possibly two separate phases, on the same alignment and close to Berrington Street, were also found. Only fragments of the associated occupation levels survived. The buildings are considered to date from the late 8th and 9th centuries and could thus be associated with the period 2 occupation at Victoria Street.

**PERIOD 2** At least three constructional phases (periods 2a, 2b, and 2c) were established for various timber buildings fronting, or close to, the line of Berrington Street. No complete plan could be established for any of the buildings. They were apparently constructed during the 10th century and, with alterations and additions, continued in use until the early 12th century.

The extreme tail of the turf and clay rampart and the intervallum road, (Victoria Street periods 5a and 5b) were found in two cuttings on the western side of the excavation. There was no firm stratigraphical relationship between these defences and the occupation levels close to Berrington Street. The period 2 defensive sequence was built between the late 9th and mid 10th centuries.

**PERIODS 3 AND 4** Most of the area excavated was disturbed by rubbish and cess pits during the late 12th and 13th centuries. They are considered in two separate groups: period 3 - from the late 12th to the early 13th century; and period 4 - during the late 13th century.

**PERIOD 5** Further pits were dug during the 14th and 15th centuries but one part of the site was used for cauldron manufacture. The bases of two furnace flues and several pits, which may have been used to contain liquids, were also found.

**PERIOD 6** A few rubbish pits were found associated with the remains of a two phase house with stone footings which fronted Berrington Street. The building was in use between the 16th and 18th centuries.

**PERIOD 7** Disturbances of 19th century or later date.

**BEWELL HOUSE (Vol 2, 55-61 and M2.F7-M3.B4)**

A large scale exploratory excavation in the north-western corner of the medieval walled city helped establish a sequence for local pottery and also related the extended northern defences to the various occupation periods

**PERIOD 1** The site was traversed by several east-west ditches and gullies which were considered to be property boundaries dating to the 11th and 12th centuries.

**PERIOD 2** Part of the late 12th century defensive rampart was found sealing the earlier property boundaries. Only the extreme tail of this gravel bank was examined.

**PERIOD 3** A series of large postholes is tentatively identified as the surviving remains of a defensive tower associated with the gravel rampart. There was no associated ground level but pottery finds from the post pits and from two large cess pits of the same period suggest a date of construction during the early 13th century.

**PERIOD 4** The area immediately within the defensive bank had an industrial use during the mid 13th century which included two buildings, one of which contained a grain-drying oven built within a large pit.

**PERIOD 5** During the period from the late 13th to the mid 14th century the area was cultivated and several refuse pits were dug.

**PERIOD 6** The ground remained under cultivation throughout the 300 year period from the late 14th century until the construction of Bewell House. Property boundaries, which crossed the site in a N-S direction, were gradually established.

**PERIOD 7** Details of the landscaped gardens associated with Bewell House were investigated. They were of two phases (periods 7a and 7b) dated to the early to mid 18th century and the late 18th to early 19th century.

**PERIOD 8** The garden area became part of the Hereford Brewery in the mid 19th century.

#### **THE BREWERY (Vol 2, 61-65 and M3.B5-M3.E2)**

An area on the line of the extended gravel rampart, at the north-western corner of the walled town, was examined in 1968 in an attempt to establish the dating of the rampart and to examine the occupational sequence in this part of the city

**PERIOD 1** Ditches and gullies, considered to be property boundaries, and a metalled surface were all tentatively dated to the 10th or early 11th centuries.

**PERIOD 2** This was a complex occupation period which apparently lasted throughout most of the 11th and 12th centuries. A series of posthole buildings (period 2a) was replaced by several pits and two furnaces used for bell manufacture (period 2b). The area was eventually cultivated resulting in the loss of most of the occupation levels associated with the buildings (period 2c).

**PERIOD 3** The late 12th century gravel rampart of the extended northern defence sealed most of the site.

**PERIOD 4** Pits were cut into the rampart during the late 12th and early 13th centuries (period 4a). The area reverted to industrial use by the 14th century when bell moulds were made on the site (period 4b). Later pits were dated to the 15th and 16th centuries (period 4c).

#### **MINOR SITES** (Vol 2, 65-9 and M3.E3-M3.G6)

Several small excavations and watching briefs are recorded in Volume 2. They were mainly concerned with details of the defensive sequence and comprised:

##### **CITY WALL EXCAVATIONS**

A series of excavations between 1965 and 1969 which examined various aspects of the city wall including, in particular, bastions 4, 6, 9, 10, and 10a.

##### **FRIARS' GATE**

A section across the western defences close to the site of Friars' Gate in 1971 confirmed the sequence previously exposed 120m to the north at Victoria Street.

##### **LIBERAL CLUB**

A section across the extended northern defence in 1971 established some details of its construction and provided dating evidence.

#### **ST OWEN'S GATE AREA**

An examination took place in 1973 of the city wall in the yard of the Lamb Hotel, close to the site of St Owen's Gate. The wall was found to have been built as a face to a cut-back part of the earlier gravel rampart.

#### **CITY ARMS**

A watching brief in 1973, during conversion of the old City Arms Hotel in Broad Street to a branch of Barclays Bank, established that the ditch associated with the pre-Conquest defences was open until the 13th century but was backfilled and built upon by the 15th century.

# **PART ONE**

## **THE SMALL FINDS**

# **PART ONE**

## **THE SMALL FINDS**

### **INTRODUCTION**

Finds of metal, stone, glass, and bone are described in a standard format based on the figure number and individual object number on the figure to allow a simple method of cross-referencing between this volume and the excavation reports in volumes 1 and 2. At the beginning of each category there is a short introduction where the quantity and distribution of finds amongst the sites are discussed. This is followed by an inventory and the section is concluded with a discussion of any finds of special importance.

Although the small finds are illustrated both in the printed text and in the microfiche section, the text which accompanies them is different in each. The microfiche section considers each object in detail whilst the printed text merely contains a summary. The differences are shown below:

#### **Printed text**

Type of object

Reasonable date range for manufacture and/or use

Site, period and context where found (L and F are used to separate layers from other features)

Microfiche reference to object

#### **Microfiche section**

Full description of object

Measurements

Parallels and dates of parallels where known

Reasonable date range for manufacture, use and deposition  
where applicable

Site, period and context where found

Date of context according to excavation record

Microfiche reference to individual context (Volume 2)

The probability of the date range for the 'reasonable date of manufacture' being correct can vary according to the period and the reliability of other associated evidence for absolute dating. Thus during the mid, and in some cases the late Saxon period, the date range given may have a low order of probability of being correct whilst in the late and post-Medieval periods the date range is much more certain. If the degree of probability is low the given range is prefixed circa and an allowance should be made.

The date range for the context suffers from similar inherent problems and, in all cases, the most likely range is given. The dating of individual periods and contexts is dealt with in detail in the appropriate excavation texts in volumes 1 and 2.

## METAL OBJECTS

Artefacts of copper or copper alloy found in the Hereford soils are usually in reasonably good condition, but most iron objects consist of an encrusted mass of rust with little or no metal left. Several were X-rayed in an attempt to establish the shape and, where it existed, the decoration.

A fragment of a brooch (Fig 17.1) is certainly of Roman origin and a key (Fig 3.1) may also be of this period. Most other objects are probably of later date. The pre-Conquest levels contained little identifiable metalwork apart from knives, two finger rings and three early 11th century copper alloy clips, but during the late 11th and the 12th centuries more use was made of both iron and copper and a greater variety of objects was found.

Most of the arrowheads found were in 12th century or later contexts as were the more decorative copper alloy objects. Pins and needles were first found in mid to late 13th century levels but were not common until the 16th century. Several of the iron objects are probably parts of equipment used with horses but horseshoes were surprisingly uncommon. Three fragments are illustrated and the very corroded remains of three others were found. All except one, an 11th century specimen, were of 14th century or later date. Decorative metalwork was scarce in all periods, possibly reflecting the relative poverty of most of the areas examined during the various periods represented. Objects made of lead were rare and found only in 10th century and later contexts.

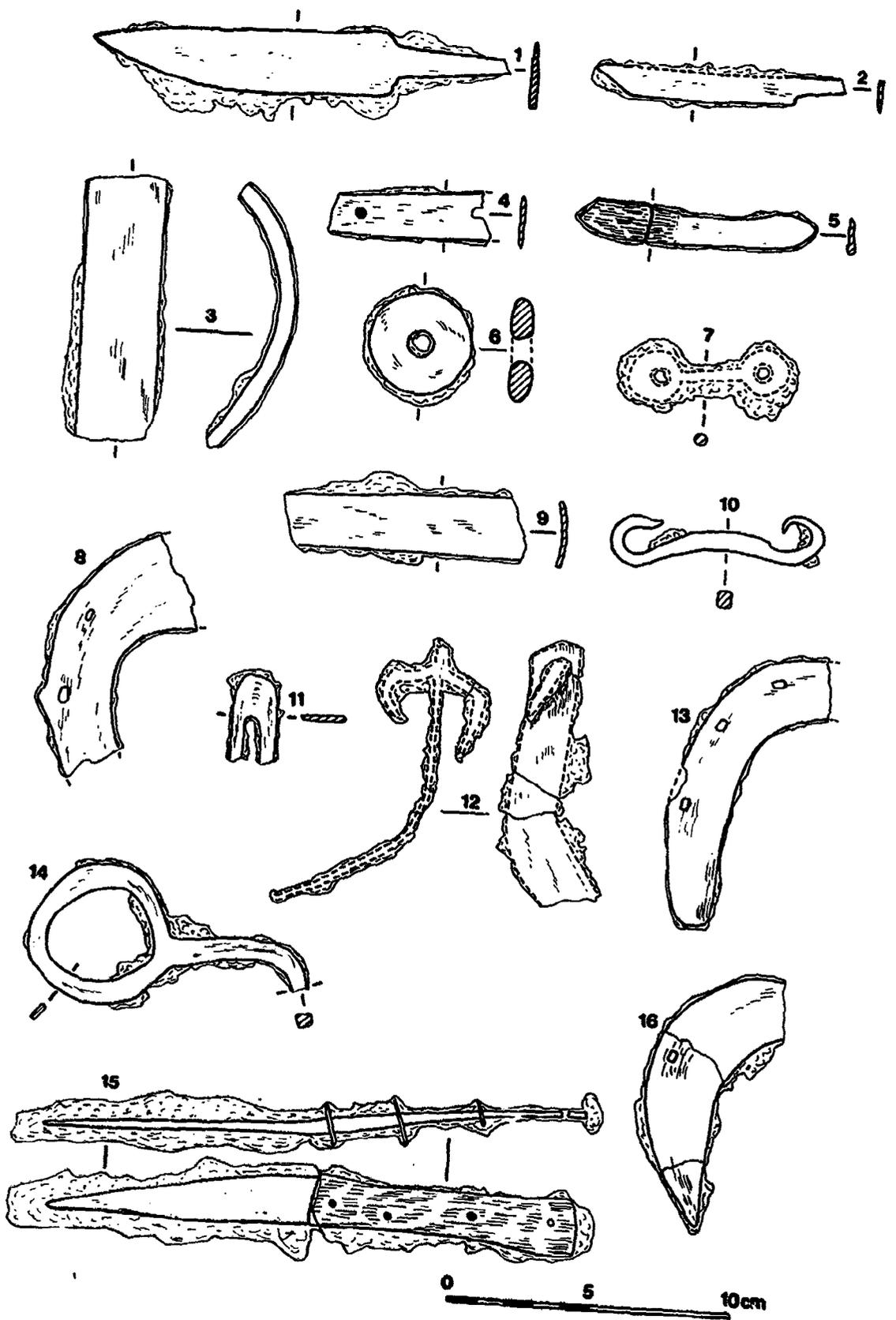


Fig 1 Iron Objects - 7th to 15th centuries

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## IRON OBJECTS

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Many iron objects were too corroded for their form to be established, even after X-ray. The examples illustrated comprise mainly knives, horse furniture and a series of arrowheads. Some nails were found but almost all were broken or in very poor condition and none are illustrated. A solid line is used in the illustrations where the outline is well established; a pecked line indicates that the outline is uncertain. Surrounding the outline is an impression of the accretion. An asterisk after the figure number indicates that the object was X-rayed before drawing.

### Catalogue (Fig 1:M4.F1)

- 1.1\* Part of a knife with a broken blade. The piece is single-sided with the tang tapering in both from the back and from the cutting edge of the blade. The tang is circular in cross-section. Total surviving length: 145mm  
Maximum width of blade: 23mm  
cAD 650-800
- Victoria Street  
Oven 309: Period 1  
(M1.B9-C2)  
Mid 7th to 8th century
- 1.2\* Part of a small knife with a broken blade. The short rectangular tang has traces of wood attached. The blade is of triangular cross-section and widens slightly from the tang towards the tip. Total surviving length: 88mm  
Average width of blade: 10mm  
cAD 650-800
- Victoria Street  
Oven 309: Period 1  
(M1.B9-C2)  
Mid 7th to 8th century

- 1.3 Thick curved strip which is probably broken at both ends. It was possibly a binding for a wooden container.  
 Width: 26mm  
 Thickness: 5mm  
 cAD 750-900
- Berrington Street 2  
 Burnt layer 262:  
 Period 1  
 (M2.A6-C5)  
 Late 8th to 9th century
- 1.4 Either a knife handle or a strip with two rivet holes. The piece is broken at the right-hand rivet hole.  
 Length of fragment: 53mm  
 Average width: 15mm  
 cAD 950-1100
- Victoria Street  
 Layer 88: Period 5c  
 (M1.D4-D10)  
 Mid 10th to 11th century
- 1.5 A complete small knife. The tang and blade are similar in width and thickness and the cutting edge is slightly concave possibly due to wear. Traces of wood remain on the tang.  
 Total length: 83mm  
 Width of blade: 9mm  
 cAD 900-1000
- Berrington Street 4  
 Pit 837: Period 2a  
 (M2.C5-C10)  
 10th century
- 1.6 Disc containing a central hole. The piece is of similar shape and size to a spindle whorl.  
 Diameter of disc: 36mm  
 Thickness: 7mm  
 Diameter of hole: 8mm  
 cAD 1000-1050
- Berrington Street 4  
 Layer 842: Period 2b  
 (M2.C10-C12)  
 Early 11th century

- 1.7 Heavily corroded bar with a hook at each end. This could be one half of a two-link mouth-piece of a snaffle-bit or the central link in a three-link mouth-piece (LMC, 1940, 79-85)  
Length: 56mm  
cAD 1050-1150
- Berrington Street 4  
Layer 792: Period 2c  
(M2.C13-D2)  
Late 11th to early  
12th century
- 1.8 Part of a horseshoe with the typical sinuous outline caused by punching the nail holes. The form is rather heavy for the period.  
(LMC, 1940, 112-17)  
cAD 1000-1050
- Berrington Street 4  
Layer 842: Period 2b  
(M2.C10-C12)  
Early 11th century
- 1.9 A slightly curved strip which may have been part of a knife blade.  
Length: 84mm  
Average width: 21mm  
AD 1100-1200
- Brewery  
Pit 45: Period 2b  
(M3.C10-D3)  
12th century
- 1.10 A bar, square in cross-section, with a hook at each end. This could be one half of a two-link mouthpiece of a snaffle-bit.  
(LMC, 1940, 79-85)  
Length: 73mm  
AD 1100-1200
- Brewery  
Layer 15: Period 2c  
(M3.D3-D8)  
Late 12th to early  
13th century
- 1.11 Part of a broken hook or a slotted strip of uncertain use.  
cAD 900-1000
- Berrington Street 2  
Feature 112: Period 2a  
(M2.C5-C10)  
10th century

- 1.12 Strip which is bent and corroded and possibly broken at the bottom. A bar forming a double hook has been inserted through a hole in the strip.  
Length: 120mm  
cAD 750-900
- Berrington Street 2  
Pit 259: Period 1  
(M2.A6-C5)  
Late 8th to 9th century
- 1.13 Part of a horseshoe with three nail holes and a plain outline. (LMC, 1940, 112-17)  
AD 1350-1500
- Berrington Street 4  
Pit 714: Period 5  
(M2.E7-E13)  
Late 14th to 15th century
- 1.14 This broken piece is almost certainly part of the cheek piece of a snaffle-bit. (LMC, 1940, 79-85)  
Internal diameter of ring: c35mm  
Probably AD 1250-1350
- Bewell House  
Pit 259: Period 5  
(M3.A8-A11)  
Late 13th to mid 14th-century
- 1.15\* Heavily corroded fragments of a knife. The blade is triangular in cross-section, tapering to a point and the tang is rectangular. Some wood, which was originally held in place by four iron rivets, survives on the tang.  
Length: 187mm  
AD 1300-1400
- Brewery  
Bell mould pit 253:  
Period 4b  
(M3.D12-E2)  
14th century
- 1.16 Part of a heavy horseshoe with a pointed end and no calkin. (LMC, 1940, 112-17)  
AD 1250-1300
- Berrington Street 4  
Pit 772: Period 4  
(M2.E2-E7)  
Late 13th century

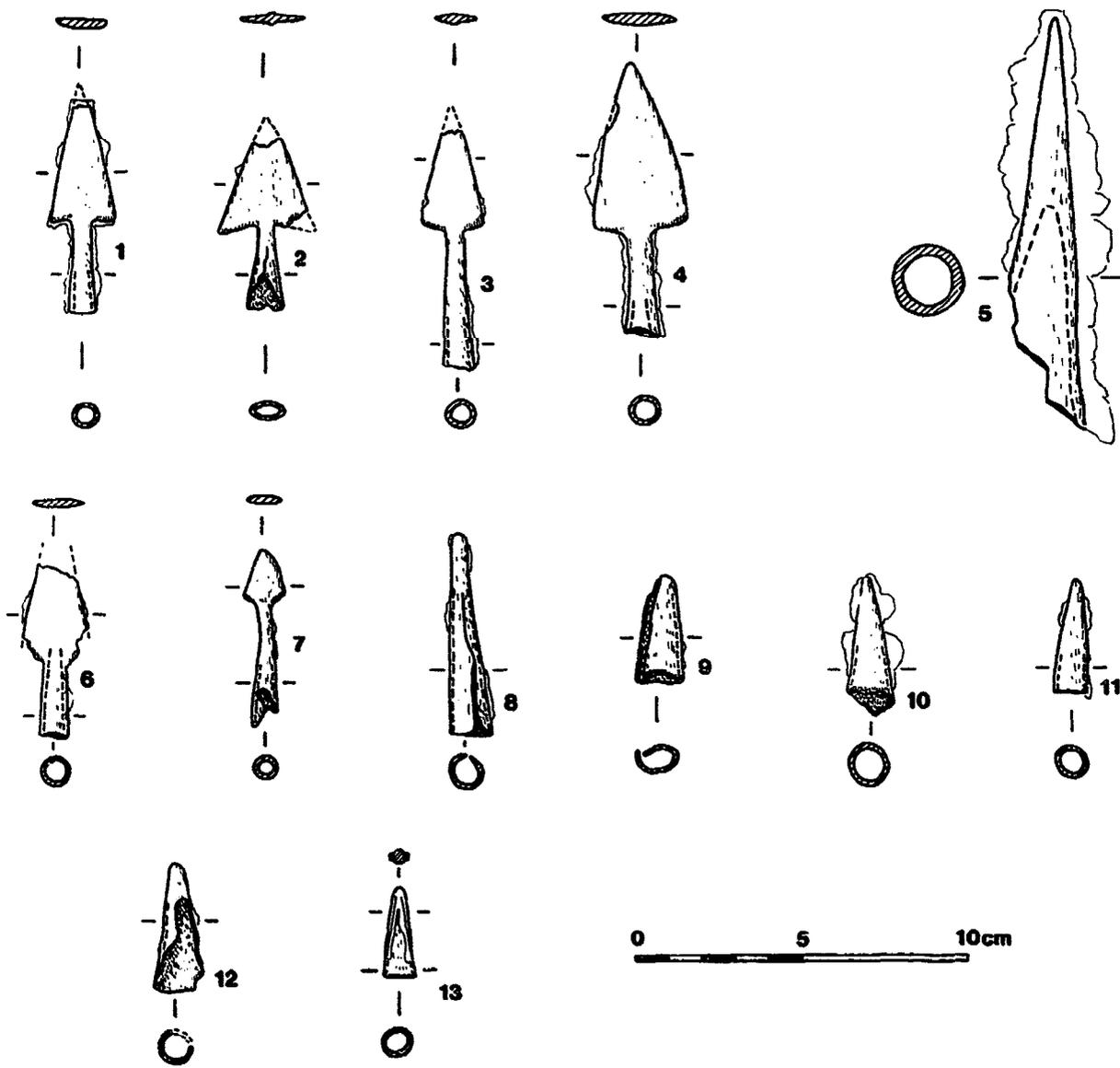


Fig 2 Arrowheads - 12th to 15th centuries

## ARROWHEADS

Nine of the thirteen arrowheads described below were found during the 1973 excavations on Castle Green (Vol 1, 1980). They came from the few surviving levels of the medieval castle and presumably reflect the military activity in the area. The remaining four were from areas close to the defences, three from Berrington Street site 4 and one from Bewell House. They were all in mid 12th century or later contexts but some could have been residual.

### Catalogue (Fig 2:M4.F7)

The types are taken from LMC, 1940, 65-73

- |     |   |   |
|-----|---|---|
| 2.1 | Socketed arrowhead with a broad flat blade. The point is broken.<br>Type 2<br>Original length: 70mm<br>AD 1100-1300                                       | Berrington Street 4<br>Pit 739: Period 4<br>(M2.E2-E7)<br>Late 13th century         |
| 2.2 | Socketed arrowhead with a broad flat leaf-shaped blade. The point and one of the barbs are both broken<br>Type 2<br>Original length: 58mm<br>AD 1100-1300 | Castle Green<br>Layer 9: Period 2c<br>(Vol 1, 1980, 21)<br>Mid 12th to 15th century |
| 2.3 | Arrowhead with a long socket and small head. The point is broken.<br>Type 3<br>Original length: 77mm<br>AD 1200-1300                                      | Castle Green<br>Unstratified  |
| 2.4 | Socketed arrowhead with a broad flat blade.<br>Type 1-2<br>Length: 82mm<br>Probably AD 1200-1300  | Bewell House<br>Layer 258: Period 5<br>(M3.A8-A11)<br>Late 13th to mid 14th century |

- 2.5 A pointed, socketed object, presumably designed to fit on the end of a piece of wood, but rather heavy for an arrow. It could be a spear-head.  
(LMC, 1940, 73-4)  
Length of fragment: 124mm  
Probably AD 1250-1300  
Berrington Street 4  
Cesspit 812: Period 4  
(M2.E2-E7)  
Late 13th century
- 2.6 Socketed, leaf-shaped arrowhead with the point missing.  
Type 1-2  
Length of fragment: 53mm  
Probably AD 1200-1300  
Berrington Street 4  
Layer 720: Period 5  
(M2.E7-E13)  
14th to 15th century
- 2.7 Arrowhead with a long socket and small flat blade.  
Type 3  
Length: 55mm  
AD 1200-1300  
Castle Green  
Layer 9: Period 2c  
(Vol 1, 1980, 21)  
Mid 12th to 15th century
- 2.8 Long, conical arrowhead, used against defensive armour.  
Type 7  
Length: 62mm  
AD 1200-1400  
Castle Green  
Layer 13: Period 2c  
(Vol 1, 1980, 21)  
Mid 12th to 15th century
- 2.9 Small conical arrowhead, possibly for a cross-bow.  
Type 5  
Length: 33mm  
AD 1400-1500  
Castle Green  
Layer 11: Period 3  
(Vol 1, 1980, 22)  
Mid 18th century
- 2.10 Small conical arrowhead.  
Type 5  
Length: 42mm  
AD 1400-1500  
Castle Green, Area 1  
Layer 29: Period 3  
(Vol 1, 1980, 22)  
18th century

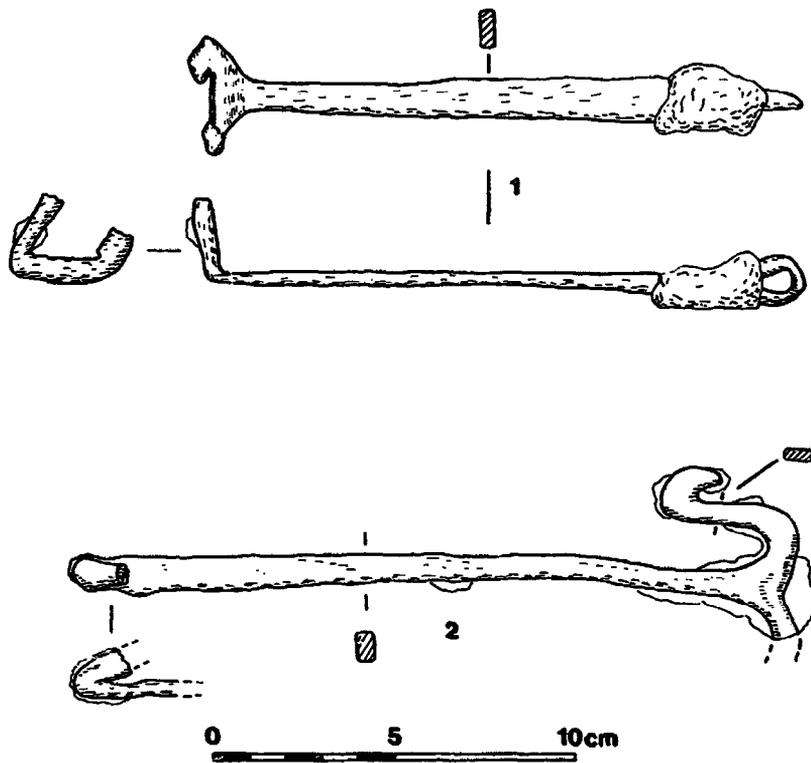
- |   |  |
|---|--|
| <p>2.11 Small conical arrowhead.<br/> Type 5<br/> Length: 35mm<br/> AD 1400-1500</p>  | <p>Castle Green<br/> Layer 9: Period 2c<br/> (Vol 1, 1980, 21)<br/> Mid 12th to 15th century</p> |
| <p>2.12 Small conical arrowhead.<br/> Type 5<br/> Length: 40mm<br/> AD 1400-1500</p>  | <p>Castle Green<br/> Layer 9: Period 2c<br/> (Vol 1, 1980, 21)<br/> Mid 12th to 15th century</p> |
| <p>2.13 Small conical arrowhead with<br/> traces of solder on the join.<br/> Type 5<br/> Length: 27mm<br/> AD 1400-1500</p> | <p>Castle Green<br/> Layer 9: Period 2c<br/> (Vol 1, 1980, 21)<br/> Mid 12th to 15th century</p> |

#### THE ARROWHEADS

The socketed arrowheads with a broad, flat, leaf-shaped blade (LMC, types 1 and 2) (Fig 2.1-4 & 6) are common as a pre-Conquest type and apparently lasted into but not beyond the 13th century. The longer shanked type 3 (Fig 2.7) is a more specialised form of this type. Examples of no 1 were found at Bramber Castle in a mid 13th to 14th century context (Barton and Holden, 1977, Fig 19.4 & 5) and at Brandon Castle in a mid 13th century context (Chatwin, 1955, Figs 16 and 23). Nos 3 and 4 have also similar parallels at the same sites; at Bramber with Fig 19.6 & 7 and at Brandon Fig 17.1 (in a 12th century context) and Fig 16.10 (in a 13th century or earlier context) (op cit). No 7 can be equated with Bramber Fig 19.8 and Brandon Fig 16.11 (in a 14th or 15th century context).

The long, thin conical arrowhead of type 7 (Fig 2.8) was slender enough to enter cracks in defensive armour and was probably developed in the 13th century. In its ultimate form it became the small bullet-shaped socket (Fig 2.9-13) which was used with the cross-bow and probably dates to the 15th century. Various

types of bullet-shaped arrowheads were found in the excavations at Baile Hill, York, mostly in undated contexts (Addyman and Priestley, 1977, Fig 10.41-9). Arrowheads with barbs of varying sizes were used in the medieval period only during the chase as they were not sufficiently strong and heavy to penetrate defensive armour (LMC, 1940, 65-73). The large socket (Fig 2.5) may have been used on a spear (LMC, 1940, 73-4).



**Fig 3** Keys (no 1 - Roman or Saxon; no 2 - late 12th to early 13th century)

## KEYS

### Catalogue (Fig 3:M4.F13)

- 3.1 The piece is probably part of a key and is hooked at the upper end with some wood-like material adhering. The rectangular shank is attached to a broad, broken lock fitting. This type of key was used in a barrel padlock and the type occurs from the Romano-British period to the medieval. A similar key from Cheddar was in a 13th century context (Rahtz, 1979, Fig 90.143; LMC, 1940, 146).  
Length: 170mm  
Roman or Saxon
- Berrington Street 1  
Layer 60: Period 1  
(M2.A6-C5)  
Late 8th to 9th century
- 3.2 The shank and part of a decorative handle of a key. The wards are missing.  
Length of fragment: 198mm  
cAD 1150-1250
- Berrington Street 1  
Pit 56: Period 3  
(M2.D10-E2)  
Late 12th to early  
13th century

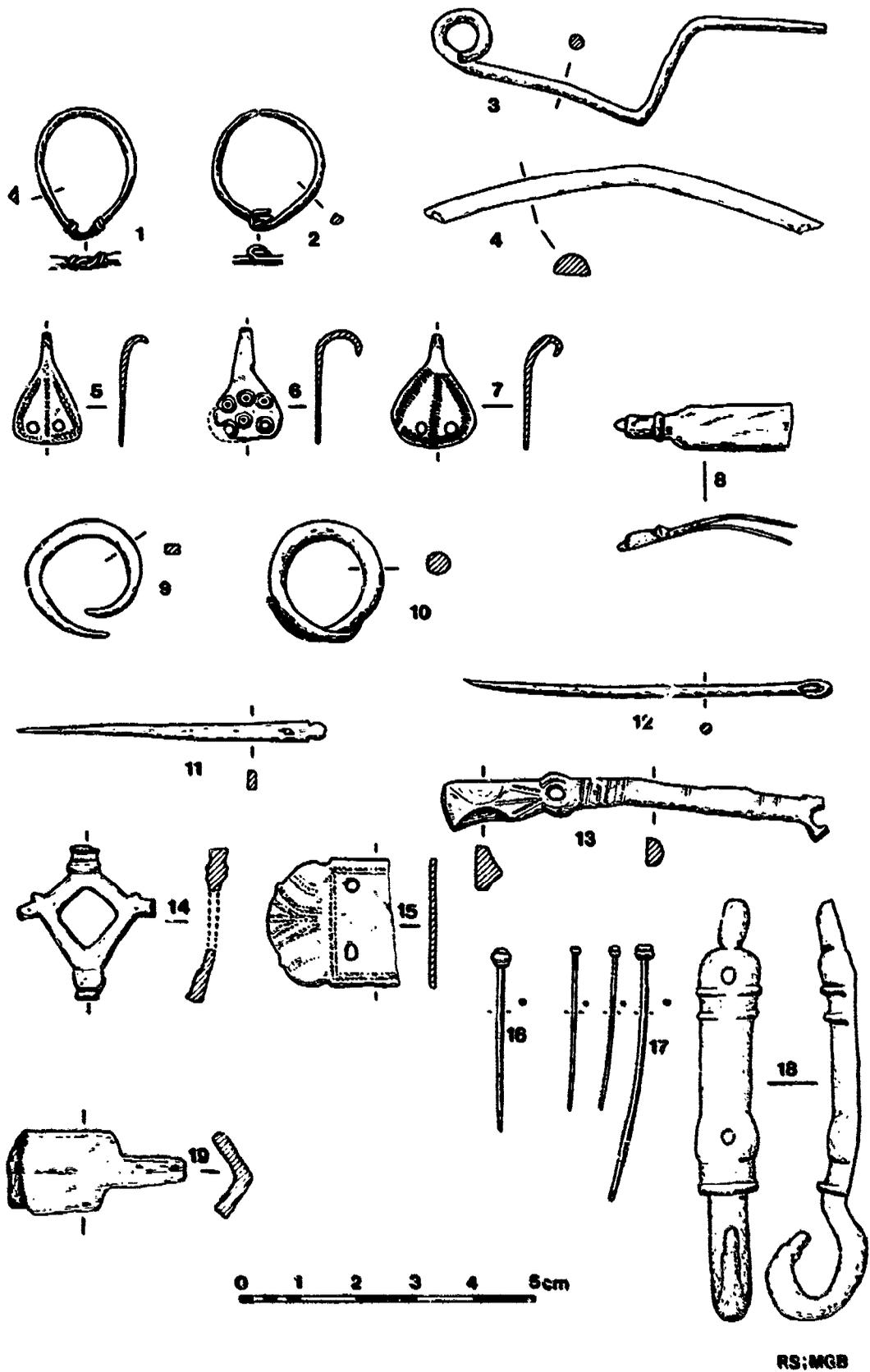


Fig 4 Copper alloy objects - 8th to 17th centuries

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## COPPER ALLOY OBJECTS

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There are very few copper alloy objects of a pre-Conquest date from Hereford. Apart from a piece of wire and a fragment of a small bar, there were two simple rings and three small hooked objects which are thought to be garter hooks. There is a slight increase in the variety and type of object during the 12th and 13th centuries with hooks, strapping and a possible key handle but copper objects continue to be rare even as late as the 17th century.

### Catalogue (Fig 4:M4.G1)

- 4.1 A small finger ring made of wire which is wound together to form a decorative knot. A similar knotted ring with a small undecorated bezel was found associated with a mass Viking grave at Donnybrook, Co Dublin (Hall et al, 1978, 71)  
cAD 950-1100 (Fig 5) Victoria Street  
Probably Layer 22:  
Period 5c  
(M1.D6-D10)  
Mid 10th to 11th century
- 4.2 A small finger ring made from a piece of wire, 1mm in diameter. The ends consist of two simple hooks which are twisted together.  
cAD 750-900 Berrington Street 4  
Layer 900: Period 1  
(M2.A6-C5)  
Late 8th to 9th century
- 4.3 A piece of wire with one end bent over to form a hook.  
cAD 1050-1150 Berrington Street 3  
Layer 513: Period 2c  
(M2.C13-D4)  
Late 11th to early  
12th century

- 4.4 A length of bar with a semi-circular cross-section. The piece appears to have been broken at both ends where there are traces of holes.  
Length: 68mm  
cAD 750-900
- Berrington Street 4  
Layer 880: Period 1  
(M2.B12-C5)  
Late 8th to 9th century
- 4.5 A small, hooked flat plate with an incised decorative motif. There are two small holes in the piece which was found associated with no 7. They may be garter hooks.  
(Fig 6 and M4.G6)  
cAD 900-1050
- Berrington Street 4  
Layer 844: Period 2b  
(M2.C10-D4)  
Early to mid 11th century
- 4.6 A flat plate similar to 5 above but decorated with ring and dot ornament.  
(Fig 6 and M4.G6)  
cAD 900-1050
- Brewery  
Unstratified
- 4.7 A flat plate similar to and from the same context as 5 above, but with a slightly different decoration.  
(Fig 6 and M4.G6)  
cAD 900-1050
- Berrington Street 4  
Layer 844: Period 2b  
(M2.C10-D4)  
Early to mid 11th century
- 4.8 A broken pair of tweezers.  
Length of fragment: 30mm  
AD 1250-1350
- Bewell House  
Layer 258: Period 5  
(M3.A8-A11)  
Late 13th to mid 14th century

- 4.9 A ring-shaped piece with a rectangular cross-section, thinning and becoming pointed towards the ends.  
cAD 1250-1300  
Berrington Street 4  
Pit 790: Period 4  
(M2.E2-E7)  
Late 13th century
- 4.10 A small ring of circular cross-section pulled out to points at each end and loosely overlapped.  
AD 1100-1200  
Brewery  
Pit 70: Period 2c  
(M3.D3-D8)  
12th century
- 4.11 A pin of rectangular cross-section with a shaped head. There is a small hole at the top of the shank.  
Length: 53mm  
The date of manufacture is uncertain but is likely to be during the 16th or 17th centuries  
Castle Green, Trench 1  
Layer 3: Period 2c  
(Vol 1, 1980, 21)  
Mid 12th to mid 17th century
- 4.12 A bodkin of circular cross-section.  
Length: 63mm  
Hole: 3.5mm long  
The piece may be of mid 13th century date but could be later  
Bewell House  
Layer 248: Period 4  
(M3.A5-A8)  
Mid 13th century
- 4.13 A cast strip broken at the right-hand end. The top, decorated surface is rounded and the bottom flat. The piece is probably an ornamental strip for attaching to wood or leather (Jope, 1959, 267-8).  
Length: 66mm  
cAD 1225-1275  
Bewell House  
Layer 346 in oven 304:  
Period 4  
(M2.G9-M3.A8)  
Mid 13th century

- 4.14 A small decorative piece,  
probably broken at the bottom.  
It could be the lozenge-shaped  
bow of a chest key (LMC, 1940,  
133-45).  
Probably AD 1250-1350
- Berrington Street 4  
Layer 720: Period 5  
(M2.E7-E13)  
14th to 15th century
- 4.15 A fragment of a decorated sheet,  
broken at the right-hand end. It  
contains two holes, each about  
2mm diameter. The piece is  
possibly part of a clasp from a  
book or box.  
Length of fragment: 22mm  
Width: 22mm  
AD 1250-1350
- Bewell House  
Layer 258: Period 5  
(M3.A8-A11)  
Late 13th to mid 14th  
century
- 4.16 A pin with a wire wound head.  
Length: 31mm  
AD 1250-1350
- Bewell House  
Layer 258: Period 5  
(M3.A8-A11)  
Late 13th to mid 14th  
century
- 4.17 Three pins with wire wound heads.  
Lengths: 28mm, 28mm and 55mm  
AD 1250-1350
- Bewell House  
Layer: 258: Period 5  
(M3.A8-A11)  
Late 13th to mid 14th  
century
- 4.18 A decorated, cast hook, the main  
part being of semi-circular  
cross-section with a flattened  
rear. The two holes in the back  
part of the hook contain traces  
of iron fastenings. The shank is  
roughly the shape of a human  
figure.  
Overall length: 73mm  
AD 1250-1300
- Berrington Street 1  
Pit 57: Period 4  
(M2.E2-E7)  
Late 13th century

4.19 Corroded, cast fragment, which is probably broken at both ends but is apparently a crude spoon. Length of fragment: 30mm  
Berrington Street 1 Pit 57: Period 4 (M2.E2-E7)  
Mid to late 13th century  
AD 1250-1300

THE LATE SAXON STRAP CLIPS (Fig 4.5-7 and Fig 6)

Two small copper alloy clips were found together on Berrington Street site 4 in an early to mid 11th century context (Fig 4.5 & 7) and a third, of similar shape and size was found in an unstratified context at the Brewery site (Fig 4.6).

4.5 is a small rounded triangular plate, 19mm long and 11mm in maximum width, with the apex drawn out to a hook. It has an incised decoration which separates the face into two triangles. Two holes, each 2mm in diameter, occupy the lower parts of these triangles.

4.6 is of similar shape but with a slightly larger hook. It is decorated with four 'ring and dot' motifs. Balancing the 'ring and dot' decoration in the lower part of the piece are two holes each 1.5mm in diameter.

4.7 is of similar shape to the others but has a maximum width of 14mm. It has a similar, but not identical, decoration to 4.5, and has also two holes each 2mm in diameter.

Bronze and silver clips of this general type have been found in several late Saxon contexts. They vary in shape from triangular through rounded triangular to circular. Two plain triangular silver clips from Tetney, Lincs, each 27mm long, were found with a coin hoard deposited cAD 970 (Wilson, 1964, Plate XXXII; nos 86 and 87). Two sub-triangular silver clips, each 40mm long, with Trewiddle style ornamentation, which were found beneath the knees of a skeleton in the old Minster at Winchester (Biddle, 1964, 263-4 and Plate LXXIXc), are dated by association with the

Trewhiddle hoard to cAD 874 (Wilson, 1964). Other bronze clips have been found in late Saxon pagan graves in Cambridgeshire (grave 1 at Burwell, Cambs (Lethbridge, 1931, 48 and Fig 22.1) and grave 67 at Shudy Camps (Lethbridge, 1936, 21 and Fig 1)), at Thetford in contexts not earlier than the 8th or 9th centuries and at Whitby (Dunning in O'Neil, 1952, 79-80). Three bronze clips of similar shape and size to the Hereford example, together with one of triangular shape, were found in surface levels above the Roman villa at Whittington Court (op cit, Fig 13.2-5) and a bronze circular variety, 12mm in diameter, with both ring and dot and incised line decoration was found in topsoil at Walton, Aylesbury (Farley, 1976, 216, Fig 24.7 and Plate 5). The latter has five holes within the 'dots' of the decoration, but the lower two are larger and drilled from both sides. Three examples have been found in Cirencester, two of which are similar to Hereford Fig 4.5 & 7, whilst the third is of irregular shape (McWhirr, 1976, Fig 3.2:18-20). Five hooks were found at Cheddar: three of them are triangular; one plain, one having wavy line decoration and one modified 'dots and circles'; the fourth is a plain oval and the fifth, circular with pierced 'ears' at the extremities. They were mainly in 10th and 11th century contexts (Rahtz, 1979, Fig 93.9, 13, 25, 31 & 68).

Two of the Hereford examples were found in an early 11th century context but the available evidence suggests that they may have been made at an earlier date.

Their use is uncertain but it is reasonable to suppose that they formed the terminals of a strap or ribbon. It is unlikely that they were book clasps because of their known association with burials and because the common book clasp of this period has a central hole to engage with a peg in the edge of the board (eg the Enver Gospels binding, Meyer, 1929, Fig 5). The position in which two of the clips were found in the Winchester grave may well indicate their use with garters.

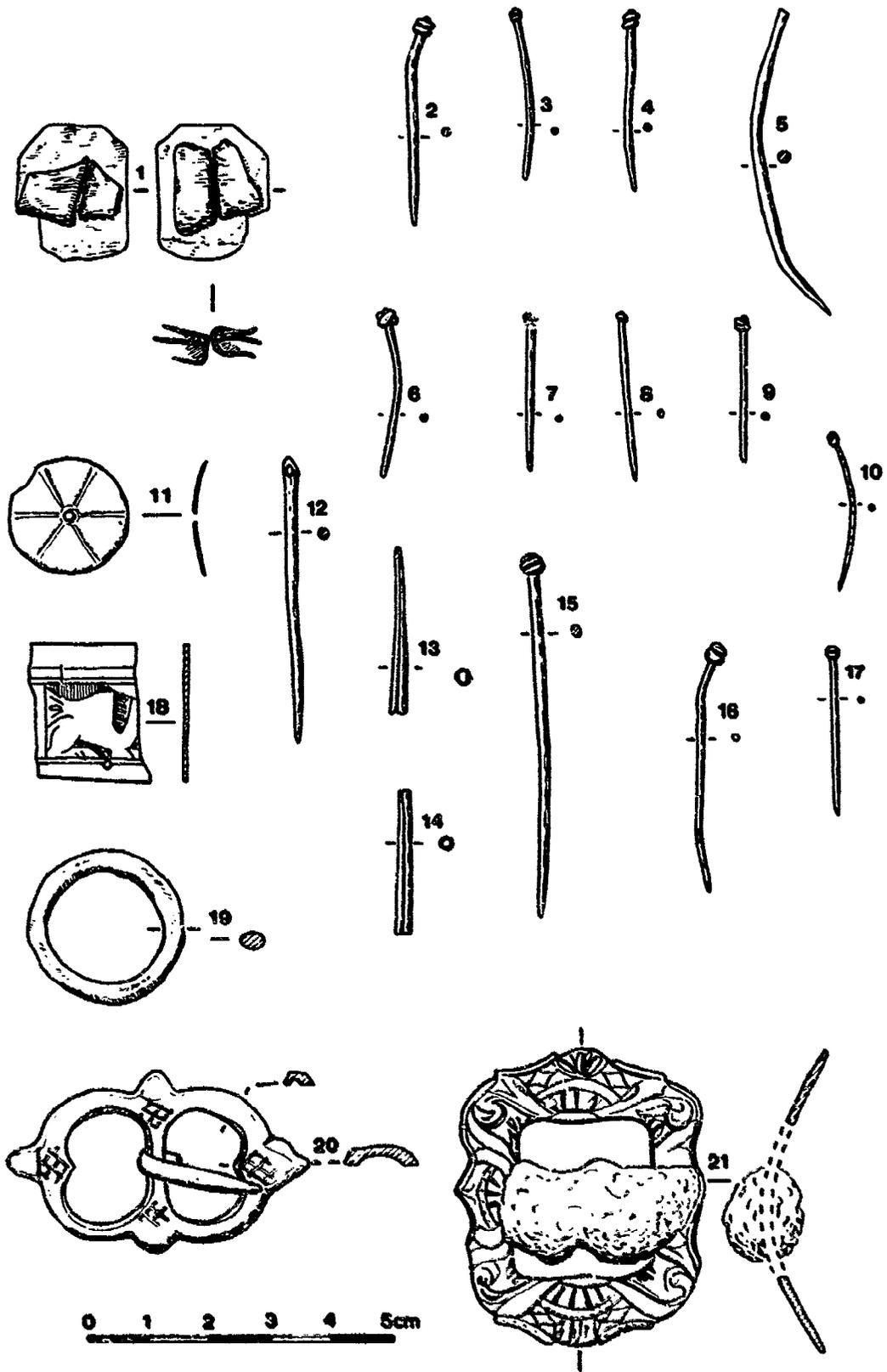


Fig 7 Copper alloy objects (nos 1-19) - 14th to 18th centuries. Pewter objects (nos 20 & 21) - 18th century.

**Catalogue (Fig 7:M4.G8)**

- 7.1** Copper fitting to join together two pieces of leather. Some leather survives within the fitting (Rahtz, 1976, Fig 38.14).  
AD 1300-1400
- Brewery  
Bell mould pit 200:  
Period 4b  
(M3.D12-E2)  
14th century
- 7.2-10** Pins with wire wound heads.  
All are probably AD 1550-1600
- Bewell House  
Pit 240: Period 6  
(M3.A12-A13)  
Mid to late 16th century
- 7.11** A decorative sheet boss or possibly a button. A similar example from Wintringham is dated to cAD 1200 (Beresford, 1977, Fig 48.24).  
Diameter: 19mm  
Probably of late medieval date
- Bewell House  
Posthole 109: Period 6  
(M3.A12-A13)  
Late 14th to 17th century
- 7.12** Needle with hole 1mm in diameter.  
Length: 58mm  
Probably AD 1500-1700
- Bewell House  
Layer 183: Period 6  
(M3.A12-A13)  
Late 14th to 17th century
- 7.13-14** Shoe lace tags consisting of copper alloy plates rolled into a fine cylindrical shape.  
Lengths: 27mm and 24mm  
Probably AD 1550-1600
- Bewell House  
Pit 240: Period 6  
(M3.A12-A13)  
Mid to late 16th century
- 7.15** Large pin with wire wound head.  
Length: 60mm  
AD 1700-1750
- Berrington Street 4  
Trench 699: Period 6  
(M3.E13-F5)  
Early 18th century

- |  |  |
|--|--|
| <p>7.16-17 Two pins with wire wound heads.<br/>Lengths: 52mm and 29mm<br/>AD 1700-1750</p>   | <p>Berrington Street 4<br/>Trench 705: Period 6<br/>(M2.E13-F5)<br/>Early 18th century</p> |
| <p>7.18 A broken plate with an engraved motif which could be the hind quarters of a dog or horse.<br/>Length of fragment: 20mm<br/>Width: 23mm<br/>Probably AD 1550-1600</p> | <p>Bewell House<br/>Pit 240: Period 6<br/>(M3.A12-A13)<br/>Mid to late 16th century</p>    |
| <p>7.19 Slightly flattened copper ring.<br/>Average diameter: 25mm<br/>AD 1520-1570</p>  | <p>Berrington Street 4<br/>Pit 730: Period 6<br/>(M2.E13-F5)<br/>Mid 16th century</p>      |

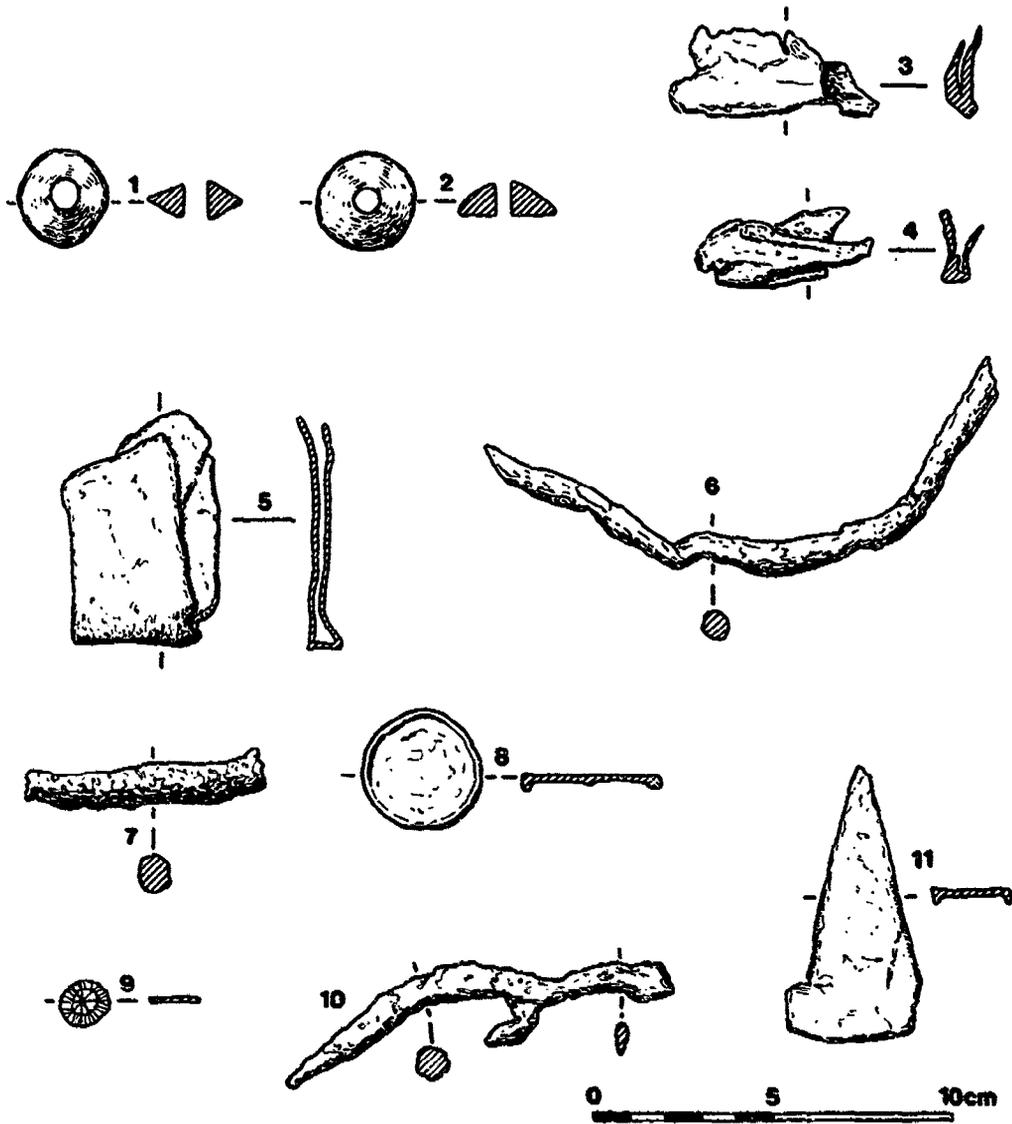
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## PEWTER OBJECTS

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### Catalogue (Fig 7:M4.G8)

- |  |   |
|--|---|
| <p>7.20 Pewter shoe buckle, bent to stand away from a flat surface. It was made in a mould and has cross-hatched decoration on the surface. The underside is channelled to save weight.<br/>AD 1700-1720</p> | <p>Berrington Street 4<br/>Pit 65A: Period 6<br/>(M2.E13-F5)<br/>Early 18th century</p> |
| <p>7.21 Shoe buckle made of pewter but with an iron rust accretion at the centre. It is curved to fit close to the shoe and has an engraved decoration.<br/>AD 1720-1770</p>                                 | <p>Castle Green<br/>Layer 11: Period 3<br/>(Vol 1, 1980, 22)<br/>Mid 18th century</p>   |



**Fig 8 Lead objects - 10th to 15th centuries**

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## LEAD OBJECTS

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### Catalogue (Fig 8:M4.G12)

- 8.1 Possible spindle whorl of biconical shape.  
Diameter: 25mm  
Diameter of hole: 7mm  
This object could be from a later, unidentified context, and the provenance and therefore the date should be regarded as doubtful
- Cantilupe Street  
Rampart 543: Period 1  
(M1.E14-F7)  
Late 9th to early 10th century
- 8.2 Possible spindle whorl; the upper side is semi-circular and the lower side flat.  
Diameter: 27mm  
Diameter of hole: 4mm  
cAD 900-1000
- Berrington Street 4  
Gully 852: Period 2a  
(M2.C5-D4)  
10th century
- 8.3-4 Two pieces of folded lead with no definite shape.  
cAD 900-1000
- Berrington Street 4  
Floor 861: Period 2a  
(M2.C5-D4)  
10th century
- 8.5 Folded piece of lead plate.  
AD 1150-1300
- Castle Green  
Layer 25: Period 2a  
(Vol 1, 1980, 17-21)  
Late 12th to 13th century
- 8.6 Irregular lead bar, approximately circular in cross-section.  
Length: 175mm  
AD 1100-1300
- Castle Green  
Layer 14: Period 1c  
(Vol 1, 1980, 17)  
12th century

- 8.7 Irregular lead bar, approximately circular in cross-section.  
Length: 67mm  
AD 1100-1200  
Castle Green  
Layer 14: Period 1c  
(Vol 1, 1980, 17)  
12th century
- 8.8 Lead disc, thicker at the edges.  
Diameter: 34mm  
(Platt, 1975; Fig 246. 1899 dated to AD 1300-1350)  
Possibly AD 1300-1400  
Bewell House  
Layer 183: Period 6  
(M2.A12-A13)  
Late 14th to 17th century
- 8.9 A lead 'counter' which is apparently a 'one-off' job as it was not struck but was decorated with incised lines. The lines do not seem to be actual letters but adumbrate a 'legend' around the edge of the disc. It is unlike a similar token from Winchester which had been cast. It was possibly used as a gaming counter (Note by M M Archibald of the British Museum)  
Diameter: 14mm  
The counter is possibly earlier than the context in which it was found  
Berrington Street 4  
Floor 675: Period 6  
(M2.E13-F5)  
18th century
- 8.10 Rough lead bar.  
Length of fragment: 115mm  
Date uncertain  
Castle Green  
Layer 9: Period 2c  
(Vol 1, 1980, 21)  
Mid 12th to 15th century
- 8.11 Lead plate folded at the edges into a triangular shape.  
AD 1300-1500  
Berrington Street 1  
Pit 11: Period 5  
(M2.E7-B13)  
14th to 15th century

## STONE OBJECTS

There have been relatively few stone objects found during the excavations in Hereford, reflecting the scarcity of this material as a building medium. Much of the stone found in the pre-Conquest levels is apparently re-used Roman material. This was especially obvious at the Victoria Street site where the majority of the stone used in the period 1 grain-drying ovens was of Roman origin, as was some of the stone used in the period 5b defensive wall. Although much of the stone used in the same wall at the Cantilupe Street site was rough and uneven some of the blocks, particularly those in the lower courses, had been previously shaped and were well worn and could also have been of Roman origin.

Fragments of several quernstones were found, all of conglomerate sandstone. A carved stone found many years ago in the castle ditch and illustrated in this report was of similar material. Amongst the small finds, whetstones and spindle whorls were found in contexts from the 10th to the 15th centuries. There was little apparent variation in their shape or size throughout the period.

A pit at the Brewery site in the NW corner of the walled town contained parts of two 15th century stone moulds possibly indicating industrial activity just within the defences.

A selection of flint objects found during excavations in the city is also illustrated.

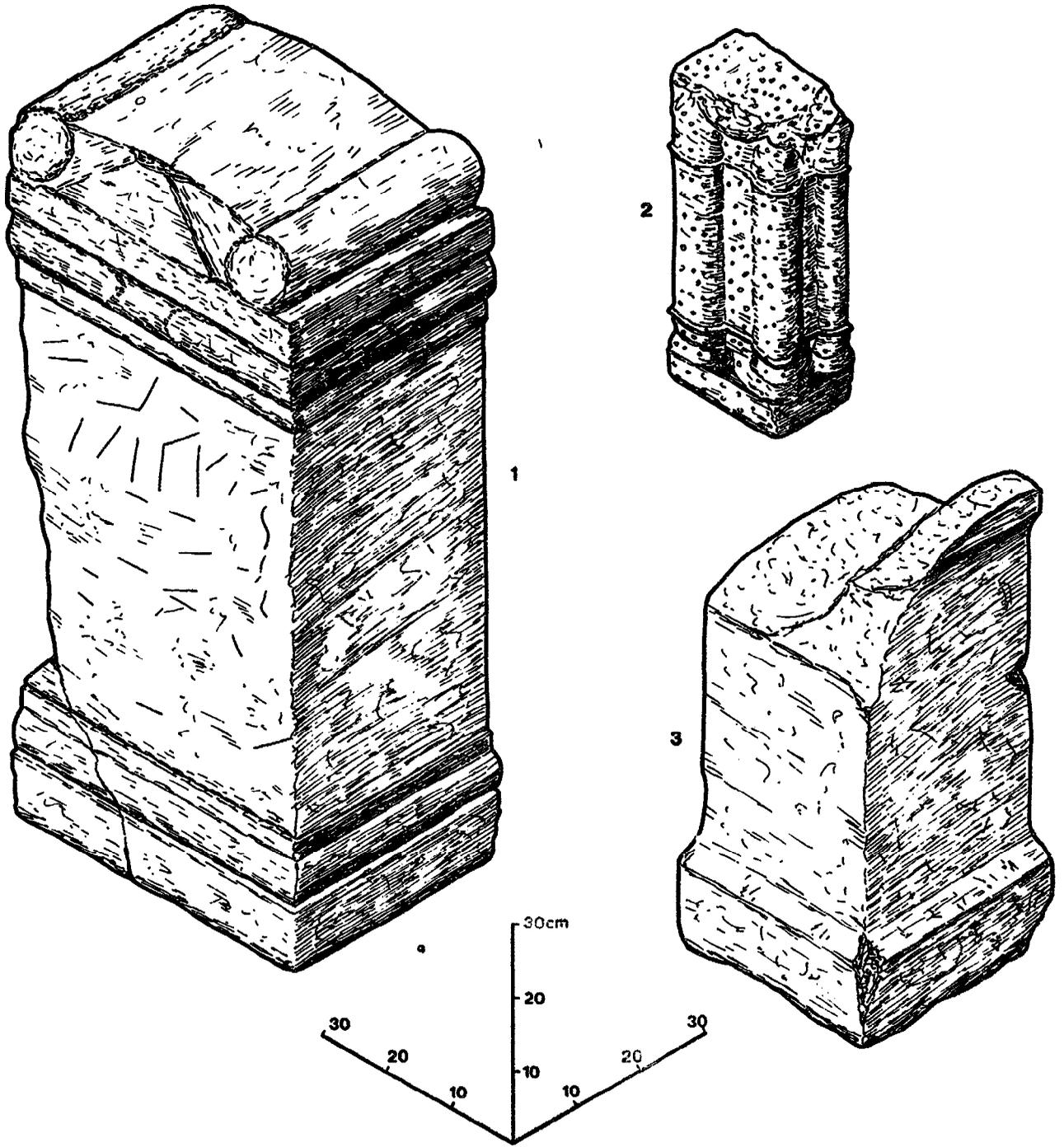


Fig 9 Large worked stone (nos 1 & 3 - Roman; no 2 - probably 13th century)

## LARGE WORKED STONE

Two carved stones found many years ago in Hereford, but poorly recorded, are included in this report together with two altars from Victoria Street.

### Catalogue (Fig 9:M5.A3)

- 9.1 Altar Found in 1821 near  
St John Street
- The stone is chiselled at the top, in front and at the sides, but is rough at the back. When found it apparently seems to have borne part of an inscription, but this is now almost completely defaced. The conjectural transcription was
- DEO  
MIN  
IS  
IT
- (Fowler, 1879, 165; Bull, 1882, 247; VCH, 1908, 193)
- Sandstone  
Roman
- 9.2 Carved stone Found in the mid 19th  
century in Castle Pool
- This decorated piece of stone has four columns in strong relief with the remains of a floriated wreath at the top. The stone was originally thought to be Roman but has distinct medieval characteristics (Fowler, 1879, 165; Bull, 1882, 247; VCH, 1908, 193).
- Conglomerate sandstone  
13th century

### 9.3 Altar

This stone was re-used as part of one of the grain-drying ovens. It has a carved base and is broken towards the top. The stone is well worn and has no indication of any inscription.

Sandstone

Roman

Victoria Street

Oven 89: Period 1  
(M1.B9-C2)

Mid 7th to 8th century

### Unillustrated Altar

A second altar was found in two pieces together with no 3 above. This has been lost and cannot be illustrated. The approximate shape and proportions are shown on the plan of the oven (Vol 2, 1982, Fig 16 - where it is shown as altar 1) and on the photograph (Vol 2, 1982, Fig 19).

Roman

Victoria Street

Oven 89: Period 1  
(M1.B9-C2)

Mid 7th to 8th century

## QUERNSTONES

### Catalogue (Fig 10:M5.A5)

10.1 One quarter of an upper stone with a tooled surface.

Diameter: 410mm

Thickness at centre: 85mm

Conglomerate sandstone

Probably Roman but the type of dressing continued in use until the 18th century

Victoria Street

Wall 2: Period 5b  
(M1.D6-D10)

Early to mid 10th century

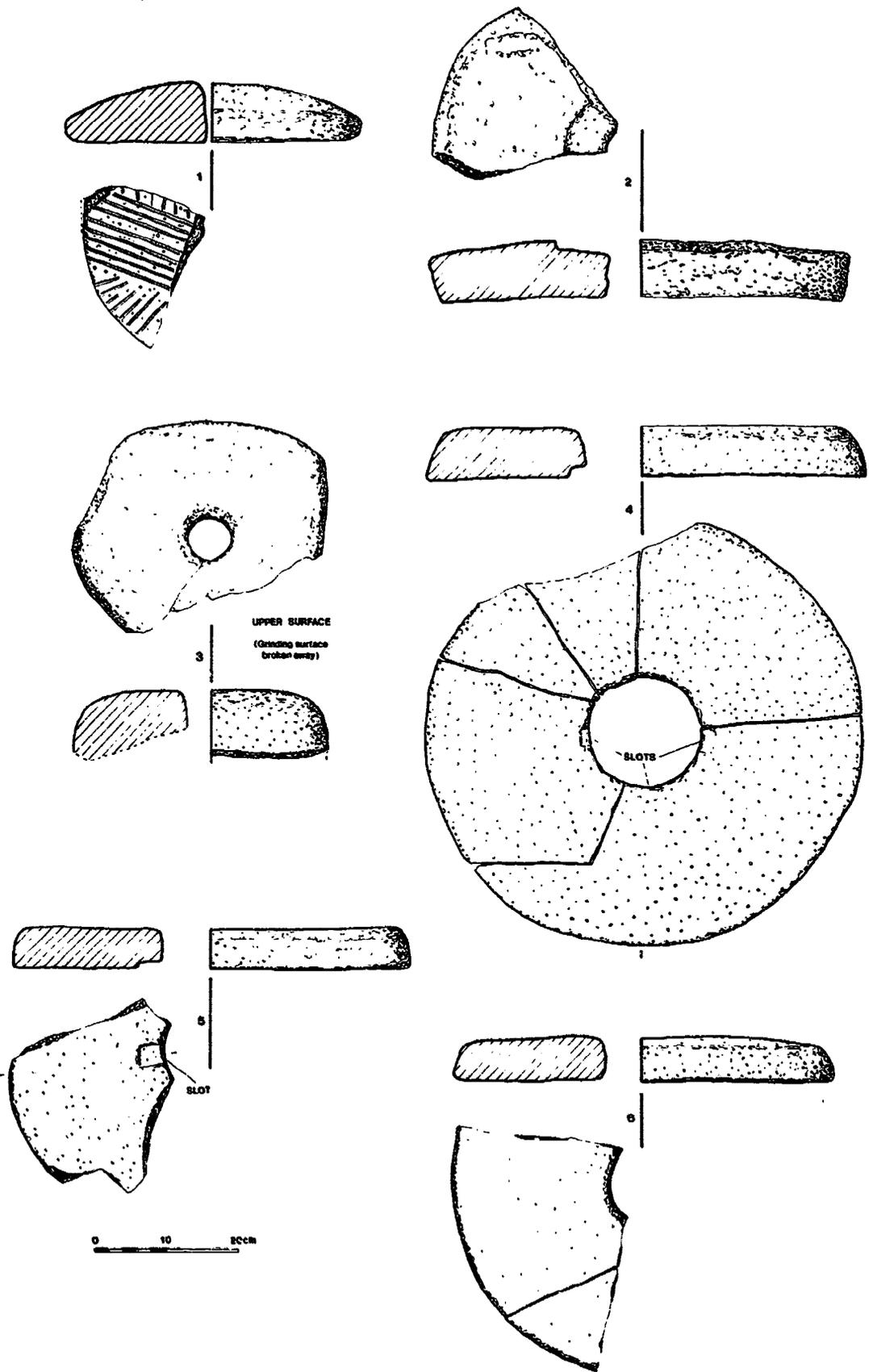


Fig 10 Quernstones - Roman to 13th century

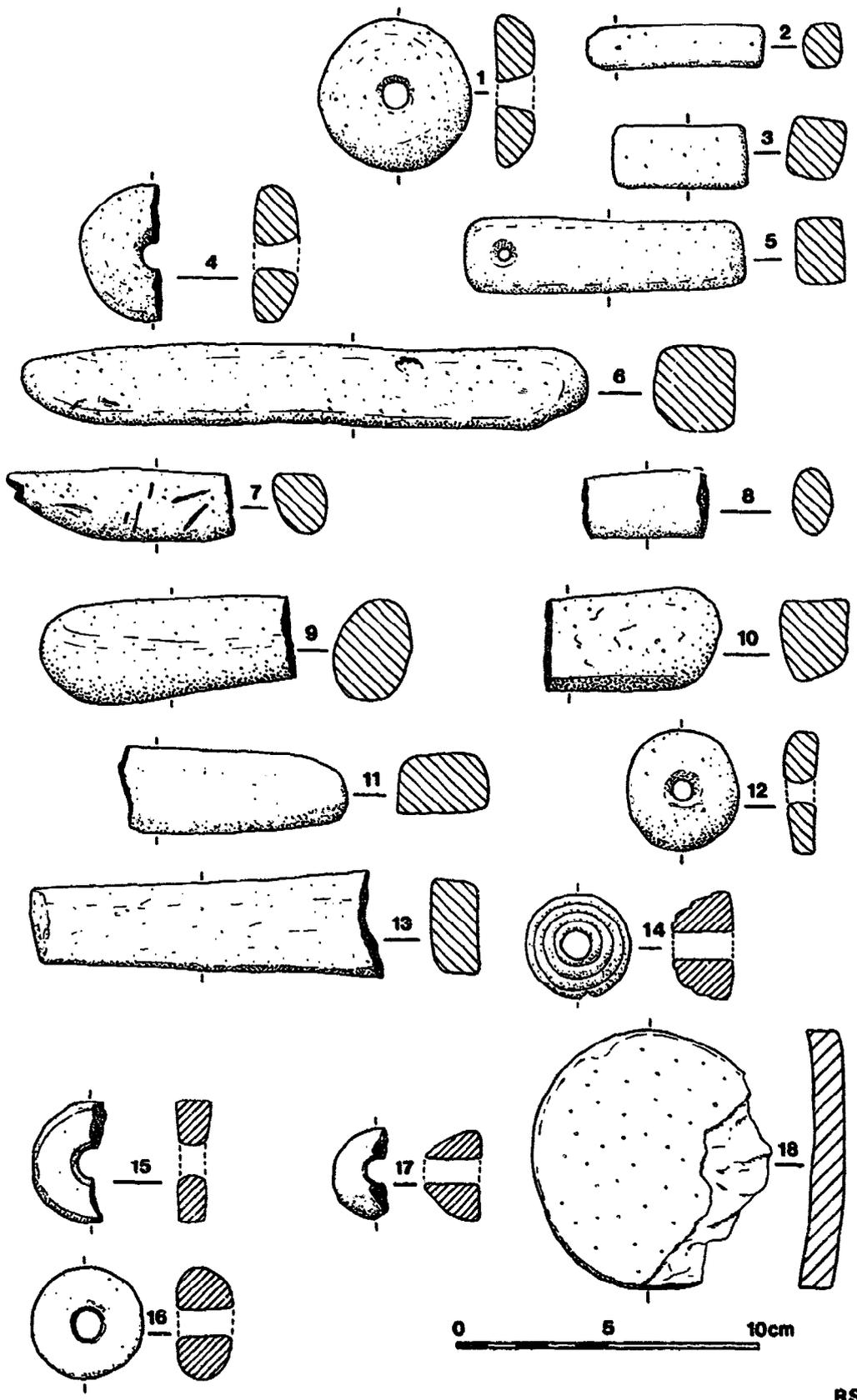
- 10.2 One quarter of a very abraded quern which could be part of either an upper or a lower stone. Although the surfaces are completely worn, the association with 1 above suggests a Roman origin.  
Diameter: 585mm  
Thickness: 80mm  
Micaceous sandstone
- Victoria Street  
Wall 2: Period 5b  
(M1.D6-D10)  
Early to mid 10th century
- 10.3 Three quarters of an irregular upper stone with the grinding surface completely broken away.  
Diameter: 360mm  
Thickness greater than 90mm  
Conglomerate sandstone  
Possibly mid-Saxon
- Friars Gate  
Layer 1  
(M3.F4-F8)  
Late 8th to 9th century
- 10.4 A nearly complete upper stone, broken in five pieces. All the surfaces are pock-marked but show little sign of wear. Two slots adjoin the centre hole in the working surface. The size of this stone suggests that it came from an animal or water-powered mill.  
Diameter: 610mm  
Thickness: 70mm  
Conglomerate sandstone  
Pre-AD 1250
- Bewell House  
F406 in oven 304:  
Period 4  
(M2.G9-M3.A8)  
Mid 13th century

- |   |  |
|---|--|
| <p>10.5 A fragment of an upper stone which has a slot and similar pock-marking to 4 above. It shows some signs of wear and was probably from a powered mill.<br/>Diameter: 550mm<br/>Thickness: 55mm<br/>Conglomerate sandstone<br/>Pre-AD 1250</p>       | <p>Bewell House<br/>F324 in building 443:<br/>Period 4<br/>(M2.G9-M3.A8)<br/>Mid 13th century</p>    |
| <p>10.6 Two fragments which are probably of an upper stone which is well pock-marked with a smooth working surface. It was probably from a powered mill.<br/>Diameter: 530mm<br/>Thickness: 60mm<br/>Conglomerate sandstone<br/>Possibly AD 1200-1300</p> | <p>Bewell House (Trench B)<br/>Layer 258?: Period 5<br/>(M3.A8-A11)<br/>Mid 13th to 14th century</p> |

## **SMALL STONE OBJECTS**

### Catalogue (Fig 11:M5.A9)

- |   |   |
|---|---|
| <p>11.1 A complete spindle whorl made of fine sandstone.<br/>Diameter: 47mm<br/>Diameter of hole: 8mm<br/>Thickness: 12mm<br/>cAD 750-900</p> | <p>Berrington Street 3<br/>Layer 108: Period 1<br/>(M2.A6-C5)<br/>Late 8th to 9th century</p> |
| <p>11.2 A small whetstone with a rounded cross-section<br/>Length: 57mm<br/>cAD 1100-1200</p>   | <p>Brewery<br/>Pit 38: Period 2b<br/>(M3.C10-D3)<br/>12th century</p>                         |



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Fig 11 Small stone objects (nos 1-17) - 8th to 15th centuries: Pottery disc (no 18) - 16th century

M5.A9

- 11.3 A small rectangular stone with a squared cross-section which may have been used as a games counter. Length: 43mm  
AD 900-1000  
Berrington Street 2  
Layer 107: Period 2a  
(M2.C5-D8)  
10th century
- 11.4 Half of a spindle whorl made of fine sandstone. Diameter: 45mm  
Diameter of hole: 8mm  
Thickness: 14mm  
AD 900-1000  
Berrington Street 2  
Layer 107: Period 2a  
(M2.C5-D8)  
10th century
- 11.5 A smooth stone of squared cross-section with a small hole bored in one end. This could have been a small loom weight or a whetstone with a suspension hole (Dulley, 1967, Fig 65.14 & 15; Bridgewater, 1970, Fig 16.54 & 55, both in later contexts). Length: 93mm  
Diameter of hole: 4mm  
AD 900-1000  
Berrington Street 2  
Layer 112: Period 2a  
(M2.C5-D8)  
10th century
- 11.6 A large whetstone showing signs of wear. Length: 184mm  
AD 1150-1250  
Berrington Street 1  
Layer 56: Period 3  
(M2.D10-E2)  
Late 12th to early 13th century
- 11.7 A stone broken at both ends but with several knife cuts on the surface. It may have been used as a whetstone. Length of fragment: 50mm  
AD 1150-1250  
Brewery  
Ditch 11: Period 2c  
(M3.D3-F8)  
Late 12th to early 13th century

- 11.8 A fragment of a small whetstone, broken at both ends.  
 Length of fragment: 40mm  
 AD 1150-1250  
 Brewery  
 Layer 15: Period 2c  
 (M3.D3-D8)  
 Late 12th to early 13th century
- 11.9 One end of a possible whetstone which is shaped as though for sharpening a sickle and has an oval cross-section.  
 Length of fragment: 81mm  
 AD 1200-1250  
 Bewell House  
 Post-pit 245: Period 3  
 (M2.G2-G9)  
 Early 13th century
- 11.10 One end of a possible whetstone with a rectangular cross-section.  
 Length of fragment: 57mm  
 AD 1200-1250  
 Bewell House  
 Cesspit 384: Period 3  
 (M2.G2-G9)  
 Early 13th century
- 11.11 One end of a small whetstone of rectangular cross-section.  
 Length of fragment: 74mm  
 AD 1200-1250  
 Bewell House  
 Post-pit 364: Period 3  
 (M2.G2-G9)  
 Early 13th century
- 11.12 A stone spindle whorl which is slightly oval in shape.  
 (Fig 11.16 is from the same context)  
 Average diameter: 38mm  
 Diameter of hole: 6mm  
 Thickness: 10mm  
 AD 1250-1300  
 Berrington Street 4  
 Cesspit 739: Period 4  
 (M2.E2-E7)  
 Late 13th century

- 11.13 The central part of a well worn whetstone of rectangular cross-section, broken at both ends. Length of fragment: 110mm AD 1300-1500  
Berrington Street 4  
Layer 720: Period 5  
(M2.E7-E13)  
14th to 15th century
- 11.14 A complete spindle whorl made of fine-grained pure limestone. The central hole was bored using a cylindrical drill and the three concentric grooves on the whorl appear to have been lathe-turned and are V-sectioned (M5.A14)  
Diameter: 33mm  
Diameter of hole: 9mm  
Thickness: 20mm  
Colour: greyish-brown (2.5Y 5/2)  
(Munsell, 1958)  
Weight: 22.39 gm  
AD 1300-1500  
Berrington Street 4  
Layer 720: Period 5  
(M2.E7-E13)  
14th to 15th century
- 11.15 Half of a spindle whorl formed from an uneven slab of siltstone. The central hole has been worked from both sides and the circumference has been roughly scraped to shape.  
Diameter: c 40mm  
Diameter of hole: c 10mm  
Thickness: Between 9 and 11mm  
Colour: Pale brown (10YR 6/3)  
(Munsell, 1958)  
AD 900-1000  
Berrington Street 2  
Layer 112: Period 2a  
(M2.C5-D8)  
10th century

11.16 A complete spindle whorl made Berrington Street 2  
from fine-grained pure limestone. Cesspit 739: Period 4  
The central hole is very slightly (M2.E2-E7)  
tapered and the whorl seems to Late 13th century  
have been formed by lathe-turning.  
In places the surface has a slight  
polish (Fig 11.12 is from the  
same context)(M5.A14)  
Diameter: 36mm  
Diameter of hole: 9mm  
Thickness: 11mm  
Colour: Greyish-brown (2.5Y 5/2)  
(Munsell, 1958)  
Weight: 29.33gm  
AD 1250-1300

11.17 Half of a spindle whorl of conical Berrington Street 4  
shape made from fine-grained pure Layer 817: Period 4  
limestone. It is probably lathe- (M2.E2-E7)  
turned with the central hole made Late 13th century  
using a cylindrical drill. The  
whorl, which is broken around a  
large ammonite, was thin-sectioned  
and contains scattered microfossils  
composed of calcite and an opaque  
material which may be iron ore  
(M5.A14)  
Diameter: 30mm  
Diameter of hole: 8mm  
Maximum thickness: 18mm  
AD 1250-1300

- 11.18 Circular disc, apparently made from the base of a glazed bowl of fabric B4 (M6.E1) Berrington Street 2  
Unstratified
- The sliding characteristics of this piece would have made it suitable for use in various games.
- Diameter: c 85mm  
AD 1500-1600

THE SPINDLE WHORLS FROM BERRINGTON STREET 4

by Alan G Vince

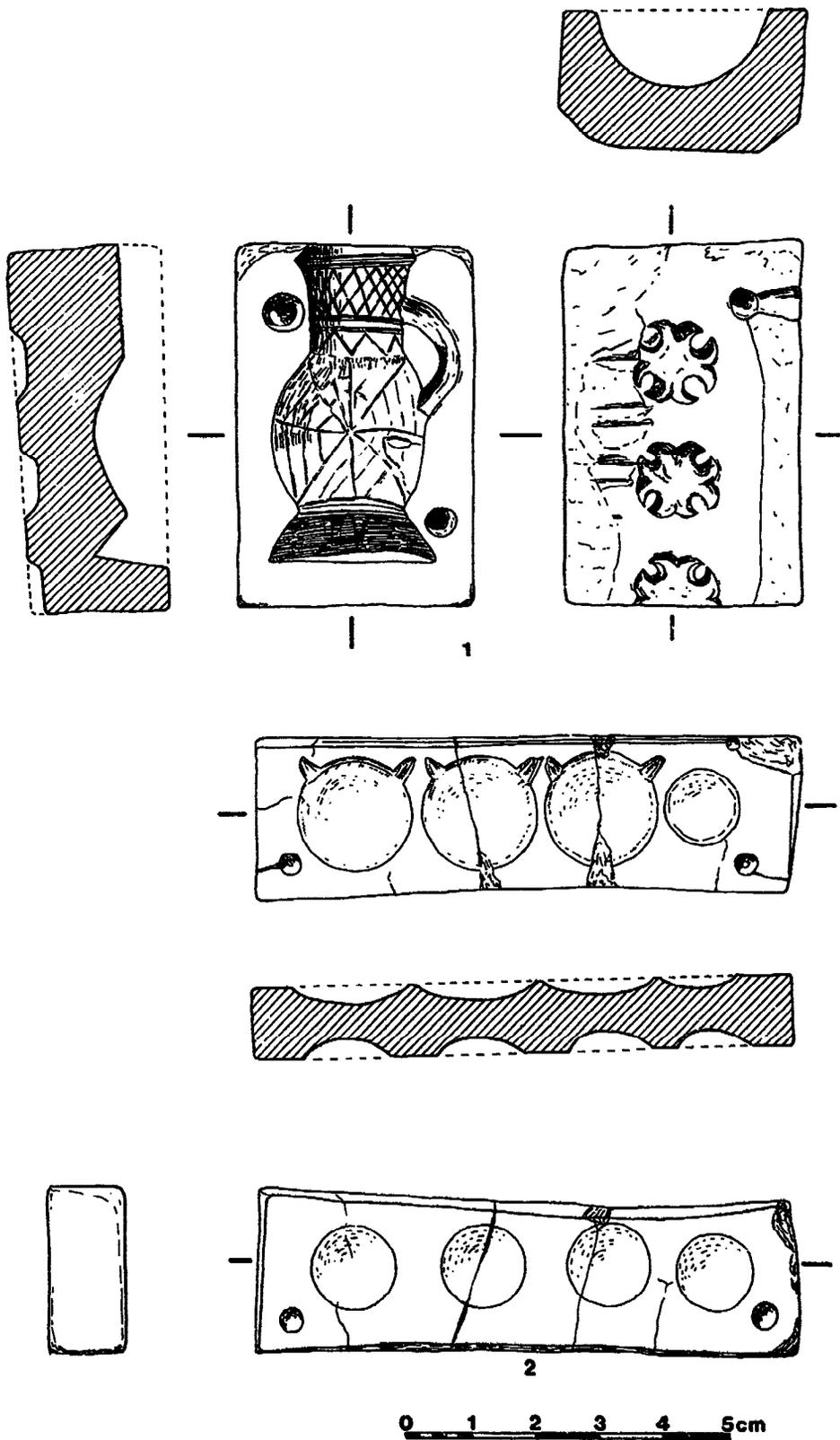
(Fig 11.14, 16 & 17)

The three whorls from Berrington Street site 4 are all in late medieval contexts and are closely related in form, raw material and method of manufacture. The thin-sectioned example, Fig 11.17, is made from a Jurassic rock, probably the White Lias which outcrops in Somerset and Avon, but no closer to Hereford. Two similar spindle whorls, both with lathe-incised decoration similar to Fig 11.14 from Barrow Mead, Bath, were assigned to either the Carboniferous 'Chinastone' or the calcite-mudstones of the Lias (Woodhouse, 1976, 32-3 and Fig 11.3 and 4) and spindle whorls of this form and type have been found at Bristol (Fowler, personal communication). It is probable that, as with stone mortars, spindle whorls were traded as a sideline of the building stone industry. White and Blue Lias is commonly used for decorative features in the churches and monastic houses of Avon.

**MOULDS**

Catalogue (Fig 12:M 5.B1)

- 12.1 A half-mould originally used for buttons or studs and eventually for a small jug. Grey limestone (Figs 13 and 14 and M 5.B2) Probably AD 1400-1500 Brewery  
Pit 88: Period 4c  
(M3.D13-E2)  
Late 15th century



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Fig 12 Stone moulds - 15th century

M5.B1

12.2	A half-mould used for buttons or studs. ( <u>Fig 15</u> and below)	Brewery
	White limestone	Pit 88: Period 4c (M3.D13-E2)
	Probably AD 1400-1500	Late 15th century

THE MOULDS    Fig 12:M5.B1 and Figs 13-15

The two moulds were found in the same pit as an unfinished, castellated, bone carving (Fig 24.20 and Fig 27). They are both made from fine limestone blocks.

The original surface of Fig 12.1 has the remains of three ornate stud or button moulds and a registration hole (Fig 13). The studs would have been in the form of ornate crosses, 13mm from arm to arm. The depressions are 2mm deep. One of the stud moulds was cut in half and the other two and the registration hole roughly trimmed, presumably when the mould was reused. The reverse side has a deep mould for one half of what is presumably a small jug, 51mm in height and 25mm diameter at the girth (Fig 14). There are two registration holes. The mould is decorated with incised lines which would have given a raised design on the jug. There is a deeply incised band of lattice work on the neck and an eight-pointed star on the body. Further incised lines give a zig-zag pattern on the neck, diagonal hatching on the body and a band of four vertical lines on the base. The jug would have been similar in size to a present-day spirit measure.

The second mould, in several pieces, was used for manufacturing buttons or studs. One surface has three depressions, 18mm in diameter and 3mm deep, each with projecting lugs, and one smaller depression 11mm in diameter and 2mm deep. There are two registration holes (Fig 15). The other surface, also with two registration holes, has four small depressions between 12 and 13mm in diameter and 2.5 to 3mm deep.

## FLINT OBJECTS

Flint flakes and worked flint tools were found on most of the excavated sites in Hereford. Nearly three-quarters of them came from the Victoria Street and Berrington Street excavations with few from the relatively large areas excavated in the north-western corner of the town.

SITE	ILLUSTRATED	UNILLUSTRATED	TOTAL
Castle Green	-	1	1
Victoria Street	6	4	10
Cantilupe Street	1	1	2
Berrington Street 2	1	2	3
Berrington Street 4	3	3	6
Bewell House	1	1	2
Brewery	-	1	1
Liberal Club	-	1	1
TOTALS	12	14	26

The flints were not only in the primary levels on the sites but were distributed amongst the various occupation layers with a majority in the 10th to 11th century levels.

OCCUPATION PERIOD	FLINTS FOUND
7th - 9th centuries	3
10th - 11th centuries	13
12th - 14th centuries	7
Unstratified	3

The suggested indentifications are by R Pye of the Radnorshire Historical Society who has written several articles on local flints. I am also grateful to A Saville of the Lithic Studies Society and Cheltenham Art Gallery and Museum who provided useful comments.

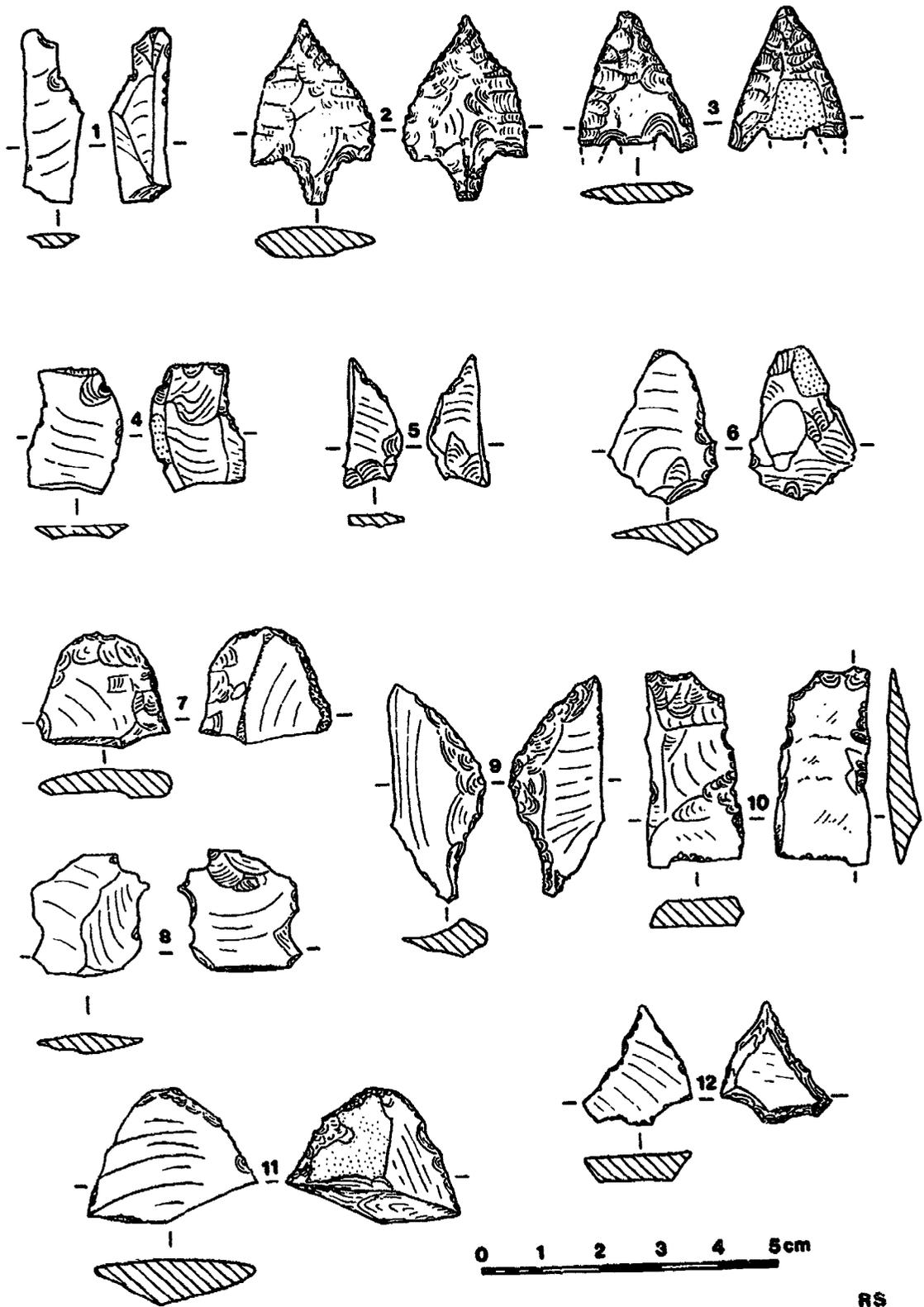


Fig 16 Flint objects

M5.B5

Catalogue (Fig 16:M5.B5)

- |      |  |   |
|------|--|---|
| 16.1 | Blade<br>Probably Neolithic  | Victoria Street<br>Unstratified   |
| 16.2 | An unusual type of tanged arrow-<br>head with the barbs practically<br>absent.<br>Bronze Age | Victoria Street<br>Layer 97: Period 1<br>(M1.B9-C2)<br>Mid 7th to 8th century                 |
| 16.3 | A barbed and tanged arrowhead<br>with some cortex showing.<br>Bronze Age                     | Cantilupe Street<br>Rampart 599: Period 1<br>(M1.E14-F7)<br>Late 9th to early 10th<br>century |
| 16.4 | A broken blade.<br>Probably late Neolithic   | Bewell House<br>Layer 134: Period 4<br>(M2.G9-M3.A8)<br>Mid 13th century                      |
| 16.5 | A broken blade with a steep<br>retouch.<br>Probably Neolithic                                | Berrington Street 4<br>Cesspit 743: Period 4<br>(M2.E2-E7)<br>Late 13th century               |
| 16.6 | A retouched flake.<br>Probably of late Neolithic period                                      | Berrington Street 4<br>Layer 844: Period 2b<br>(M2.C10-D4)<br>Early to mid 11th century       |
| 16.7 | A broken, retouched scraper,<br>steeply worked.<br>Probably late Neolithic                   | Victoria Street<br>Layer 88: Period 5c<br>(M1.D6-D10)<br>Mid 10th to 11th century             |

- |       |   |  |
|-------|---|--|
| 16.8  | Waste flake, which may have been utilised as a scraper.<br>Probably Neolithic   | Victoria Street<br>Layer 88: Period 5c<br>(M1.D6-D10)<br>Mid 10th to 11th century        |
| 16.9  | An elongated <u>petit tranchet</u> derivative arrowhead<br>Probably Type D (Clark, 1934).<br>Neolithic  | Berrington Street 2<br>Unstratified  |
| 16.10 | A <u>tranchet</u> arrowhead of type A (Clark, 1934) but longer than one would expect.<br>Could be Mesolithic                                    | Victoria Street<br>Layer 22: Period 5c<br>(M2.D6-D10)<br>Mid 10th to 11th century        |
| 16.11 | The distal segment of an end of a blade scraper.<br>Probably Bronze Age   | Victoria Street<br>Layer 37: Period 1<br>(M1.B9-C2)<br>Mid 7th to 8th century            |
| 16.12 | A worked implement of uncertain use. The working cuts through a Cotswold type patination to the fresh flint beneath.<br>Probably late Neolithic | Berrington Street 4,<br>Layer 841: Period 2b<br>(M2.C10-D4)<br>Early to mid 11th century |

The unillustrated flints (numbers 13 to 26) are mostly retouched flakes of indeterminate date, but include three further scrapers, possibly of late Neolithic date (numbers 20, 21 and 25) and a blade core of possibly Mesolithic date retouched through its patina to form a scraper (no 18).

**Catalogue (not illustrated)**

- |    |  |   |
|----|--|---|
| 13 | A worked flake with slight patination.<br>Indeterminate date   | Victoria Street<br>Layer 88: Period 5c<br>(M1.D6-D10)<br>Mid 10th to 11th century   |
| 14 | A waste flake with some secondary working.<br>Indeterminate date   | Victoria Street<br>Layer 80: Period 5c<br>(M1.D6-D10)<br>Mid 10th to 11th century   |
| 15 | A flake with signs of working.<br>Indeterminate date   | Victoria Street<br>Unstratified   |
| 16 | A waste flake.<br>Possibly late Neolithic  | Victoria Street<br>Layer 88: Period 5c<br>(M1.D6-D10)<br>Mid 10th to 11th century   |
| 17 | A flake with some secondary working.<br>Indeterminate date   | Brewery<br>Layer 7: Period 2c<br>(M3.D3-D8)<br>Late 11th to early<br>12th century   |
| 18 | A patinated blade core.<br>Possibly Mesolithic with a later retouch through patination to form a scraper | Liberal Club<br>Layer 13<br>(M3.F9-F11)   |
| 19 | Unworked piece of flint.   | Cantilupe Street<br>Layer 566: Period 3a<br>(M1.G3-G6)<br>Late 10th to 11th century |

- |    |   |   |
|----|---|---|
| 20 | Utilised flake from a flint nodule with a thin cortex. Possibly late Neolithic  | Castle Green<br>Layer 48: Period 1a<br>(Vol 1, 1980, 12-13)<br>8th to mid 10th century  |
| 21 | Scraper with a hinge fracture. Late Neolithic                                   | Berrington Street 2<br>Layer 111: Period 1<br>(M2.A6-C5)<br>Late 8th to 9th century     |
| 22 | A thickly patinated flake, fractured in antiquity.                              | Berrington Street 2<br>Layer 107: Period 2a<br>(M2.C5-D8)<br>10th century               |
| 23 | A poor quality mottled brown flint with some cortex and patination on one angle | Berrington Street 4<br>Layer 817: Period 4<br>(M2.E2-E7)<br>Late 13th century           |
| 24 | A small scraper apparently utilised as a strike-light                           | Berrington Street 4<br>Layer 720: Period 5<br>(M2.D7-E13)<br>14th to 15th century       |
| 25 | A broken piece of scraper. Late Neolithic                                       | Berrington Street 4<br>Layer 844: Period 2b<br>(M2.C10-D8)<br>Early to mid 11th century |
| 26 | Slightly worked flint flake. Indeterminate date                                 | Bewell House<br>Layer 206: Period 5<br>(M3.A8-A11)<br>Late 13th to mid 14th century     |

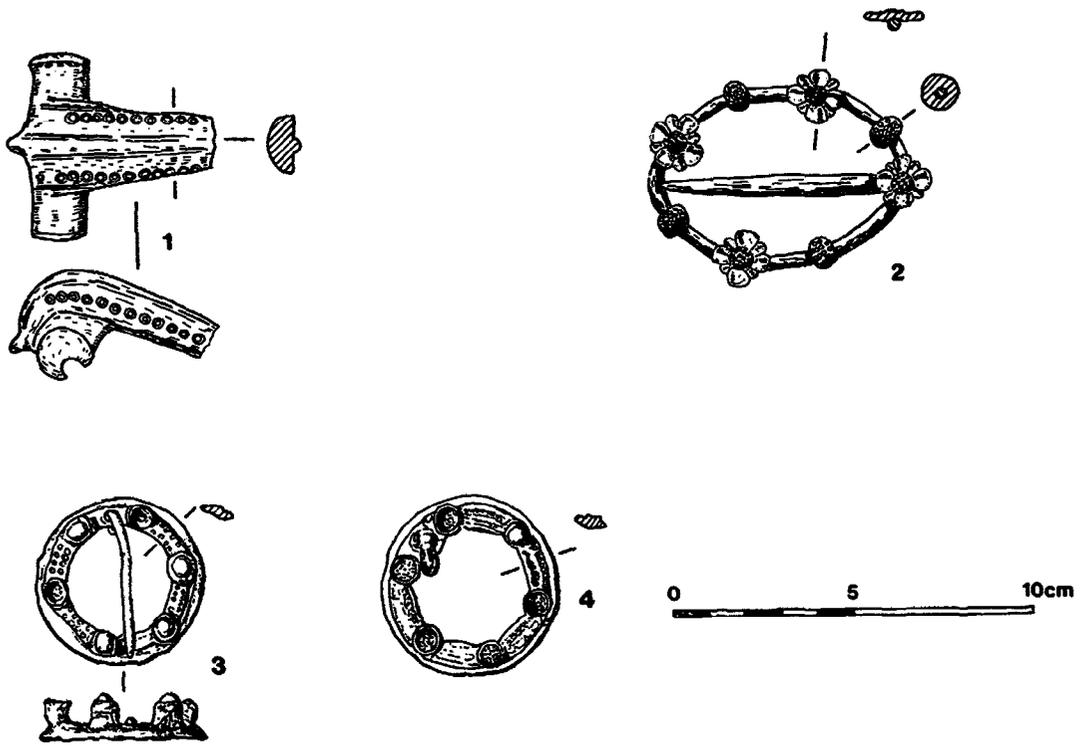


Fig 17 Brooches (no 1 - Roman; nos 2 & 3 - late 13th to 14th centuries; no 4 - comparative brooch from British Museum collection)

# JEWELLERY

## BROOCHES

A fragment of a Roman brooch and two medieval brooches were found during the excavations at Berrington Street and Bewell House.

### Catalogue (Fig 17:M5.C1)

- 17.1 A broken piece of fibula. The bow, which is broken, has a keel along the fore edge with punched decoration on either side. The heavy heel contains the remains of a spring for the pin. The brooch is of Collingwood's Group H which comprises a large family of brooches extending through the first century and the first half of the second and belongs in the main to southern Britain (Collingwood, 1930, 247).  
Roman
- Bewell House  
Layer 299 in oven 304:  
Period 4  
(M2.G9-M3.A8)  
Mid 13th century
- 17.2 A silver brooch with knops and rosettes.  
(Fig 18 and M5.C3)  
cAD 1270-1330
- Berrington Street 3  
Layer 505: Period 5  
(M2.E7-E13)  
14th to 15th century
- 17.3 A copper alloy brooch with glass settings in collets.  
(Fig 19 and M5.C4)  
cAD 1250-1350
- Bewell House  
Layer 258: Period 5  
(M3.A8-A11)  
Late 13th to mid 14th century

17.4 Comparison brooch  
(see following note)

British Museum Collection  
OA 1189

THE MEDIEVAL BROOCHES by J Cherry

The Silver Brooch (Figs 17.2 and 18)

This brooch is now in an oval shape (35mm long and 24mm wide) and is made of circular-sectioned silver wire. It has four knops each decorated with punched circles. Between the four knops there are four square rosettes each with four large and small petals and with punched circles in the centre. The pin is circular in section and the end of the pin is hidden by one of the rosettes which is attached to the pin instead of the ring. All the knops and rosettes are gilded and they are all worn suggesting that the brooch was in use for a long period.

Silver brooches of wire decorated with knops and rosettes were common in northern England and southern Scotland at the end of the 13th and beginning of the 14th century and the main examples of the type are in the National Museum of Antiquities at Edinburgh. At Langhope (Roxburghshire) an example of this type was found in 1882 with a hoard containing coins of Edward I to Edward III (Thompson, 1956, no 229 and pl XVI) and at Canonbie (Dumfriesshire) two examples were found in 1864 with coins deposited in c 1292-6 (op cit no 70 and pl IX; NMA, 1892, 358). Other fine examples of the type have been found near Norham Castle (Northumberland) (Evans, 1970, pl 15c) and at Middlebie Church (Dumfriesshire). J G Callander discussed these brooches in his survey of 14th century brooches and other ornaments (Callander, 1923). His third type of silver ring brooch consisted of a ring of silver wire with various types of applied decoration. The addition of knops and rosettes forms the first group (a) whilst the second and third groups are distinguished by lozenge shaped (b) and rounded (c) plates attached to the ring. A recent example has been found at Perth (info N Bogdan).

The Hereford example has a rosette attached to the head of the pin and this feature also occurs on the brooches from Langhope and Middelbie. The brooches from Canonbie and Norham have the pin hinged in the centre of a rosette.

Late 13th century brooches formed of silver wire are not so common in England. The two brooches found in Coventry in 1937 with a coin hoard deposited in c AD 1298 are clearly related to Callander's fourth type (group a) which consists of silver wire brooches decorated with niello and punching (Thompson, 1956, no 103; BMQ, 1937, 167 and pl xlix). The importance of the find of this brooch in Hereford is that it appears to be the first occurrence of this type of brooch with applied knobs and rosettes in southern England.

#### The Copper Alloy Brooch (Figs 17.3 and 19)

Copper alloy circular brooches made to close the dress are often decorated with glass in raised settings (collets) to imitate gold brooches with precious or semi-precious stones set in the same way. Such gold examples are well known though copper alloy examples are less common.

The copper alloy brooch from Hereford has an external diameter of 22mm and an internal one of 15mm. It is set with six collets (height 5.5mm) three of which retain blue glass settings and one which retains a green glass setting. In the flat spaces between the collets, except for the spaces where the pin is attached, there are two lines of four punched circles.

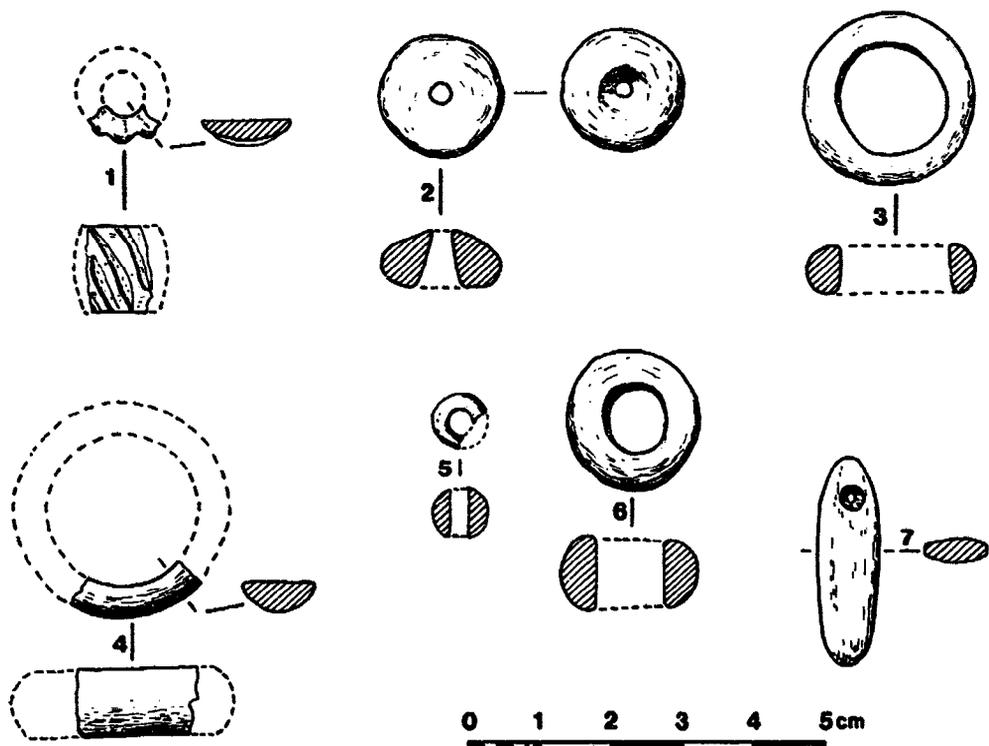
There are at least three comparable examples of copper alloy brooches with six collets. There are two published examples; from Little Avebury in Wiltshire and from Noble Street in London (LMC, 1940, 276). Both have raised bosses between the collets whereas the Hereford brooch is simply decorated with punched circles. An unprovenanced brooch in the British Museum (Fig 17.4) is decorated

in a similar way with two rows of punched circles between the collets. This brooch also has six collets (height 5mm), three of which are empty, two filled with a white plaster, and the sixth filled with a green glass setting. The external diameter is 25mm and the internal diameter is 16mm. All the four brooches are probably late 13th or 14th century in date.

## BEADS AND RINGS

### Catalogue (Fig 20:M5.C6)

- 20.1 A fragment of a bead made of paste Victoria Street  
with a ribbed decoration on the Layer 22: Period 5c  
outside. The bead has a blue (M1.D6-D10)  
glaze on the inside and a blue Mid 10th to 11th  
and black glaze on the outside. century  
The fragment is part of a melon  
bead probably of late 1st or early  
2nd century date. (Kenyon, 1948,  
Fig 93.7 and 8; Wheeler, 1926,  
Fig 63).  
Roman
- 20.2 A circular glass bead, 17mm Berrington Street 4  
diameter with a hole 3mm in Floor 861: Period 2a  
diameter. Found with no 3 (M2.C5-D4)  
below. 10th century  
(M5.C7)  
cAD 900-1000
- 20.3 A circular glass ring, 24mm Berrington Street 4  
diameter with a hole 15mm in Floor 861: Period 2a  
diameter. Found with no 2 above. (M2.C5-D4)  
(M5.C7) 10th century  
cAD 900-1000



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**Fig 20** Beads and rings (no 1 - paste; nos 2, 3, 5 & 6 - glass; no 4 - shale; no 7 - fine sandstone). (nos 1 & 5 - Roman; nos 2-4 - 10th century; no 6 - post-medieval; no 7 - uncertain date)

- 20.4 A fragment of a large ring, 30mm diameter with a hole 21mm in diameter. It is made of a dark, polished shale. A nick at one end of the broken edge may represent a deliberate hole in the ring.  
cAD 900-1000
- Berrington Street 2  
Gully 296: Period 2a  
(M2.C5-D4)  
10th century
- 20.5 A fragment of a small blue glass bead 8mm in diameter with a hole 3mm in diameter (Kenyon, 1948, Fig 93.5)  
Probably Roman
- Berrington Street 4  
Layer 734: Period 2c  
(M2.C13-D4)  
Late 11th to early 12th century
- 20.6 A glass bead, 20mm in diameter with a hole 10mm in diameter (see below)  
Possibly post-medieval
- Castle Green  
Unstratified
- 20.7 A sandstone pendant, 38mm long with a hole 1mm in diameter close to one end. The hole is drilled conically from each side of the piece. The stone is apparently a worn river pebble.  
Uncertain date.
- Berrington Street 4  
Unstratified

THE GLASS BEADS AND RING by J Bayley

Glass bead (Fig 20.2)

The bead is of a pale lemony-yellow translucent glass. The perforation appears to have been made while the glass was still soft, most probably by inserting a thin spike into the blob of

glass and rolling it about, so giving rise to the conical hole and the slightly conical side of the bead. The density of the glass is around 5.8 gm/cc which suggests a lead oxide content of around 75%. The colour, as with the other examples, is almost certainly due to traces of iron in the ferric (oxidized) state. This probably got into the glass as a contaminant of one of the raw materials during manufacture. Crucibles containing similar yellow glass are known from Gloucester (Bayley, 1979, 201-4; Bayley, 1982, 493-5) in 10th century levels.

#### Glass ring (Fig 20.3)

This ring, found with Fig 20.2 above, is of a slightly more golden yellow glass. The method of manufacture is not so obvious, but it can be seen that the final smoothing of the inner surface of the ring was carried out with the glass below its free-flowing temperature, but while it was still malleable, as a distinct ridge is visible on one side. The density is about 5.7 gm/cc suggesting a very similar composition to that of Fig 20.2.

#### Glass bead (Fig 20.6)

This bead is of a much deeper golden-brown/amber colour. In its manufacture it is much more like the ring than the first bead. The density is about 2.5 gm/cc which is typical of an alkali silicate glass with little or no lead oxide.

The lack of lead was confirmed using the X-ray fluorescence spectrometer which gave a signal 30 times less than that for the two high lead glass objects.

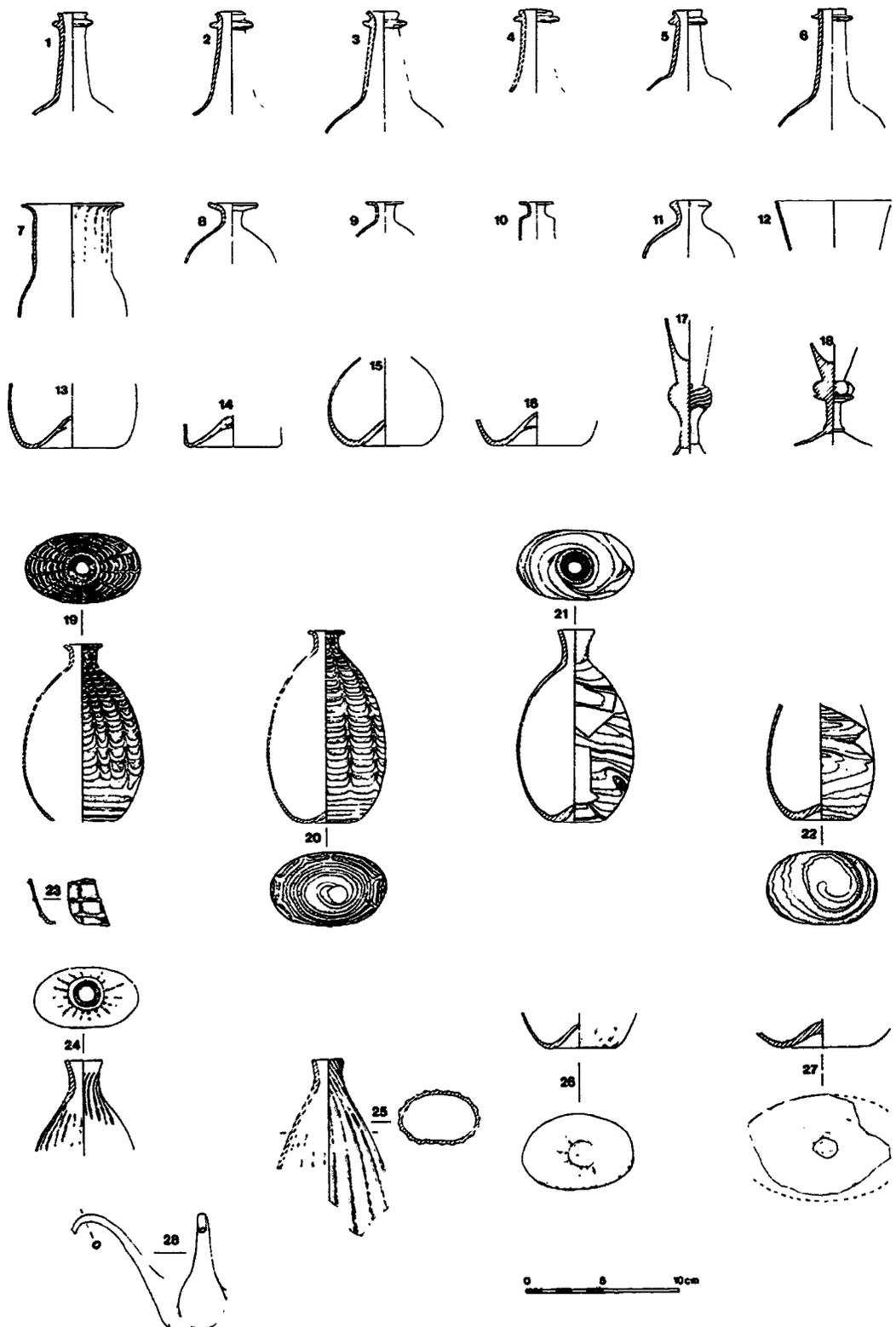
# GLASS OBJECTS

by M G Boulton

The majority of the glassware found in Hereford came from two adjoining pits at the Berrington Street sites. The larger quantity was found in pit 407 on site 2 and the remainder from pit 651 on site 4, both of period 6 and dated by association with other finds to about AD 1700-1720. Apart from the glass, both pits contained a quantity of pottery, some clay pipes, and, in the case of pit 651, organic material including seeds (M9.D8) insects (M9.D4) and fish bones (M9.A8-A11). Both pits were apparently used only for rubbish although one of them (651) was carefully stone-lined. Several other glassware fragments also came from period 6 on Berrington Street, but were from earlier contexts than the two pits, and the remainder came from period 7a at Bewell House, also of early 18th century date.

None of the glassware found in Hereford can be dated to before the latter part of the 17th century although glass was made in England probably from the 13th century onwards (Thorpe, 1929; Kenyon, 1967). This was mainly for windows, but vessels were also made in the 16th century in various parts of the country (Crossley and Aberg, 1972) including Herefordshire (Bridgewater, 1963). Such vessels are of a dark green glass with some bubbles and often include pitting or iridescence caused by weathering. Clear 'crystal' glass manufacture was perfected in England by Ravenscroft about AD 1675 (Charlston, 1968) shortly after the development of the thick, dark green wine bottles.

Although the glassware from Hereford includes the common types found in late 17th and early 18th century contexts such as apothecaries' bottles and wine bottles, there are also some more unusual flasks which may have been imported.



RB

**Fig 21** Glassware from Berrington Street 2, period 6, pit 407 - late 17th to early 18th century

Catalogue (Fig 21:M5.C12)

All items on Fig 21 came from Berrington Street 2: pit 407, period 6 (M2.E13-F5) and are dated to AD 1700-1720 unless otherwise shown.

- 21.1 The neck of a small string rim bottle of clear light green bubbled glass (V and A Mus Coll, 1956-175)  
Mid to late 17th century
- 21.2 The neck of a small string rim bottle of clear light green slightly bubbled glass
- 21.3 The neck of a small string rim bottle of clear light green bubbled glass. This is probably the same vessel as Fig 21.13
- 21.4 The neck of a small string rim bottle of clear light olive-green glass
- 21.5 The neck of a small string rim bottle of clear light greenish-blue glass. This is probably the same vessel as Fig 21.15 and could be slightly oval in shape.
- 21.6 The neck of a small string rim bottle of clear colourless glass. It is probably the same vessel as Fig 21.16
- 21.7 Part of a vase of clear pale green bubbled glass with mould-blown ribs (Barton, 1969, Fig 70.80; Rahtz, 1979, Fig 88.31)
- 21.8 Part of a medicine bottle of clear pale green slightly bubbled glass

- 21.9 Part of a medicine bottle of clear pale green slightly bubbled glass
- 21.10 Part of a medicine bottle of clear light green glass
- 21.11 Part of a medicine bottle of clear olive-green bubbled glass
- 21.12 Part of a goblet of clear colourless glass
- 21.13 The base of a small bottle of clear light green bubbled glass. This is probably the same vessel as Fig 21.3
- 21.14 The base of a small bottle or jar of clear light green, slightly bubbled glass
- 21.15 The base of a small bottle of clear light greenish-blue glass. This is probably the same vessel as Fig 21.5
- 21.16 The base of a small bottle of clear colourless glass. This is probably the same vessel as Fig 21.6
- 21.17 The stem of an ale-glass of lead crystal glass. It is squat, wrythen, and of inverted baluster form (Thorpe, 1929, XXXVI, 1; dated to 1685-1695)
- 21.18 The stem of a wine glass of blue-tinged, low-lead content, crystal glass. A solid quatrefoil knop above a flat collar. (Thorpe, 1929, XXI; dated to 1680-1690)
- 21.19 A medicine flask or perfume bottle of clear ginger-brown glass with opaque white combed and marvelled threading spiralling up from the base. (Platt & Coleman-Smith, 1975, Fig 226.1600, dated to perhaps the late 17th century)
- 21.20 Similar to Fig 21.19

- 21.21 A similar flask to Fig 21.19 but of opaque dark brown glass with opaque white, blue-tinged, marvelled threading spiralling irregularly up from the base
- 21.22 A similar flask to Fig 21.21 but made from a clear, dark ginger-brown glass
- 21.23 A fragment of a medicine flask of clear brown glass with opaque white threading applied to a moulded, ribbed vessel and lightly marvelled. (See also Fig 22.7)
- 21.24 Part of a flask of clear green glass, lightly ribbed. This is probably the same vessel as Fig 21.26
- 21.25 Part of a flask of clear green bubbled glass, heavily ribbed
- 21.26 The base of a flask of clear green glass, lightly ribbed. This is probably the same vessel as Fig 21.24
- 21.27 The base of a flask of clear brown-tinged colourless bubbled glass
- 21.28 A spout, which may have been from a posset pot but is more likely to have been from an oil-ewer. It is of clear, green-tinged, slightly bubbled glass (Thorpe, 1929, XVII)

Catalogue (Fig 22:M5.D2)

The first 18 items on Fig 22 all came from Berrington Street 4: pit 651, period 6 (M2.E13-F6) and are dated to AD 1700-1720.

- 22.1 Part of a string rim bottle of clear light green bubbled glass. This is probably the same vessel as Fig 22.17 (V and A Mus Coll, 1956-175)

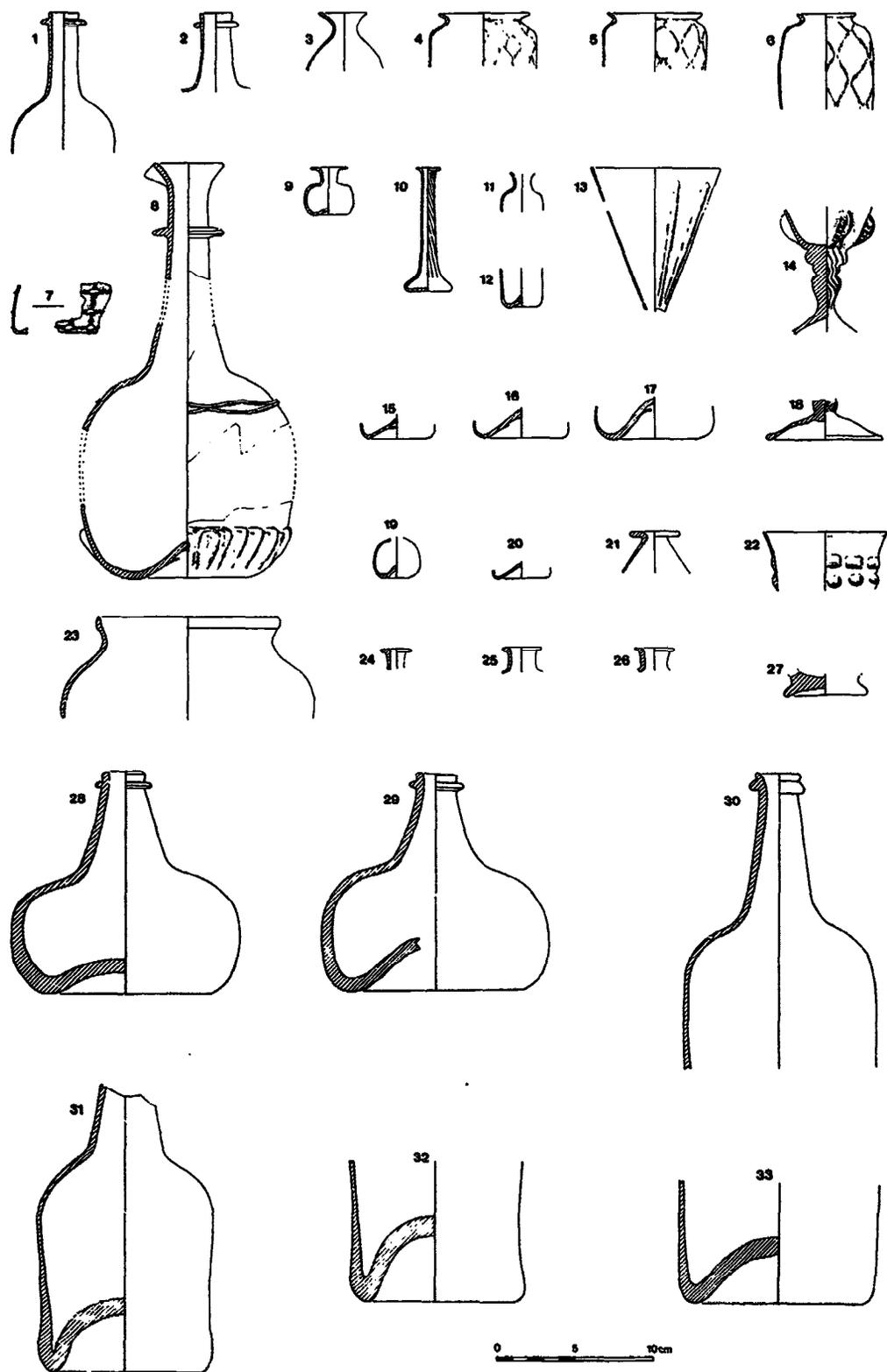


Fig 22 Glassware (nos 1-18 - Berrington Street 4, period 6, pit 651, late 17th to early 18th century. nos 19-27 - other fine glass from Hereford, mainly early 18th century. nos 28-33 - wine bottles of late 17th to early 18th century date)

- 22.2 The neck of a string rim bottle of clear, light green slightly bubbled glass
- 22.3 The neck of an apothecary's bottle with a slight spout. It is made of clear light green bubbled glass
- 22.4 A jar made of clear light green bubbled glass with a mesh-moulded decoration. This is probably the same vessel as 22.16 (Alvey, 1973, Fig 10.29)
- 22.5 A jar similar to Fig 22.4
- 22.6 A jar similar to Fig 22.4 but made of a pale green glass
- 22.7 A fragment of a medicine flask of clear brown glass with opaque white threading applied to a moulded ribbed vessel and lightly marbled. (See also Fig 21.23)
- 22.8 A jug or serving bottle of clear lead crystal glass. The vessel has a gadrooned base, and a trailed circuit on the shoulder (The vessel could be squatter than it has been drawn). (V and A Mus Coll. Barry Richards Loan 4)
- 22.9 A small apothecary's bottle of clear light green glass
- 22.10 A slender apothecary's bottle of clear light green slightly bubbled glass with fine moulded ribs
- 22.11 The neck of a small bottle of clear light green glass. This is probably the same vessel as Fig 22.12
- 22.12 The base of a small bottle of clear light green glass. This is probably the same vessel as Fig 22.11

- 22.13 The bowl of a goblet of clear green-tinged colourless bubbled glass with light moulded ribs. This is possibly the same vessel as Fig 22.18
- 22.14 Part of a wine glass made of clear lead crystal glass. The winged bowl is supported by a wrythen knop and baluster stem. (Thorpe, 1929, XXVII, dated to the late 17th century)
- 22.15 The base of a bottle of clear greenish-blue slightly bubbled glass
- 22.16 The base of a bottle of clear light green bubbled glass which is mesh moulded. This is probably the same vessel as Fig 22.4
- 22.17 The base of a bottle of clear light green bubbled glass. This is probably the same vessel as Fig 22.1
- 22.18 A folded foot of a goblet. It is made of clear colourless glass and has a wrythen stem. This is possibly part of Fig 22.13

Fig 22.19-27 illustrates other fine glass from Hereford. The pieces are dated to the early 18th century unless otherwise stated.

- |       |  |                                     |
|-------|--|-------------------------------------|
| 22.19 | Part of an apothecary's jar of pale green slightly bubbled glass. The vessel is square-sided | Berrington Street 4<br>Unstratified |
| 22.20 | The base of a bottle of clear light green slightly bubbled glass                             | Berrington Street 4<br>Unstratified |

- 22.21 This piece may be part of an hour-glass. It is of cloudy green glass (Platt, 1975, Fig 226.1597)  
AD 1650-1700  
Berrington Street 4  
Cellar 701: Period 6  
(M2.E13-F5)
- 22.22 Part of a vase made of clear glass containing many bubbles. It has a raised mould-blown decoration (Platt, 1975, Fig 223.1530 dated to the 16th century; Rahtz, 1979, Fig 88.23)  
This is probably of late 17th century date but could be earlier  
Berrington Street 4  
Trench 705: Period 6  
(M2.E13-F5)  
Early 18th century
- 22.23 The neck and shoulder of a pickle jar, made of clear light green bubbled glass  
Berrington Street 4  
Unstratified
- 22.24 The neck of a medicine bottle of clear, almost colourless green glass  
Bewell House  
Layer 22: Period 8  
(M3.B3-B4)  
19th century
- 22.25 The neck of a medicine bottle of clear light green glass  
Bewell House  
Layer 22: Period 8  
(M3.B3-B4)  
19th century
- 22.26 The neck of a medicine bottle of clear, almost colourless green glass  
Bewell House  
Pit 99: Period 7a  
(M3.A14-B3)  
Early 18th century
- 22.27 A heavy base which was probably part of a dish  
Berrington Street 4  
Unstratified

Fig 22.28-33 illustrates wine bottles from other contexts apart from those from Berrington Street 4, context 651 (for which see Fig 23:M5.D12)

- |          |   |  |
|----------|---|--|
| 22.28    | A squat wine bottle of clear dark green bubbled glass<br><u>cAD</u> 1670-1700                                 | Berrington Street 1<br>Pit 5: Period 6<br>(M2.E13-F5)<br>Late 17th to early 18th century |
| 22.29    | A squat wine bottle of clear dark green bubbled glass<br><u>cAD</u> 1670-1700                                 | Berrington Street 1<br>Pit 5: Period 6<br>(M2.E13-F5)<br>Late 17th to early 18th century |
| 22.30-33 | Fragments of wine bottles of clear dark green bubbled glass, all of cylindrical shape<br><u>cAD</u> 1700-1730 | Bewell House<br>Pit 177: Period 7a<br>(M3.A14-B3)<br>Early 18th century                  |

#### THIN GREEN GLASS VESSELS

Several vessels made of thin, clear light green glass were found in the two pit groups in Hereford. The variety of forms includes narrow-necked, globular-bodied bottles, medicine bottles, flasks, jars and a vase, all containing a 'kick' in the base. There is a great variety in the shape and size of these chemists' bottles which date from the late 17th century through to the early 19th century. One or two pieces which are of a clear, almost colourless glass are probably of very early 18th century date.

#### CLEAR, COLOURLESS GLASS VESSELS

Several examples of lead crystal glass were found in the two pits and must date after AD 1675 when the process was introduced. Three wine glass stems and bases (Fig 21.17 & 18; Fig 22.14) are

typical of this heavy glass as are the many fragments which have been joined together in the reconstruction of a serving jug (Fig 22.8). Part of the rims of two goblets (Fig 21.12; Fig 22.13) and one base (Fig 22.18) are of similar, but lighter, glass and the spout of an oil-ewer (Fig 21.28) is also of thin, colourless glass. A heavy base, probably from some form of dish (Fig 22.27) which was found in an unstratified context at Berrington Street site 4, could be from the first half of the 18th century.

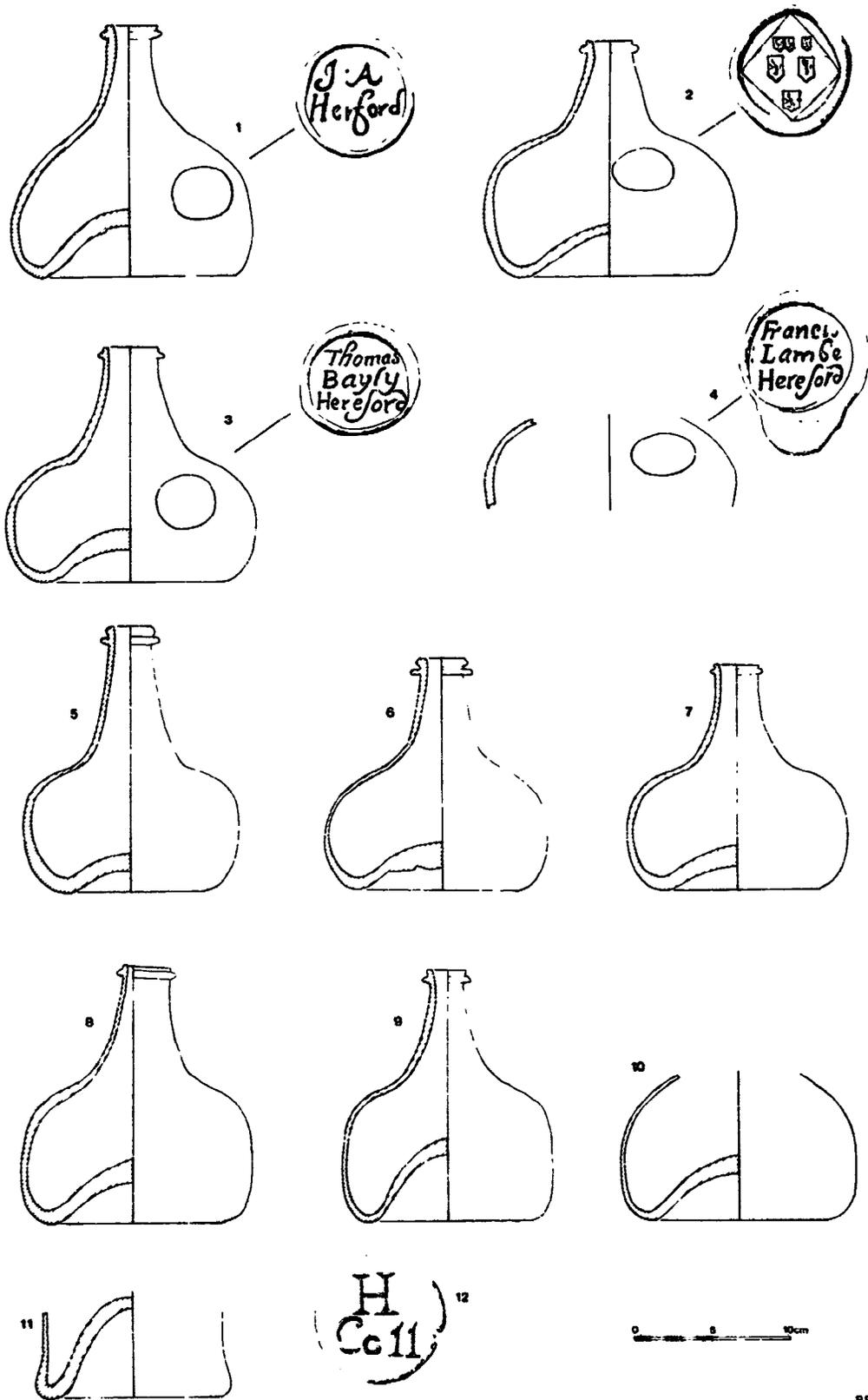
An early variety of clear glass, but with many bubbles, (Fig 22.22) was found in the foundation trench 705 for wall 660 of the period 6 stone-based building on Berrington Street site 4. This piece probably dates to the late 17th century. One of the bottles found in pit 407 (Fig 21.6) is of clear glass but otherwise identical to the thin green glass varieties with which it was found.

#### THIN BROWN GLASS VESSELS

Fragments of several flasks were found in pit 407 which were made of a thin brown glass, decorated in several forms with opaque white trailing (Fig 21.19-23). They are all globular-bodied with a 'kick' in the base and a narrow neck and stand some 130mm high. A piece with similar decoration in the form of a tankard, which was found at Southampton (Charleston in Platt, 1975; no 1600), was considered to be probably Spanish, and perhaps of late 17th century date. However, the technique is not unknown in English glass and the pieces could have been made in this country.

#### THICK DARK GREEN GLASS

Wine bottles made of thick dark green glass are found in England from the mid 17th century onwards. The earliest types were rather squat and had a string rim for fixing the wire which held the cork in place. Andrew Yarranton (1677), referring to the transport of cider by river from Hereford, states that



**Fig 23** Wine bottles (nos 1-11 - Berrington Street 4, period 6, pit 651, late 17th to early 18th century. no 12 - wine bottle seal from the College of the Vicars' Choral)

'Five or six glass houses were started in these parts to provide bottles'. (Johnson, 1953). By the mid 18th century the cylindrical shape had become common and was used thereafter. These bottles often have seals on the side with the name of the owner or occasionally the bottler.

**THE WINE BOTTLES FROM BERRINGTON STREET 4, PIT 651, PERIOD 6  
(Fig 23:M5.D8)**

- 23.1 A squat wine bottle of clear dark green bubbled glass. The seal is inscribed 'I.A. Herford'. The initials are popular: Jeremiah Addis was mayor in 1653, John Abrahall was mayor in 1693 (Johnson, 1882, 235). Thomas Addis was an inn holder who owned several houses in Broad Street in 1710 (HRO, HA 11/7). It is, however, perhaps more likely that the bottle belonged to James Aston, gent, who was indicted in April 1633 with Mrs Mary Bayley for not selling wine at a reasonable price (HRO, Heref Docs 205, 248). James Aston was assessed for two hearths in the 1665 Hearth Tax (PRO, E179/119). There is also the Aubrey family who were resident in St Nicholas parish during this period, but John and James were not common Aubrey christian names (St Nicholas Parish Register).
- 23.2 A squat wine bottle of clear, dark green bubbled glass. The seal has a crest comprising three rows of escutcheons sa. each charged with a lion rampant of the first 3.2.1 all in a lozenge. These are the arms of the Sitsylt or Cecil family originally of Alteryannis at Walterstone (Strong, 1848, 95 & pl IX). According to Robinson (1872) the Cecils had gone by the late 16th century but a William Seycil is included in the Poll List for Hereford on 3rd August, 1747.

23.3 A squat wine bottle of clear, dark green bubbled glass. The seal is inscribed 'Thomas Bayly, Hereford'. A Thomas Bayley is mentioned in association with the annual 'Free Buck' feast in Hereford on 3rd October, 1706 (Carless, 1900) and is presumably the same Thomas who was mayor in 1710 (Johnson, 1882, 235). Bayley (Bailey, Bayly) was a common family name in 17th century Hereford. One branch was settled in St Martin's parish (Whitehead, 1977, 17-19). Mrs Mary Bayley, widow, was indicted with James Aston (qv) in 1633 for not selling wine at a reasonable price. James Bayley, a victualler, was similarly indicted for an affray at his house in 1661 (HRO, Heref Docs, 15-19, ff 205, 248; 24-27, f 74). James Bayley was assessed for three hearths in Bye Street ward in 1665 (PRO E179/119).

23.4 Part of a clear, dark green bubbled glass wine bottle with a seal inscribed 'Francis Lambe, Hereford'. There is no sign of this name in the Hearth Tax or Hereford Documents. A family with this surname was settled in Dilwyn parish in the 17th century (Robinson, 1872, 90).

23.5-10 Wine bottles similar to above but without seals.

23.11 The base of a wine bottle of clear, dark green bubbled glass, but of cylindrical shape and slightly later in date than 23.1-10.

23.12 A seal reading 'H Coll' found during trenching in the courtyard of the College of the Vicars' Choral.

## **WINDOW GLASS**

Window glass was rare from all the excavations in Hereford in contexts earlier than the 18th century. Two very small pieces of painted glass (unillustrated) were found at the Brewery site

(Layer 7, which could be 13th century, and Layer 190, late 12th century). One single fragment of dark green glass with a dull gold paint came from the period 3 soil layer at Bewell House (early 13th century) and a few fragments were found in the period 6 levels (up to late 17th century).

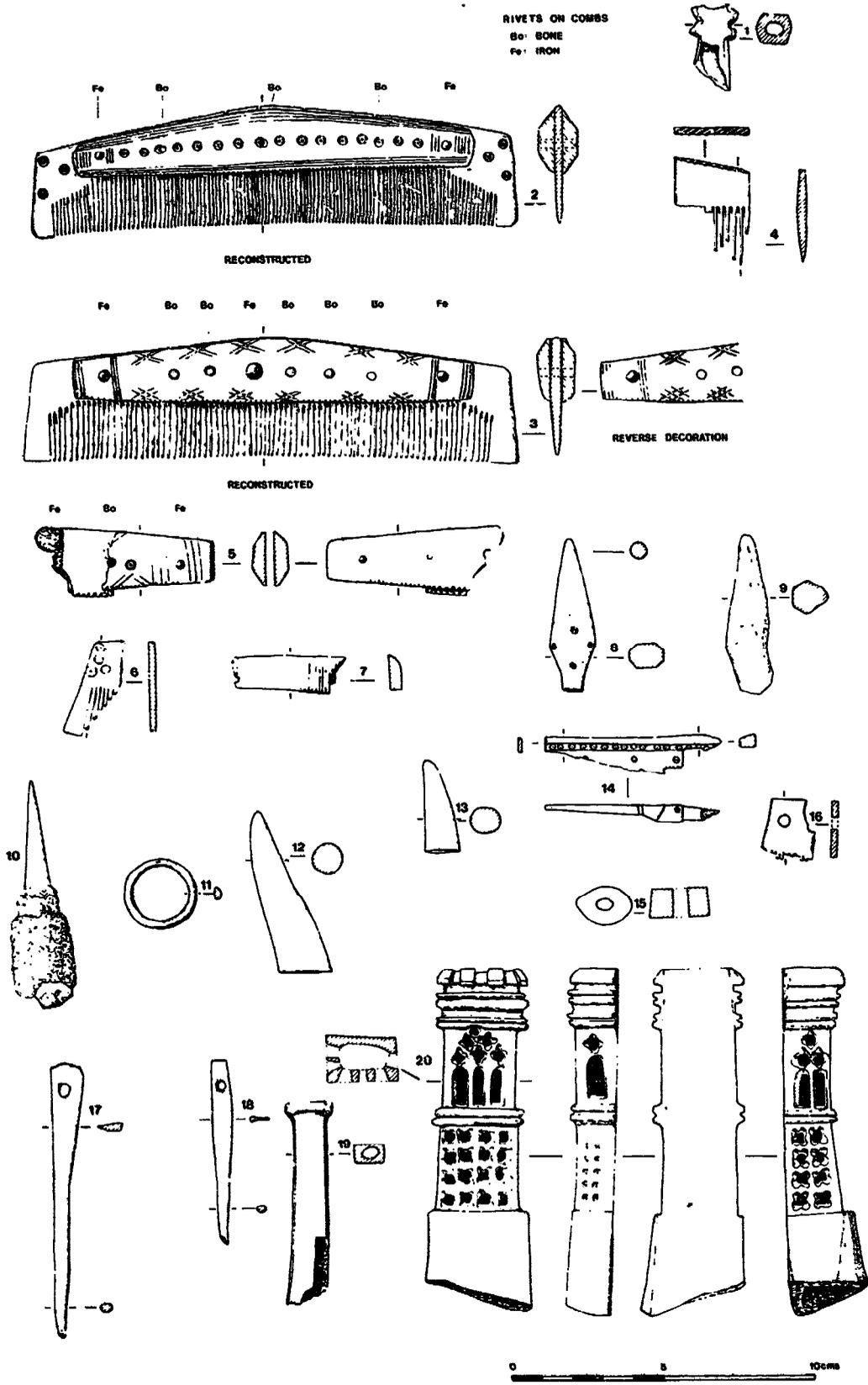


Fig 24 Carved bone objects - 8th to 16th centuries

M5.E1

## WORKED BONE

As animal bone is normally well preserved in excavated levels in Hereford the scarcity of worked bone is worthy of comment. The distribution was as follows:

PERIOD	QUANTITY	SITE
11th century and earlier	2	Victoria Street
	7	Berrington Street
12th and 13th centuries	6	Berrington Street
	1	Bewell House
14th century and later	2	Berrington Street
	1	Bewell House
	1	Brewery

The most common objects are bone combs (particularly in the earlier periods) and various pointed tools. The distribution outlined above suggests that bone was never in common use in Hereford but that it was more popular during the late Saxon and early Norman periods than at any later date.

### Catalogue (Fig 24:M5.E1)

- 24.1 A roughly squared piece of bone with two raised ridges on each of two sides and a slight groove on the top. The piece is broken but it could have been part of a knife handle.
- Length: 27mm  
cAD 750-900
- Berrington Street 2  
Layer 108: Period 1  
(M2.A6-C5)  
Late 8th to 9th  
century

- 24.2 Reconstructed drawing of a bone comb. (Fig 25 and M5.E6)  
cAD 950-1100  
Victoria Street  
Layer 88: Period 5c  
(M1.D6-D10)  
Mid 10th to 11th century
- 24.3 Reconstructed drawing of a bone comb. (Fig 26 and M5.E6)  
cAD 950-1100  
Victoria Street  
Layer 88: Period 5c  
(M1.D6-D10)  
Mid 10th to 11th century
- 24.4 A fragment of a thin rectangular slice from a comb. A grooved decoration along the top edge indicates that this part was visible in the complete comb.  
(M5.E6)  
cAD 1000-1050  
Berrington Street 4  
Context 844: Period 2b  
(M2.C10-D4)  
Early to mid 11th century
- 24.5 The broken end of a comb.  
(M5.E6)  
cAD 750-900  
Berrington Street 3  
Layer 108: Period 1  
(M2.A6-C5)  
Late 8th to 9th century
- 24.6 A fragment of a thin rectangular slice from the end of a comb.  
(M5.E6)  
cAD 900-1000  
Berrington Street 2  
Gully 296: Period 2a  
(M2.C5-D4)  
10th century
- 24.7 A fragment which could be from the side plate of a comb or part of a knife handle. It is decorated with series of vertical saw cuts.  
Length: 37mm  
cAD 750-900  
Berrington Street 4  
Gully 930: Period 1  
(M2.A6-C5)  
Late 8th to 9th century

- 24.8 A pointed object narrowing to a shaft which has been broken. The piece is decorated around the shoulder with regular dot and circle ornament and is well polished. It is possibly a peg for a musical instrument.  
Length of fragment: 52mm  
cAD 1000-1050
- Berrington Street 4  
Layer 841: Period 2b  
(M2.C10-D4)  
Early to mid 11th century
- 24.9 A roughly pointed bone object.  
Total length: 53mm  
cAD 750-900
- Berrington Street 2  
Layer 108: Period 1  
(M2.A6-C5)  
Late 8th to 9th century
- 24.10 The cut and pointed tine from an antler of a deer.  
Total length: 75mm  
AD 1050-1150
- Berrington Street 4  
Layer 816: Period 2c  
(M2.C13-D4)  
Late 11th to early 12th century
- 24.11 Bone ring.  
Internal diameter: 19mm  
Thickness: 2mm  
AD 1150-1250
- Berrington Street 1  
Layer 56: Period 3  
(M2.D10-E2)  
Late 12th to early 13th century
- 24.12 The tip of an antler cut to produce a pointed tool (Farley, 1976, Fig 26.17)  
Total length: 58mm  
Probably AD 1150-1250
- Berrington Street 4  
Layer 835: Period 3  
(M2.D10-E2)  
Late 12th to early 13th century

- 24.13 The tip of an antler cut to produce a pointed tool. Similar to Fig 24.12 :M5.E4  
Total length: 31mm  
AD 1250-1300
- Berrington Street 2  
Pit 115: Period 4  
(M2.E2-E7)  
Late 13th century
- 24.14 A carved fragment which may have been from a box or book hinge or could possibly be part of a bone buckle, (Beresford, 1975, 77 and 78) The engraved surface has dot and circle ornamentation within lines. A small hole is drilled through the piece along the broken edge. There are two cut and polished steps along the base and a small hole drilled vertically from the lower step close to the broken end.  
Length of fragment: 57mm  
AD 1200-1250
- Bewell House  
Pit 260: Period 3  
(M2.G2-G9)  
Early 13th century
- 24.15 A cut piece of bone of uncertain use.  
Length: 10mm  
AD 1250-1300
- Berrington Street 4  
Pit 739: Period 4  
(M2.E2-E7)  
Late 13th century
- 24.16 A fragment of a thin rectangular plate from the end of a single sided bone comb. There are six teeth to each 10mm and the plate contains two well-drilled and polished holes.  
AD 1250-1300
- Berrington Street 3  
Pit 509: Period 4  
(M2.E2-E7)  
Late 13th century

- 24.17 A bodkin with a slightly oval hole in one end. The point is broken. Found with Fig 24.18. Length of fragment: 91mm AD 1500-1550 Berrington Street 4 Pit 730: Period 6 (M2.E13-F5) Early 16th century
- 24.18 A bodkin with a circular hole found with Fig 24.17. The point is broken. Length of fragment: 60mm AD 1500-1550 Berrington Street 4 Pit 730: Period 6 (M2.E13-F5) Early 16th century
- 24.19 Part of a handle. Length of fragment: 67mm AD 1250-1350 Bewell House Layer 258: Period 5 (M3.A8-A11) Late 13th to mid 14th century
- 24.20 An uncompleted carving of uncertain use. Openings representing windows on three sides, the fourth being plain. The right hand side lower portion has apparently not been finished. The base has been left at an angle and the carving will not stand upright. It was possibly intended as a chess-man or was a purely decorative trial piece (Fig 27) AD 1450-1500 Brewery Pit 88: Period 4c (M3.D13-E2) Late 15th century

THE SAXON BONE COMBS (Figs 24.2-6, 25 & 26)

Two nearly complete bone combs were found in the mixed soil 88 on the tail of the turf and clay rampart in Victoria Street. Most of the teeth were broken but were found in place. Fragments of three others were found in Berrington Street in

periods 1 and 2. A sixth fragment (Fig 24.7) could belong to a comb. They are all of similar design and are single-sided with some decoration.

FIG	MAXIMUM LENGTH OF TEETH	TEETH PER CM
24.2 & 25	20mm	8
24.3 & 26	20mm	6
24.4	18mm	6
24.5	-	6
24.6	-	8

The one comb (Fig 24.2) consists of eight or nine thin rectangular slices of bone held together by two decorated bone plates. The end slices protrude beyond the supporting plates and are ornamented with three circle and dot decorations on each side. The retaining plates are decorated with incised lines around the edges and in groups at the ends and have a row of ring and dot decoration centrally. The reverse plate has identical decoration. The pieces are held together with three bone and two iron rivets. The central bone rivet has part of the ring and dot decoration super-imposed demonstrating that the parts of the comb were joined together before the decoration was engraved. Slight indications of teeth cuts in the retaining plates suggest that the teeth were also cut after joining.

The other comb from Victoria Street (Fig 24.3) is constructed in a similar manner to the first, but has coarser teeth. The ends of the comb are undecorated but the retaining plates have a series of cross cuts along the edges and some vertical grooving. The decoration is slightly different on the reverse. The plates are held together with five bone and three iron rivets.

The two combs were examined by Barbara Noddle who comments: 'A section of one of the teeth reveals that the plates have been cut with the length of the bone running up them to give maximum strength. The bone from which they were cut must therefore have been one with a wide flat longitudinal surface; the posterior surface of the bovine (or possibly equine) radius is a suitable shape, but the posterior surface of a large bovine metacarpal might have sufficed. The enclosing plates contain cancellous bone; this, and the general shape, suggest a split rib, either bovine or equine.'

The broken end of the comb from Berrington Street (Fig 24.5) comprises part of both side plates and a fragment of one slice of the core. The decoration, which is on one side only, is similar to Fig 24.3, but includes a dot and circle decoration. Both iron and bone rivets were used to hold the pieces together.

The fragment of an end slice (Fig 24.6) has a slightly more angled end than Fig 24.2 & 3, and is decorated with a dot and circle motif.

The use of bone for the tooth plates, rather than antler, and the use of ribs for the enclosing plates is not common. In York over 95% of the combs found were made of antler. Bone rivets are equally rare and seem to be restricted on the whole to the west of the country including Ireland (MacGregor in Hall, 1978 and personal communication).

The bone fragment (Fig 24.7) is likely to be a knife handle rather than a comb and the later comb fragment (Fig 24.16) shows some of the changes in design by the 13th century.

# COINS

The catalogue of coins from Hereford is in two parts. The first part lists the coins discovered during the archaeological excavations, and the second includes the Roman coins found in various parts of the city during the last 50 years.

## CATALOGUE OF COINS FROM EXCAVATIONS

The catalogue order is that of the date of the coin irrespective of site. The descriptions are by Miss M M Archibald of the British Museum, with the exception of no 5 (R H M Dolley) and no 17 (G C Boon).

- |   |   |   |
|---|---|---|
| 1 | <u>Dupondius</u> 1st century AD<br>The details of effigy and type are illegible but the metal and size suggests that this is a <u>dupondius</u> of the 1st century AD. It could possibly be one of the common <u>dupondii</u> of Antonia but it is not clear enough to suggest this more than tentatively | Brewery<br>Pit 79: Period 2b<br>(M3.C10-D3)<br>12th century                       |
| 2 | <u>Denarius</u> of Carausius (AD 287-93)<br>Reverse: PAX type<br>Details which would make a reference to RIC are illegible. The style of bust suggests that it belongs to the later part of the reign   | Bewell House<br>Pit 259: Period 5<br>(M3.A8-A11)<br>Late 13th to mid 14th century |
| 3 | Radiate of the late 3rd century.<br>This is too corroded to be identified further   | Brewery<br>Unstratified   |

4 Silver penny of Alfred (AD 871-99) Berrington Street 1  
'Guthrum' type Layer 60: Period 1  
Moneyer: TIRVALD (M2.A6-C5)  
Style of Canterbury mint Late 8th to 9th  
Obverse: †EL FR ED RE century

Reverse: TIRVA/LDM

This type was in issue at the close of Alfred's reign. The date at which it began is uncertain but may have been around AD 887. These coins remained in circulation after the death of Alfred but were gradually replaced as the dominant coin in currency by the issues of Edward the Elder and Athelstan. In the Morley St Peter hoard buried cAD 925, for example, less than 10% of the coins present were of Alfred. Although one must always allow for later survival, a reasonable bracket for the loss of this coin would be cAD 887 to cAD 925, with the greatest statistical likelihood of loss late in Alfred's reign or early in the reign of Edward the Elder. The coin is in poor condition and only partly reconstituted

5 Silver penny of Cnut (AD 1016-1035) Brewery  
Moneyer: LEOFWINE Layer 7: Period 2c  
Mint: Chester (M3.D3-D8)  
The coin is of the short cross Late 12th to early  
type and as such belongs to the 13th century  
last years of Cnut's reign. The  
terminus post quem for striking it

(cont)

is perhaps Michaelmas AD 1029 but more probably the autumn of 1030, and all the evidence is that the issue was effectively demonitised by the end of AD 1036 at the latest. By far the greatest likelihood, then, is that the coin was lost during the first half of the fourth decade of the 11th century, and what can be seen of the original surface does suggest that the coin had seen relatively little wear. Stylistically and epigraphically, too, the coin does seem to belong nearer the beginning than the end of the issue and 'cAD 1030 or a very little later' may seem the most appropriate dating for striking and loss alike.

The obverse type is a diademed bust facing left with a lis-headed sceptre before the face. The initial cross and the four letters of the king's name are clearly to be seen, and sufficient of the type and of the legend are present to be confident that the coin was struck from the same obverse die as a Chester penny of the moneyer Leofwine, formerly in the Willoughby Gardner cabinet and now in the Grosvenor museum at Chester (SCBI, 1964, 265). The reverse type is a voided short cross, and minor double printing does not prevent there being read the letters

'...OFFPINE ON LE...', so that the piece is in fact identifiable as from the same reverse die as the Chester coin just mentioned, the reconstructed legend reading (in transliteration) LEOFWINE ON LEGII (Leofwine at Chester). That a Chester coin should find its way to Hereford in the early 1030's occasions no surprise. A decade later we find another Chester coin, this time unique, occurring in a Caerleon context and it is clear that there was considerable passage of coin up and down the Welsh marches. That, too, the Severn was something of a highway southwards earlier in the 11th century may be thought to be suggested by the circumstances that c. AD 1010 dies for the coinage cut at Chester were distributed not just to Shrewsbury and Gloucester but also to Bristol (?) and even Watchet.

6 Silver penny of Henry I (AD 1100-1135) Bewell House  
 BMC type X Layer 400?: Period 3  
 Obverse: HENRICVSREXAN (M2.G2-G9)  
 Reverse: RAVE (NW) A (R) OHER Early 13th century  
 Mint: Hereford  
 Weight: 1.25 gm  
 Moneyer: Ravenwart  
 (some letters are only partially visible on both sides)

Owing to the irregularity of the lettering and spacing on the reverse it is difficult to be certain of the reconstruction of the exact form of the moneyer's name. RAVENWAR seems the easier reading but RAVENWART would also be possible. The former is used in the only other coin of the moneyer in the type (from the Lincoln hoard, (Archibald, 1973)) which is however from a different die. The obverse die of the present coin is also different from this coin and from those of the other Hereford moneyer SARIC known in this type

The dating of the types of Henry I presents considerable difficulties. It has been suggested that type X was issued following the inquisition of Christmas 1124 and that it lasted less than a year (Dolley, 1966). The writer has given reasons for suggesting, however, that it was type XIII which followed the inquisition (Archibald, 1973) and consequently the start of type X must be pushed back to c 1120. It would seem reasonable that following the reform of 1124 an effort would have been made to rid the currency of the coins of miscellaneous size and suspect weight and fineness from the middle period of Henry I's reign but the Lincoln hoard buried towards its close still contained substantial

numbers of coins of type X.  
 Too few hoards have survived for  
 an accurate estimate to be made of  
 how general such survivals were but  
 hoards from the Anarchy under  
 Stephen include only a few stray  
 survivors of Henry I coins before  
 type XV. As far as can be deduced  
 from the present evidence, abnormal  
 survivals apart, this coin was  
 certainly lost before AD 1140 and  
 most probably before AD 1130

- |   |  |  |
|---|--|--|
| 7 | <p>Silver penny of Henry II<br/>         (AD 1154-1189)<br/>         'Tealby' type; bust F<br/>             Obverse: .....XA<br/>             Reverse: RAV.....<br/>             Mint:       Canterbury<br/>             Moneyer: Raul<br/>             Same dies as BMC 94</p> <p>Bust F was in issue 1170-1180.<br/>         Since the short cross type super-<br/>         seded the Tealby type quickly<br/>         after its introduction in 1180, the<br/>         terminus for the currency of this<br/>         coin, abnormal exceptions apart, is<br/>         therefore AD 1170-<u>c</u>1183</p> | <p>Berrington Street 2<br/>         Pit 103: Period 3<br/>         (M2.D10-E2)<br/>         Late 12th to early<br/>         13th century</p> |
| 8 | <p>Silver penny of Henry II<br/>         (AD 1154-1189)<br/>         Short cross penny of type 1b<br/>             Mint:       London<br/>             Moneyer: Willelm</p>  | <p>Bewell House<br/>         Pit 260: Period 3<br/>         (M2.G2-G9)<br/>         Early 13th century</p>                                   |

8 (cont)

Class I of the short cross coinage was struck from 1180-1189 and although precise dates cannot be ascribed to the issue of the sub-types one may think in terms of c1185. Theoretically any short cross penny could have remained in circulation until AD 1250, but this particular coin was scarcely worn when it was deposited, so, abnormal exceptions apart, a bracket of 1185-1205 may be suggested with a bias in favour of an earlier rather than later date within it

- 9 Silver penny of Edward IV (AD 1461-1483)  
Mint: York  
Archbishop Thomas Rotherham. The T by the neck is visible. Struck AD 1480-1483. This coin is very worn and has been clipped and was possibly lost well into the 16th century
- Berrington Street 4  
Layer 695: Period 6  
(M2.E13-F5)  
Early 18th century
- 10 Silver half-groat of Henry VII (AD 1485-1509)  
Mint: Canterbury  
Initial mark: tun  
Double-arched crown type, outer arch decorated. The tun is a device for Archbishop Morton 1486-1500. This group was produced c1490-1500 but remained
- Berrington Street 4  
Pit 730: Period 6  
(M2.E13-F5)  
Mid 16th century

(cont)

- 10 (cont)  
 current until the debasement of  
 the currency by Henry VIII drove  
 out the better, older money in  
 the mid-1540's
- 11 Silver sixpence of Elizabeth I Berrington Street 4  
 (AD 1558-1603) Unstratified  
 Dated: 1585  
 Initial mark: Escallop  
 Such coins survived in currency  
 into the Civil War period. This  
 coin is well worn and clipped and  
 might possibly have been in use  
 as late as that, although perhaps  
 a little more actual wear would be  
 normal
- 12 Halfpenny of George III Cantilupe Street  
 (AD 1760-1820) Pit 561: Period 5  
 Dated: 1775 (M1.G10-G11)  
 Little wear suggesting deposition 18th to 19th century  
 shortly after manufacture
- 13 Halfpenny of George III Bewell House  
 Dated: 1799 Unstratified  
 Partial wear on the reverse
- 14 Penny of George III Bewell House  
 Dated: 1806 Layer.15: Period 7b  
 Well worn (M3.A14-B3)  
 Late 18th to early  
 19th century

(cont)

15	Halfpenny of George III Dated: 1807 Well worn	Bewell House Layer 15: Period 7b (M3.A14-B3) Late 18th to early 19th century
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**TOKENS AND JETTONS**

16	Jetton Obverse: Fleur de lys with illegible legend around Reverse: ?Mitre with fleur de lys on it, surr- ounded by illegible legend	Bewell House Probably Layer 77: Period 6 (M3.A12-A13) Late 14th to late 17th century
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This token is very worn and of uncertain origin, but probably 15th century French or the Low countries

17	Token pre AD 1662 (The following note is by G C Boon of the National Museum of Wales, Cardiff). The token is of William Bateman of Haverfordwest	Liberal Club (M3.F9-F11) Layer 8
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Obverse: † WILL † BATMAN MERCER

\* R Ø

Reverse: † OF † HAVERFORDWEST

\* B \*  
W S

The 'R' is the 'signature' of the die maker David Ramage of London and these tokens of William Bateman are the only Welsh ones to be signed.

(cont)

17 (cont)

They date from before 1662 when Ramage died.

There are three varieties of the token of which this is 49b (Boon, 1973, 106). It differs from 49a in having a different obverse (with a wider shield of the Mercer's Arms) but the reverse die is the same. No 49c, though closely resembling 49a and b, is from two different dies. William Bateman was Sherriff in 1679, Mayor in 1692 and a Quaker.

On the whole tokens seldom travel far from their place of origin and only a few Welsh tokens have travelled as far as this one. Private tradesman's issues such as this which strayed from their place of origin were sometimes locally counterstruck but this did not occur in this case

- |    |   |                                  |
|----|---|----------------------------------|
| 18 | Token, perhaps AD 1813-1815<br>This piece is so badly worn and dented that a precise identification is impossible. The edge and beaded border suggest that it is the product of the die-sinker Halliday who struck pieces for Birmingham and Staffordshire. The token is badly dented and appears to have been used as a sort of anvil for some other process | Cantilupe Street<br>Unstratified |
|----|---|----------------------------------|

(cont)

19	Token - Imitation spade guinea	Bewell House
	Obverse: GEORGIUS III DEI GRATIA	Layer 22: Period 8 (M3.B3-B4)
	Reverse: B BROS REX F D CLXX HOCKLEY BIRM	19th century

The token has a small hole drilled in the top. B Bros refers to Bancroft Brothers of 170 Hockley Hill, Birmingham (Hawkins, 1963). John and Alfred Bancroft were fancy chain makers and took over their business from Collins Brothers in 1872. In 1896 they are also listed as die-sinkers. They are last listed in c1910

#### CATALOGUE OF ROMAN COINS FOUND IN HEREFORD

This list of coins is taken from notes in the Transactions of the Woolhope Naturalists' Field Club and from Hereford Museum Records. The grid reference and, where appropriate, the museum accession number, are shown in brackets. Coins have been included only when their find spot is known and where the description suggests that they were lost in antiquity rather than being part of a modern collection. The descriptions of the coins are by M Rhodes of Hereford City Museums.

1	Silver <u>denarius</u> of Hadrian (AD 117-138)	Found about 1921, close to King's Acre, near to the north side of the main road (A438) in newly dug nursery land about halfway between the last of the
	Obverse: IMP CAESAR TRAIAN HADRIANVS AVG Head, Laureate R.	
	Reverse: PM TRP COS III Fortuna standing left with rudder in	

(cont)

- 1 (cont)
- right hand and  
cornucopiae in left  
leaning on column
- nursery buildings and  
the turn for Credenhill  
(SO 472 416)
- Date: AD 122  
(Watkins, 1921, 64-5)
- 2 Constantine I (AD 308-337)  
Urbs Roma  
Reverse: Wolf with twins
- From a trench behind  
and to the east of  
Coningsby Hospital,  
a few yards NW of the  
school canteen built  
in 1953  
(SO 512 404)
- Date: AD 330  
(Cohen, 1953, 144-5)
- 3 Claudius II (AD 268-270) AE  
Obverse: (IMP) CLAUD? AUG  
Round radiate head  
of Emperor L.
- Reverse: CONSECRATIO round  
altar (consecration  
issue, usually  
minted after the  
emperor's death)
- Mint: Probably Rome
- Inventory 3-10  
A small hoard dug up  
in the garden of  
40 Merryhill Crescent,  
Hunderton, Hereford,  
in 1953  
(SO 502 388)  
(7420)
- 4 Tetricus I (AD 270-273) AE  
Obverse: Illegible but the  
type of Tetricus with  
radiate head to L.
- Reverse: Illegible, standing  
figure

- 5 Theodora? (AD 292-326) AE (7420) (cont)  
 Obverse: Undecipherable  
 Reverse: PIETAS ROMANA
- 6 Constantine I (AD 307-337) AE  
 Obverse: CONSTANTINOPOLIS  
 round head of  
 Constantine  
 Reverse: Victory on prow  
 Mint: Constantinople
- 7 Constantine II (AD 337-340) as  
 Caesar (c. AD 335) AE  
 Obverse: CONSTANTINVS IVN NOBC  
 round bust of Caesar  
 Reverse: GLORIA EXERCITVS  
 round soldiers and  
 standards  
 Mint: I Lugdunum (Lyons)  
 SLC
- 8 Constans (AD 337-350) AE  
 Obverse: CONSTANS PF AVG  
 round bust of Emperor  
 facing R.  
 Reverse: VICTORIA D D AVGG QNN  
 round winged figure of  
 Victory  
 Mint: I Trier  
 TRS
- 9 Constantius II (AD 337-361) AE  
 Obverse: CONSTANTINUS AVG  
 round bust of Emperor  
 facing R.

(cont)

- 9 (cont) (7420) (cont)
- Reverse: GLORIA EXERCITVS  
round soldiers and  
standards
- Mint: I Trier  
TRS
- 10 Arcadius (AD 395-408) AE
- Obverse: ARC(AD) - - ?  
round bust of Emperor  
facing R.
- Reverse: Unidentified figure
- 11 Constantius II (AD 337-361) AE Found at the site of  
Obverse: CONSTANTINVS PF AVG the Crematorium in  
round head of Emperor in 1958  
facing R. (SO 496 400)
- Reverse: GLORIA EXERCITVS (6879)  
round two legionaries  
with standards
- Mint: Uncertain
- 12 Tetricus II (AD 270-273) Found at the Cremator-  
Antoninianus ium Garden, about  
Obverse: C PIV ESV TETRICVS 1960  
CAES (SO 496 400)  
radiate, bust to R (7250)
- Reverse: PAX AVG round Pax  
standing L. holding  
olive branch in R.  
hand and sceptre in L.

13	Constantine I (AD 307-337) AE	Found in the area of
	Obverse: IMP CONSTANTINVS PF AVG and bust R. draped and laureate	Newton Farm, Hereford, probably in 1959 (7117)
	Reverse: SOLI INVICTO COMITI Sol standing L, R, arm raised, L. arm holding statue of Victory. Reverse blundered, no mint mark legible	

Comment

Several other Roman coins have been found in Hereford but have doubtful find spots and are not included in this list.

The coins listed can be separated into two groups, from north and south of the river. Three of those from the north of the river are from the western extremities of the town, two of them coming from the new Crematorium site on a gravel terrace close to the Wye. The main group south of the Wye is the hoard of eight coins from the garden of 40 Merryhill Crescent. The hoard appears to be genuine and lost in antiquity; the date range from cAD 268 to cAD 400 is compatible with other local hoards, as are the various mint marks, although the coins of Arcadius (no 9) is late for Herefordshire Roman coins. The site is on a rise close to the Abergavenny road and the railway.

# **PART TWO**

## **THE CERAMIC FINDS**

# **PART TWO**

## **THE CERAMIC FINDS**

**BY A G VINCE**

### **INTRODUCTION**

This report presents the conclusions from a study of the pottery, roof furniture, brick, floor tile, and burnt clay found in Hereford. The material from all the sites recorded in volumes 1 and 2 was examined and compared with ceramics from previous excavations in the city. Casual finds from the city and its immediate environs which have, over a period of time, been deposited in the City Museum were also examined and several important examples are published for the first time in the following pages. The pottery, which ranges in date from the 10th to the 18th century, has been arranged in a type series which is illustrated by the better examples of each particular ware. Material from other excavations in Herefordshire and the surrounding counties has also been examined both to help confirm the chronology and to attempt to establish sources for the local wares. However, the Hereford sequence is mainly dated by the stratigraphical evidence in the city and the material from more distant sources has only been used for comparative purposes and to indicate the distribution of wares.

The report is arranged in four sections; the finds of pottery, the ceramic building materials, the floor tiles and the fired daub and clay objects. Within each section the finds are described in groups based on petrological analysis to show the different sources which have supplied Hereford. In all, 40 separate fabrics have been identified which vary in frequency

from a single example to several hundreds. Most fabrics occur only in pottery but some are also found in roof furniture and floor tiles.

The pottery has been divided into fabrics on the basis of the type and proportion of rock and mineral inclusions. Seven main groups of fabrics are defined on the basis of their suggested places of origin. Groups A-D contain fabrics which are similar to each other and are locally or regionally produced, while groups E, F, and G are respectively wares from other parts of the British Isles, wares from the Continent, and wares not readily assigned to a source. Each main group is divided according to the different fabrics and further subdivided where pottery of one fabric comes from a number of sources or where pottery from the same source area has distinct variations in fabric. Each group or subgroup is described in a self-contained section which contains a brief description of the fabric, the types of vessel produced, the date and frequency of occurrence of the fabric within the city, and any relevant information on distribution or dating outside Hereford. Each section is completed, where appropriate, with an inventory of published sherds.

Stratified groups of pottery from the various excavations recorded in volumes 1 and 2 are also included in the microfiche and represent a part of the evidence on which the type series is based. The inventories in the type series are cross-referenced to the pottery in these stratified groups.

The excavation reports have included an inventory of published sherds from each period in each excavation and therefore ensure that all drawn examples from each period and context can be identified. Where appropriate, in the excavation inventories, a numerical breakdown of all sherds into fabric types is given for a particular period.

One part of the result of this study is shown diagrammatically (Fig 28:M6.A6). The suggested date range for each of the main fabrics is given, together with an indication of the relative frequency of each type.

#### METHOD OF ANALYSIS

In general, the differences between fabrics are differences in the type of rock and mineral inclusions, rather than their shape or quantity. It is necessary to be able to identify the common types of inclusion and this is done by using a combination of several simple methods. These include the re-action with 10% Hydrochloric acid, the hardness (measured with a steel needle and thumb nail), the colour measured by Munsell Soil Color Chart (Munsell, 1958), and the structure (either examined by eye or normally using a x10 or x20 binocular microscope). The Munsell colour is given where appropriate. In some cases the various types of inclusions are more easily identified if a section of the pot is ground smooth with carborundum powder and photomicrographs of a section of sherds treated in this manner are included in the printed text (Figs 66-70).

The following table indicates the fabric according to the identification method used.

#### INCLUSIONS

##### THOSE WHICH REACT WITH ACID

TYPE OF INCLUSION	DESCRIPTION	FABRIC
Concretionary limestone	Mottled, rounded grains without any internal structure	A2

Cont

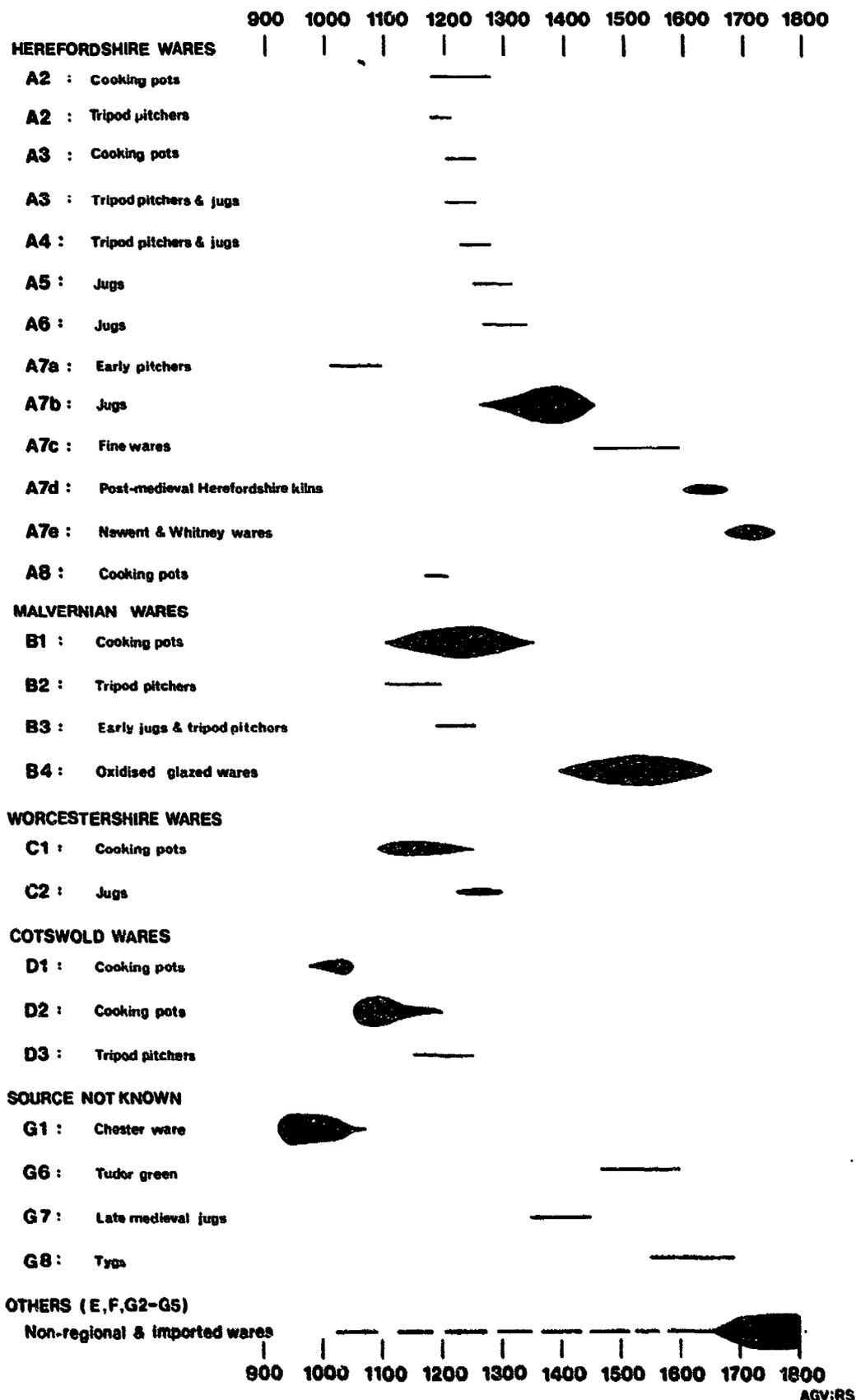


Fig 28 The suggested date range and relative frequency of each of the main pottery fabrics

Cont

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TYPE OF INCLUSION	DESCRIPTION	FABRIC
Fossiliferous limestone	Curved, plate-like fragments, sometimes in a limestone matrix	A4 (rare) Group D G2
Oolitic limestone	Aggregates of spherical ooliths or individual ooliths consisting of concentric spheres of calcium carbonate	Group D

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THOSE WHICH DO NOT REACT WITH ACID AND ARE VERY HARD AND COLOURLESS

---

TYPE OF INCLUSION	DESCRIPTION	FABRIC
Rounded quartz	Clear or milky grains with no internal structure	Present in all fabrics except A7a. Common in A3, groups B & C and some fabrics of groups E, F, & G
Angular quartz	Fine sand and silt	Group A
Acid igneous rock	Composite angular grains including quartz and felspar, cloudy, white or pink with visible cleavage. Some darker minerals present	Group B. Occasional grains in E4
Sandstones	Composite aggregates, often dark and can usually be crushed with a needle	A2, A3, A4, A5 Occasionally in groups B & C
Siltstones	Similar to sandstones, but finer grained and not visible to the naked eye	A4

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THOSE WHICH DO NOT REACT WITH ACID AND ARE HARD AND COLOURED

TYPE	DESCRIPTION	FABRIC
Mudstone	Dull, hard, smooth grains, often unspherical	A4
Iron ores	Black or brown hard fragments	Can occur in any fabric
White mica	Plate-like fragments varying in size and abundance: Fine shreds, glittering Larger plates	Group A, D2, A8, group B
Black mica	Plate-like fragments	A4, group B, E4, F3

COLOUR, GLAZE AND DECORATION

ATTRIBUTE	DESCRIPTION	FABRIC AND/OR DATE
Clay matrix	White or yellow (colour value 8/-) due to low iron content	D3 and groups E, F, and G
Firing	Incompletely oxidized	All 13th century or earlier fabrics except A7a, E1, and G1
	Completely oxidized	Most later medieval and post-medieval wares
Glaze	Fired to stoneware	F2 and some of E6
	Green-specked glaze	13th-16th century wares
	Salt-glaze	E6 and F2
Decoration	Tin glaze	F (rare) and G5
	Rollerstamp on shoulder	G1
	Rollerstamp on body	A7b, C2
	Painted and plastic-applied slips	13th-15th century jugs
	Slip-trailed decoration	A7d, A7e, E4, E6

The procedure used in Hereford was to sort all sherds in a particular context into those with inclusions reacting with acid, those with very hard inclusions and those without large visible inclusions. At this stage a number of sherds needed cleaning on a fractured edge because they were encrusted with carbonate, soot or panning.

The second stage was to sub-divide these groups on the basis of the inclusion types. The photomicrographs gave an indication of the size, range, and quantity of inclusions in each fabric although there are obviously variations within individual fabrics. A binocular microscope was found essential at this stage to distinguish sandstones from acid igneous rock and to identify the limestones. A few sherds needed to have a section polished to allow comparison of the quantities of inclusions and to examine their internal structure. Sherds which did not fit into the main fabric groups at this stage were recorded as miscellaneous unglazed wares (G3) or miscellaneous glazed wares (G4) and became the subject of further research.

Within each context the number of sherds of each fabric was recorded. Weighing would have been useful because it would have given less importance to residual pottery which was often present as smaller sherds. All the pottery from each site was laid out to record joining sherds, but this was only found to be effective for the Bewell House site where the late garden soils contained pottery sherds which joined those from earlier phases. The type of vessel present was then recorded using the classes outlined in the type series. Only in the 16th and 17th century groups was it found difficult to assign a definite form to most of the body sherds due to the basic similarity in shape between many of the post-medieval pottery forms.

## MUSEUM COLLECTION

Pottery from the museum collection is illustrated in the type series and referenced by the museum accession number. Details of the source of these vessels is given in the following table:

ACCESSION NUMBER	SITE
379	Found during roadworks in 1927 close to the site of St Giles' chapel at the corner of St Owen's Street and Ledbury Road
494/5/6	Found during excavations on the north side of High Street in 1928
755	Found 14 feet deep in a ditch at Maylord Street in 1929
1314	Found in 1926 at the Greyfriars Monastic site.
5604	Found while building the Telephone Exchange at the corner of Church Street and Cathedral Close in 1958
6757	Finds from the Offa Street excavations in 1957 (Norwood, 1957)
7185	Finds from the King's Ditch excavations in 1958 (Heys and Norwood, 1958)
7230	Found during building works at 14-15 St Peter's Street in 1961
7240	Finds from the Blackfriars excavations in 1958 (Butler, 1960)
7430	Found at a rubbish tip on Widemarsh Common in 1961 (probably from Blackfriars)
7437	Found during the building of Thorpe House at the corner of King Street and Broad Street in 1961
8294	Found during rebuilding works at Chave and Jackson's on the east side of Broad Street in 1964
8393	Found during rebuilding works at Chadds in Commercial Street in 1965
8834	Found when building Littlewoods Store in High Street, 1965/66
9400	Finds from excavations at Hereford Castle (Leach, 1971)

Many of the pottery drawings are accompanied by a small segmented circle. The portion shaded gives an indication of the amount of rim or base present and can thus be used to assess the reliability of the drawing, particularly as regards the diameter.

Hand-formed pots have the cross-section drawn with a diagonal shading and wheelthrown pots have the cross-section in solid.

The tables which accompany the pottery drawings enable the sherds to be related to a site context or museum reference. Unstratified sherds from excavations are indicated by u/s in the context column.

Photographs of several pots are included in the printed text. They are indicated in the inventories by an underlined figure number without any microfiche cross-reference. Photomicrographs of the main fabrics are also included in the printed text and are identified in the inventories by p/m before the figure number.

# THE POTTERY

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## GROUP A : HEREFORDSHIRE WARES

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### INTRODUCTION

In this section Herefordshire is taken to include not only the county but also south Shropshire, the southern Marches, and parts of Gloucestershire west of the Severn. This area coincides with the outcrop of the Devonian Old Red Sandstone marl and of the glacial till derived from it (Fig 36). Pottery made from this clay is found in Hereford from the 11th to the 18th centuries, but is not common until the 13th century. A gap in production appears to occur in the late 15th and 16th centuries.

Ten fabric groups have been recognised of which A9 and A10 were apparently used only for ceramic building materials. Fabric A1 is a collective term for the small quantity of Roman 'Severn Valley Ware' found during the excavations and is not described here (Webster, 1976). It may well not originate in the county (eg Fig 51.1 & 5:M7.C3; 52.18:M7.C7; 58.1 & 2:M7.D8).

### Composition

In addition to a visual analysis, fifty thin sections of group A sherds were made, and compared with samples of pottery and clay from various part of the county. Only the post-medieval cups and tygs of fabrics A7c and A7d have clay matrices which are isotropic (opaque to polarised light) indicating that in general the Group A pottery was not highly fired.

Most of the inclusions are less than 0.1mm and are angular. The few larger inclusions are all less than 2.0mm and mainly less than 0.5mm. They are poorly sorted within these size limits except in fabric A5 where a well sorted (c 0.3mm diameter) sand temper is present, and in fabric A8 where most of the inclusions are between 1.0mm and 2.0mm. The grain size gives some evidence of clay preparation since in the four clay samples examined large sandstone fragments were present while within the groups similar fragments are restricted to fabric A10, used only for brick and tile making. If the pottery was made from similar clays, and in all other respects the textures are similar, then these large inclusions must have been removed. Levigation, that is mixing with water to form a slip and allowing the sand and gravel to sink, could not have been used for most fabrics since some scattered large inclusions, which are unlikely to have been deliberately added, are present. However at one post-medieval pottery site, Newent Glasshouse, experimental levigation of a clay sample has shown that the clay occurring on the site could have been used to produce the pottery fabric A7e, but only if it had been levigated beforehand (p/m Fig 66.16 & 17).

Mineral types present in all of the group A fabrics include angular quartz and white mica, both less than 0.1mm and derived from the Old Red Sandstone marl. Other, larger inclusions are mainly of rounded quartz and rounded fragments of various sedimentary rocks, principally greywackes and a few coarser-grained sandstones. Siltstone and mudstone occur, mainly in fabric A4. Concretionary limestone is present in fabric A2 and also in fabric A9 which additionally includes a mixture of sparry calcite and quartz silt. Fossiliferous limestone is only present in one section of fabric A4.

Less common inclusions include black mica, only in fabric A4; large flakes of white mica in fabric A8; felspar, which is present in most sections as small rounded fragments but is a major constituent in fabric A8; fine grained intermediate or basic igneous rocks in fabrics A2, A3, A5, and A8, but only common in fabric A4; and brown, almost opaque chert in fabrics A2, A3, and A4. Iron ore particles in fabrics A2, A6, and A7c are irregular in shape but in fabrics A7a and A9 they are rounded and less than 0.2mm in diameter. Accessory rocks and minerals include garnet in fabric A3; tourmaline in fabrics A3 and A5; zircon in fabric A7b and a fragment of rhyolite in fabric A6.

A few rounded clay pellets are found in the fabrics and large pellets are characteristic of fabric A10, another indication of poor preparation. Brown pellets with a spherical structure and a high quartz and silt content are found in fabric A7b. White clay pellets, some with quartz and mica inclusions are found in fabric A4.

### Discussion

Comparison of the pottery fabrics from Hereford with local clays and pottery from known kiln sites gives some indication of the sources of the Hereford pottery. In those cases where inclusions are common (A2, A3, A4, A5, and A8), it is likely that they were added as tempering since no clay samples containing similar quantities have been found. There is very little difference in the overall range of minerals present but the size, sorting and relative frequency distinguishes each fabric. However, without more work on local sand and gravel composition, the source of these fabrics can only be generally located. Fabric A2 compares well with a sample of local gravel from the Bewell House site, and was probably made close to the city.

Fabric A4 contains inclusions which suggest an origin to the north of the city utilizing the gravels of the rivers Arrow, Lugg, or Teme. Fabric A8 contains some inclusions which may originate in the Malvern Hills but the immediate source is likely to be one of the micaceous, felspathic sandstones of south Herefordshire or the Forest of Dean (Welch and Trotter, 1961, 29). Those fabrics with few or no large inclusions (A6, A7, A9, and A10) cannot be tied to any part of the region by petrology. In the case of the fine textured A7 fabrics, samples from Herefordshire medieval and post-medieval kiln sites which produced this ware have been examined but no distinguishing features found. Some of these fabrics are even finer than the locally occurring clays and must have been produced by levigation.

## **A2 - COOKING POTS, TRIPOD PITCHERS AND JUGS**

### **Fabric**

The inclusions are of limestone, sandstone and quartz sand. There are a few grains over 2.0mm but they are mostly less than 1.0mm, quartz being generally smaller than limestone or sandstone. Most vessels are incompletely oxidized with grey or black cores, although some are reduced. Sooting is frequently found on the lower parts of the body of the cooking pots. Glaze occurs on tripod pitchers and jugs.

### **Typology**

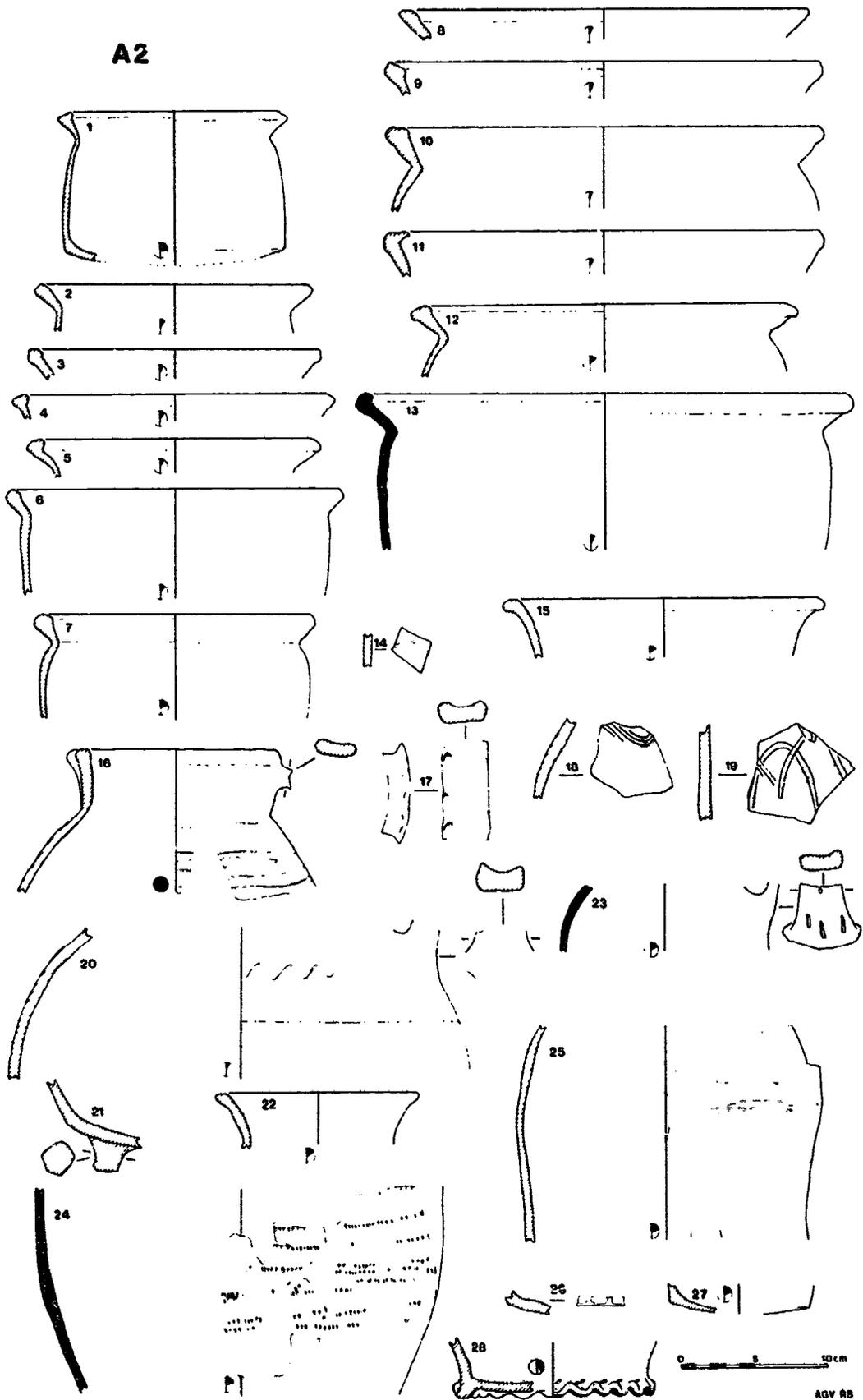
The majority of the sherds of this fabric are from straight sided cooking pots of varying sizes with rim diameter from about 150mm to 350mm (Fig 29.1-14:M6.B3). Tripod pitchers (Fig 29.15-22) and jugs (Fig 29.23-28) have also been found and one possible storage jar. The method of construction

of the cooking pots cannot usually be ascertained, although most pots show signs of being smoothed on a turntable, mainly around the rim. The pots usually have a distinct neck with some thickening at the lip of an everted rim, but the shape of the rim profile varies considerably from the everted form to an inturned, wheelturned rim (Fig 29.13:M6.B3).

Decoration is restricted to a few body sherds with wavy combed bands (Fig 29.14). A few cooking pots have spots of brown glaze but none have any glaze cover. Bases are, without exception, slightly sagging.

The most complete example of a tripod pitcher is the top half of a vessel (Fig 29.16). It appears that these vessels were large globular bodied pots with sagging bases, three circular-sectioned feet and a single handle joining the cylindrical rim near the lip and the body at the shoulder. They are handformed, although the rims may have been smoothed on a turntable. The rims usually join the body at a sharp angle (often a point of breakage) and are usually slightly everted and round lipped (Fig 29.15) or squared off and thickened (Fig 29.16). Handles are usually rectangular sectioned and without decoration but one (Fig 29.17) has two ridges on the top surface decorated with thumb impressions. Spouts are usually pulled out from the rim (Fig 29.16). Decoration is restricted to the top half of the body and is incised either with a round ended tool (Fig 29.16 & 20), or with a comb (Fig 29.18 & 19). A thin olive glaze (5Y 4/4) covers the exterior and often the inside of the rim. The internal limestone inclusions are often heavily leached.

Only a few sherds of jugs have been recognised (Fig 29.23-28). The bodies are either hand formed or wheelthrown and differ from the tripod pitchers in their height to width ratio.



**Fig 29** Herefordshire cooking pots, tripod pitchers and jugs. Fabric A2

M6.B3

Definite jug rims have not been identified although one or two which are classed as tripod pitcher rims may be from jugs (eg Fig 29.22:M6.B3). Strap handles with stabbed decoration have been identified (Fig 29.23). The handle of one (Fig 29.25) was added after horizontal bands of combing had been applied. An alternative body decoration consists of crudely applied roller stamping (Fig 29.24). Bases are sagging with thumbed frills (Fig 29.28) or thumb impressions (Fig 29.25 & 26). The jugs have an olive glaze cover (5Y 4/4).

The only other type of vessel recognised in this fabric is the rim of a possible storage jar with thumb impressions around the rim (Fig 53.4:M7.C9).

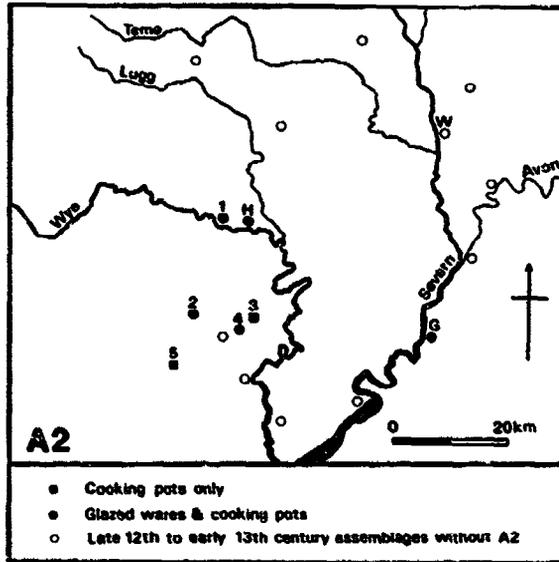
#### Dating and Frequency

This fabric is absent from all 10th-12th century levels and its earliest occurrence was in soil levels at the Brewery (Period 2c: layers 7 and 15) which may be earlier than the extended gravel rampart. It did not occur in other pre-rampart levels. The proportion of this fabric rapidly increased in the immediate post-rampart levels and the greatest frequency was found in the Berrington Street period 3 pits on site 1 where it accounted for 20% by sherd count. The pre-friary soil levels at Blackfriars (pre cAD 1320) contained four sherds which was 3% of the total pottery and occasional sherds were found in later levels, but never more than 2% of the assemblage (Butler, 1960).

At what stage this fabric ceased to be produced is not clear, but it is evident that there was only a short period in which the vessels were common. It is difficult to discern any pattern in the proportion of stratified sherds of different forms but cooking pots and tripod pitchers were by far the most common. There is no evidence for any difference in date for the different forms and the glaze spots found on the cooking pots suggest that they were made together with glazed forms.

#### Distribution

The petrological analysis shows that these vessels could have been made in or around Hereford, and sherds of this fabric have been found on only six sites outside the city (Fig 30:M6.B6). The fabric was not common at any site, and its absence from other early 13th century assemblages in Herefordshire may therefore not be significant given the short life-span.



**Fig 30** The distribution of fabric A2.

- |                         |                            |
|-------------------------|----------------------------|
| H - Hereford            | G - Gloucester             |
| 1 - Breinton            | 2 - Grosmont Castle, Gwent |
| 3 - Tretire             | 4 - Wallingstones          |
| 5 - White Castle, Gwent |                            |

### Published Examples

All sherds have a reduced core and oxidized surfaces unless otherwise stated. Tripod pitchers have internal limestone inclusions leached out.

<u>FIG 29</u> (M 6.B3)	<u>SITE/ MUSEUM ACCESSION NO.</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
1	He76B4*	-	1142	Cooking pot profile
2	Bewell House	4	299	Cooking pot rim
3	Bewell House	4	248	Cooking pot rim
4	Bewell House	7b	161	Cooking pot rim
5	Bewell House	4	134	Cooking pot rim
6	Liberal Club	-	12	Cooking pot rim
7	City Arms	-	F9	Cooking pot rim
8	Bewell House	7b	15	Cooking pot rim
9	Bewell House	3	236	Cooking pot rim
10	Liberal Club	-	17	Cooking pot rim (p/m Fig 66.1)
11	Bewell House	6	183	Cooking pot rim
12	(8294)	-		Cooking pot rim
13	(8393)	-		Cooking pot rim
14	Bewell House	3	260	Decorated cooking pot body sherd
15	Bewell House	5	258	Tripod pitcher rim
16	(5604)	-		Tripod pitcher rim with spiral grooved decoration, pulled spout and traces of a rectangular sectioned handle
17	Bewell House	5	259	Tripod pitcher with a rectangular sectioned handle with finger impressions

(cont)

(cont)

<b>FIG 29 (M 6.B3)</b>	<b>SITE/ MUSEUM ACCESSION NO</b>	<b>PERIOD</b>	<b>CONTEXT</b>	<b>DESCRIPTION</b>
18	Bewell House	4	403	Tripod pitcher body sherd with combed decoration
19	Bewell House	3	400	Tripod pitcher body sherd with combed decoration
20	Bewell House	4	212	Tripod pitcher body sherd with grooved line decoration and the stub of a handle
21	Bewell House	5	206	Tripod pitcher foot
22	Bewell House	3	419 level (Trench B)	Jug or tripod pitcher rim
23	Berrington St 1	-	u/s	Strap handle with stabbed decoration and oxidized outer surface
24	Bewell House	3	245	Lower part of a jug with roller- stamp decoration and an oxidized outer surface (p/m Fig 66.2)
25	City Arms	-	u/s	Thumb frilled base of a jug with horizontal combing and traces of a strap handle with stabbing
26	Bewell House	7a	99	Sagging base
27	Bewell House	3	419	Sagging base with traces of an external glaze and sooting
28	Bewell House	5	319	Sagging base of jug with a thumbed frill

(\*He76B4 was a trial excavation close to Wall Street (Sawle,  
1977))

### Other Illustrated Examples

Fig 51.28:M7.C3

Fig 53.1-8:M7.C9

Fig 54.1:M7.C12

Fig 59.17, 18, 42, 47, 48, 66-9:M7.D10

## **A3- COOKING POTS AND TRIPOD PITCHERS**

### Fabric

The inclusions are of sandstone and quartz and are more common in cooking pots. Only a few grains exceed 1.0mm. The colour varies with the type of vessel.

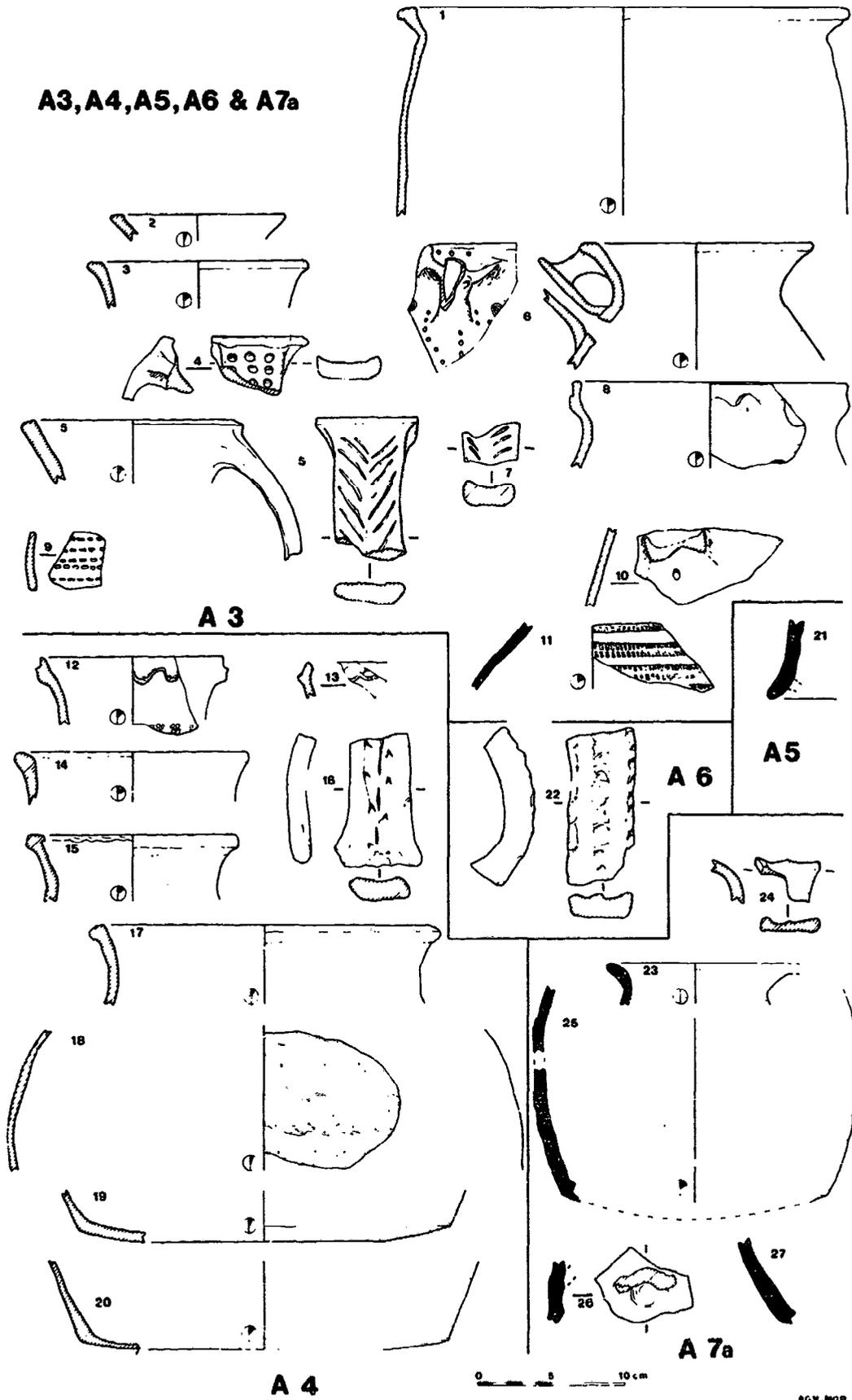
### Typology

Cooking pots occur as straight-sided, hand-formed vessels (Fig 31.1:M6.B10), which are incompletely oxidized but with brown oxidized surfaces (10YR 5/3).

Tripod pitchers in this fabric are globular bodied, hand formed vessels with cylindrical or everted rims (Fig 31.2, 3 & 5). The rectangular handles are decorated with stabbing or slashing (Fig 31.4, 5 & 7), and pulled spouts are normal but one tubular spouted vessel was found (Fig 31.6). Decoration, on the upper part of the body and handle, consists of bands of shallow grooves, incised wavy lines and bands of combing, both straight and wavy. Roller stamping using a rectangular toothed roller is less common (Fig 31.9 & 11). Pitchers are normally incompletely oxidized but have grey to brown oxidized surfaces (10YR 6/1 to 7.5YR 5/4). A transparent olive glaze covers the exterior of the vessels (5Y 4/4 to 5Y 5/6).

Wheelthrown jugs are found (Fig 31.10 & 11), some of which are completely oxidized to a yellowish-red colour (5YR 4/6).

**A3,A4,A5,A6 & A7a**



**Fig 31** Early Herefordshire wares. Fabrics A3 (nos 1-11);  
A4 (nos 12-20); A5 (no 21); A6 (no 22);  
A7a (nos 23-37)

### Dating and Frequency

Cooking pots and tripod pitchers appear together in early 13th century contexts but at a slightly later date than A2 vessels. They usually form less than 4% of the assemblages, but in a pit at the City Arms 31% of the pottery was of fabric A3 (Cooking pots: 14%; tripod pitchers: 17%). Jugs are found in later 13th century contexts but form less than 2% of the assemblages.

### Distribution

Fabric A3 has only been found at Hereford and Breinton (Heys, 1963) and was probably made in or around the city.

### Published Examples

All sherds have a reduced core and oxidized surfaces unless otherwise stated.

<u>FIG 31</u> <u>(M6.B10)</u>	<u>SITE/</u> <u>MUSEUM</u> <u>ACCESSION NO</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
1	City Arms	-	L14	Cooking pot with external sootting (p/m <u>Fig 66.3</u> )
2	Bewell House	5	258	Tripod pitcher rim
3	City Arms	-	F12	Tripod pitcher rim
4	(8294)	-	-	Tripod pitcher rim and stabbed handle (p/m <u>Fig 66.4</u> )
5	(8294)	-	-	Tripod pitcher rim and slashed handle
6	City Arms	-	L2	Tripod pitcher rim and tubular spout with ring and dot stamping and some stabbing from a polygonal faceted tool

(cont)

<u>FIG 31</u> <u>(M6.B10)</u>	<u>SITE/</u> <u>MUSEUM</u> <u>ACCESSION NO</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
7	Bewell House	5	258	Slashed strap handle
8	City Arms	-	L2	Tripod pitcher rim with traces of a pulled spout. Thumb-imprinted rim
9	Bewell House	4	248	Tripod pitcher body sherd with roller-stamped decoration
10	Bewell House	5	312	Jug body sherd with stub of a stabbed handle
11	Berrington St 1	3	P56	Jug body sherd decorated with horizontal bands of roller stamping. Oxidized throughout

Other Illustrated Examples:

Fig 53.9 & 10:M7.C9

Fig 59.70:M7.D10

#### A4 - TRIPOD PITCHERS AND JUGS

Fabric

Rounded grains of sandstone, siltstone, mudstone and white clay pellets occur as inclusions in this fabric and are often between 1.0mm and 2.0mm in diameter. Rounded quartz grains occur which are less than 1.0mm in diameter. White mica is present as fine specks and black mica as flakes up to 1.0mm across.

Typology

A single sherd of a wheelthrown cooking pot was found in period 5 at Bewell House.

n

Tripod pitchers are hand formed vessels, but appear to be less globular than those of fabrics A2 or A3. Rolled out rims are often decorated with thumb bands (Fig 31.12 & 13:M6.B10) A single handle has been found which includes grooved lines and impressions from a pointed tool (Fig 31.16). Spouts are as yet unknown. Decoration, on the upper part of the body, consists of incised horizontal grooves, applied strips, wavy combing (Fig 31.18), and stabbed comb impressions (Fig 31.12). Slight traces of a foot indicate that they were circular in section (Fig 31.20). Vessels are thin-walled with oxidized surfaces and a clear lead glaze, appearing green and orange due to patchy oxidation, is common, while green specked glazes also occur (Fig 31.15, 16, 18 & 19). The two earliest of the stratified sherds are thicker than normal and clear glazed.

#### Dating and Frequency

Apart from two sherds in early 13th century contexts (Bewell House: period 3; City Arms: F12), fabric A4 occurs in the later 13th and 14th centuries and forms 1% or less of the assemblages.

#### Distribution (Fig 32:M6.B14)

Fabric A4 is common only at Richards Castle (Curnow and Thompson, 1969). Other types at the same site share fabric characteristics with A4 and suggest that a source in north Herefordshire or south Shropshire is likely. The petrological analysis reinforces this impression.

#### Published Examples

All sherds have a reduced core and oxidized surfaces unless otherwise stated.

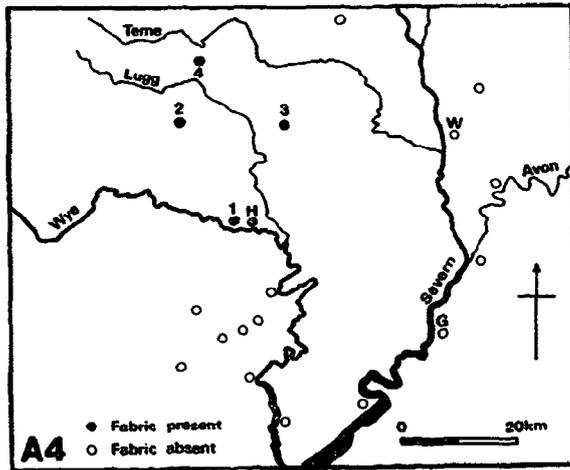


Fig 32 The distribution of fabric A4.

H - Hereford	1 - Breinton
2 - The Yeld, Pembridge	3 - Hampton Wafer
4 - Richard's Castle	

<b>FIG 31 (M 6.B10)</b>	<b>SITE/ MUSEUM ACCESSION NO</b>	<b>PERIOD CONTEXT</b>		<b>DESCRIPTION</b>
12	(6757)	-	-	Tripod pitcher with roller stamp decoration, and rim with thumb impressions
13	Bewell House	3	419	Tripod pitcher rim with thumb impressions
14	Bewell House	3	419 level (Trench B)	Tripod pitcher rim
15	(9400)	-	-	Tripod pitcher rim*
16	(9400)	-	-	Strap handle decorated with grooved lines and stabbing* (p/m Fig 66.5)
17	(6757)	-	-	Tripod pitcher rim
18	(8834)	-	-	Body sherd, probably of a tripod pitcher, decorated with horizontal bands of wavy combing. Oxidized throughout*
19	Bewell House	6	77	Sagging base*
20	Bewell House	5	258	Sagging base with traces of a foot

\*Copper used in glaze

#### Other Illustrated Examples

Fig 54.2:M 7.C12

### A5 - JUGS

#### Fabric

The clay is tempered with well-sorted sandstone and quartz sand of an average diameter of 0.3mm but with some grains up to 0.7mm.

### Typology

Wheelthrown jugs, some decorated with roller stamping or horizontal incised grooves, are found with sagging thumbed bases (Fig 31.21:M6.B10). The vessels are oxidized and covered with a clear or green specked glaze, and probably have a white slip around the rim. An internally glazed sagging base might be from a cooking pot (Berrington Street site 2, P117, period 4). Ridge tiles also occur in this fabric (M7.D14).

### Dating and Frequency

The fabric occurs first in mid to late 13th century contexts but is present up to the early 15th century, forming 1-2% of the assemblages.

### Distribution

Fabric A5 has only been found at Hereford and Hampton Wafer (Stanford, 1967) and a local source is probable.

### Illustrated Example

<u>FIG 31</u> (M6.B10)	SITE	PERIOD	CONTEXT	DESCRIPTION
21	Bewell House	5	258 and 312	Thumbed jug base, oxidized throughout with copper used in the glaze (p/m <u>Fig 66.6</u> )

## A6-JUGS AND A COSTREL

### Fabric

The inclusions consist mainly of fine angular quartz and white mica with occasional larger grains of rounded quartz.

### Typology

Sherds of this fabric come mainly from wheelthrown jugs decorated with roller stamping and applied self-coloured and white strips. Fragments of a single, clear-glazed costrel, with a narrow neck and applied lug handles, were also found (Fig 57.29:M7.D5).

### Dating and Frequency

A few jug sherds occur in 13th and 14th century contexts up to a maximum of 4% of the assemblages. The costrel is dated to the 17th century and is the only post-medieval vessel found in this fabric.

### Distribution

Similar jug sherds occur at Hampton Wafer (Stanford, 1967), but this fabric could be produced using any local clay with no preparation apart from removing the coarse grits.

### Published Example

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<u>FIG 31</u> <u>(M6.B10)</u>	<u>SITE</u>	<u>DESCRIPTION</u>
22	(6757)	Strap handle with an applied strip down the centre and thumb impressions along the strip and sides. Reduced core and oxidized surface (p/m <u>Fig 66.7</u> ).

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### Other Illustrated Examples:

Fig 54.3:M7.C12

Fig 57.29:M7.D5 (Costrel)

## A7a - EARLY PITCHERS

### Fabric

The pottery has a fine texture with few inclusions larger than 0.1mm. Quartz and white mica predominate but small rounded iron ore fragments and mudstone inclusions up to 2.5mm occur. All the sherds are oxidized to a reddish yellow, strong brown or light brown colour (5YR 6/6, 7.5YR 5/6, and 7.5YR 6/4) except one which has a reduced grey core (10YR 5/1).

### Typology

The few examples of this fabric are all fragments of wheel-thrown pitchers. They include a rolled-out rim (Fig 31.23:M6.B10) and strap handles joining at the lip (Fig 31.23) and at the girth (Fig 31.26). Bases are sagging (Fig 31.25 & 27) and the decoration consists of turned grooves on the shoulder (Fig 31.25). A clear, patchy exterior glaze containing bubbles and clay impurities also appears as drips on the interior of the vessels.

### Dating and Frequency

Sherds of only nine separate vessels have been found in this fabric. Of these, one was found associated with West Midlands early medieval ware (fabric G1) and another with fabric D2 while two more occurred in pre 12th century contexts. The remaining sherds were in the period 2 soil levels at the Brewery or were unstratified. The available evidence suggests that these vessels are an uncommon and hitherto unknown Saxo-Norman glazed ware. There are comparisons both of form and technique with Winchester ware (Biddle and Barclay in Evison et al, 1974, cf Figs 4-6 for shape and size and Fig 4.5 & 6 for method of handle attachment).

### Distribution

One other example is known, a body sherd from a 12th century context at Gloucester (Glos Mus Acc no 57/77, 30 Westgate St). It has been thin-sectioned and has an identical petrology.

### Published Examples

All vessels are oxidized throughout.

<u>FIG 31</u> (M6.B10)	<u>SITE</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
23	City Arms	-	Trench 7	Part of the handle and rim of a pitcher
24	Berrington St 4	2a	861	Pitcher strap handle
25	Brewery	2b	38	Body sherd and base from a pitcher
26	Berrington St 1	-	u/s	Body sherd with a handle stub which has a central thumb impression (p/m <u>Fig 66.8</u> ;
27	(8294)	-	-	Sagging base (p/m <u>Fig 66.9</u> )

### Other Illustrated Examples

Fig 56.2:M 7.D2 (Fig 31.24 above)

Fig 58.25:M 7.D8 (Fig 31.25 above)

### **A7b-LATER WARE**

#### Fabric

This ware is fine-textured with a few small rounded quartz grains, generally less than 0.3mm. White mica is common as

specks and a few sandstone fragments occur. Brown clay pellets are distinctive, being 0.1mm to 3.0mm across. The painted white slip contains angular quartz and white sandstone fragments but no mica.

### Typology

Wheelthrown jugs varying in size and shape from globular (Fig 33.3:M6.C7) to baluster (Fig 33.5) are all present in this fabric. Rims are usually rounded or squared off, sometimes with a slight thickening. Bridge spouts and pulled spouts are found while some vessels are spoutless. Strap handles (Fig 33.1) and rod handles (Fig 33.4, 6 & 7 and Fig 35) are equally common. The strap handles are usually decorated with slashing or stabbing while the rod handles are either plain or have a central knife-cut groove. Decoration, when present, consists of applied strips. Brown firing strips are most common and are of two types, one being a dark coloured clay and the other self coloured with iron ore inclusions. White painted slip occurs (Fig 33.1) but is less common. Most of the strips are used in simple geometrical patterns, but more complex designs exist, including an anthropomorphic jug. Roller-stamped vessels are found but are not common. Bases are mainly thumbed and sagging, but a distinct variation has a shallow raised ring around the base (Fig 33.2). The thumbed frills found in Ham Green and Worcester jugs are not common in this fabric. Flat bases are found, often with acute base angles (Fig 33.4 & 5). A clear or green-specked glaze usually covers the exterior. Some jugs also have a white slip around the rim, dripping down into the interior (Fig 51.23:M7.C3). Some vessels are reduced with a thin oxidized skin on the interior, but completely oxidized vessels are equally common.

Other vessels include wheelthrown cooking pots, some with inturned rims and an internal clear or green-specked glaze (Fig 33.13); wheelthrown dishes with simple rounded rims and

A7b & A7c

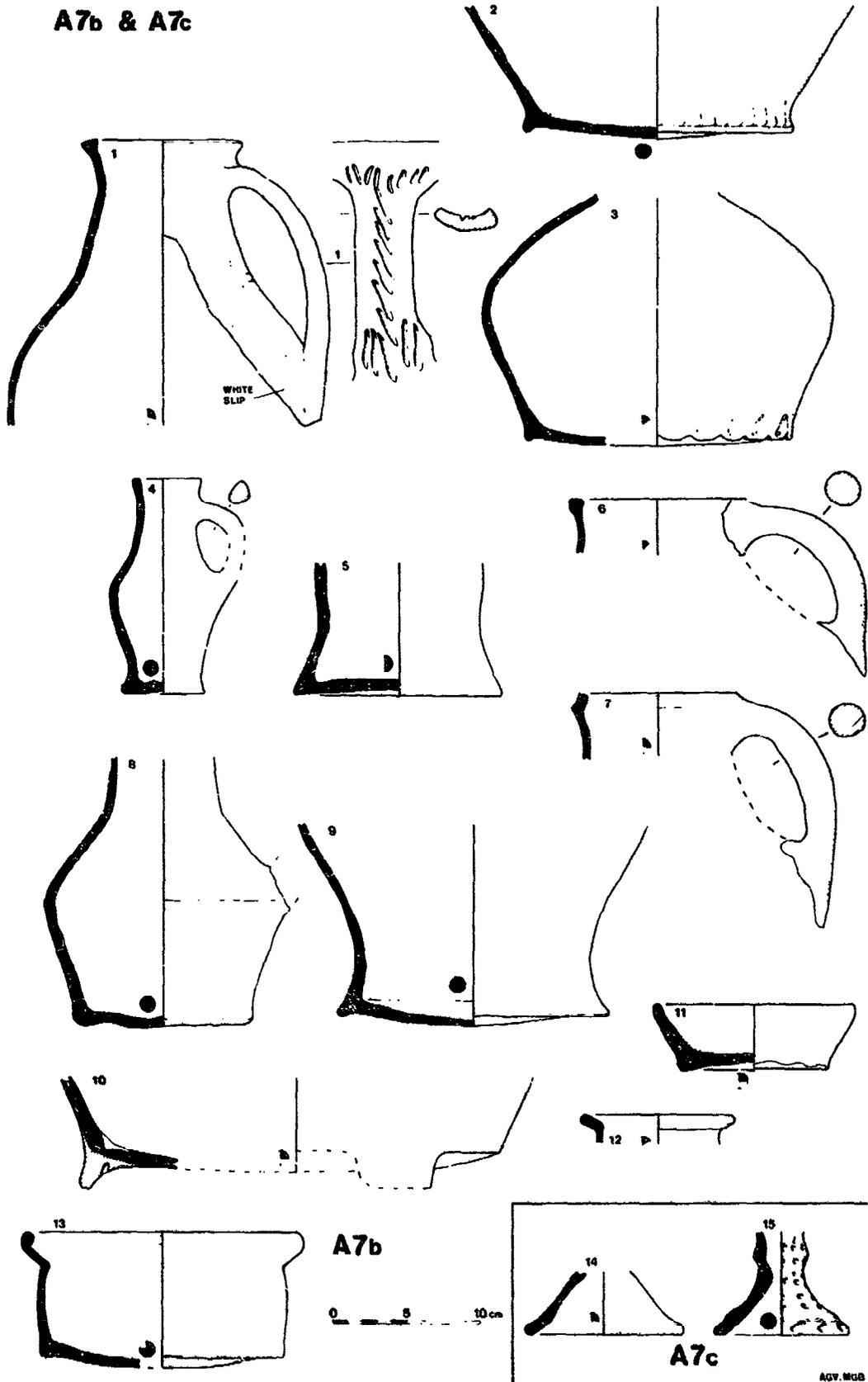


Fig 33 Later Herefordshire wares. Fabrics A7b (nos 1-13); A7c (nos 14 & 15)

flat bases and glazed on the inside of the base (Fig 33.11:M6.C7); and hand-formed baking trays with internally glazed thick bases and short walls which are usually knife-trimmed and often caked with soot but the complete shape is unknown and no handles have been found. A single sherd from an aquamanile has been found. It is part of an animal's leg finished by knife-trimming, glazed and oxidized. In addition part of a tripod base (Fig 33.10) and a small internally glazed pot (Fig 33.12) have been found. Roof furniture also exists in this fabric (M7.E3).

### Dating and Frequency

This fabric is first found in mid 13th century contexts and by the late 13th century forms 15% of assemblages, rising during the 14th century to about 70%. In late 14th and early 15th century contexts the fabric forms not more than 46% of assemblages and it is considered to be residual by the mid 16th century. There is insufficient evidence to allow the relative dating of different types or to propose chronological changes in style.

Jugs form over 95% of the pottery found in this fabric and cooking pots account for up to 3%. The other forms are rarely found.

### Distribution (Fig 34:M6.C9)

It is unlikely that all the pottery in this fabric which has been found in Herefordshire is from one source, although the majority of the Hereford finds may well be so. A late 13th to 14th century dump from a kiln producing this ware has been found at Weobley and in thin-section the fabrics are similar. However, the Weobley pottery includes jugs with features which are absent or rare at Hereford. Production in Hereford or its suburbs is possible, and a kiln spacer with the impressions of a green glazed jug rim was found close to the Greyfriars Bridge and is now in Hereford Museum (Accn no 7429).

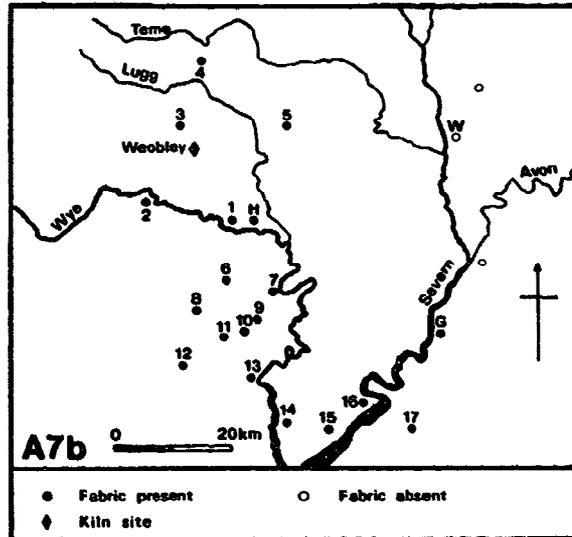


Fig 34 The distribution of fabric A7b

- |   |                                    |
|---|------------------------------------|
| H - Hereford                              | G - Gloucester                     |
| 1 - Breinton                              | 2 - Bredwardine                    |
| 3 - The Yeld, Pembridge                   | 4 - Richard's Castle               |
| 5 - Hampton Wafer                         | 6 - Kilpeck                        |
| 7 - Hentland                              | 8 - Grosmont Castle, Gwent         |
| 9 - Tretire                               | 10- Wallingstones                  |
| 11 - Skenfrith Castle, Gwent              | 12- White Castle, Gwent            |
| 13 - Monmouth, Gwent                      | 14- St Briavels Castle, Glos       |
| 15 - Whitecross Manor,<br>Lydney, Glos.   | 16- Bledisloe Tump,<br>Awre, Glos. |
| 17 - Frocester Court<br>Roman Villa, Glos |                                    |
- Weobley - known kiln site

Published Examples

<u>FIG 33</u> <u>(M6.C7)</u>	SITE	PERIOD	CONTEXT	DESCRIPTION
1	Berrington St 1	4	P57	Upper part of a jug with green glaze and white strip decoration. Decorated strap handle (p/m <u>Fig 66.10</u> )
2	(8834)	-	-	Side and base of a large jug with a raised rim round the sagging base
3	(8294)	-	-	The lower half of a globular jug with a thumbled base
4	(8294)	-	-	An almost complete small jug ( <u>Fig 35</u> )
5	(8294)	-	-	Base and part of sides of a baluster jug
6	(8834)	-	-	Rod handle and part of the lip of a jug
7	(8834)	-	-	Rod handle and part of the lip of a jug
8	Berrington St 2	4	P125	A jug with the rim and handle missing
9	Berrington St 3	4	P502	The side and base of a large jug
10	(8834)	-	-	Tripod base with internal glaze
11	Berrington St 4	5	759	Part of a simple dish with partial internal glaze

(cont)

(cont)

<u>FIG 33</u> <u>(M 6.C7)</u>	SITE	PERIOD	CONTEXT	DESCRIPTION
12	(8834)	-	-	Part of a small, internally glazed vessel
13	Berrington St 3	4	P502	An almost complete cooking pot with a thin glaze cover inside the base. The rim is everted with an inturned lip

#### Other Illustrated Examples

Fig 51.23:M7.C3

Fig 54.4-13:M7.C12

### **A7c - FINE WARES**

#### Fabric

The inclusions of angular quartz and white mica occur in lower quantities than in other group A fabrics. Iron ore fragments up to 0.5mm are found along with small rounded clay pellets.

#### Typology

Cups are known only from small sherds and a single complete vessel (Fig 57.1:M7.D5). This latter is globular-bodied with a flaring rim and three oval sectioned handles. The base is flat with an acute angle, but fragments with foot ring bases occur in the same context (Fig 57.3 & 4). The complete vessel has a green-specked glaze inside and out but other fragments have a clear internal and external glaze. All are oxidized.

Fragments of two wheelthrown vessels finished with knife trimming, one having impressed decoration, are interpreted as the bases of salts (Fig 33.14 & 15:M6.C7). They have an external clear brown glaze and are oxidized.

#### Dating and Frequency

A small group was found at Berrington Street site 4 in pit 730 - a mid 16th century context - and formed 3% of the contemporary pottery (Fig 57.1-4:M7.D5).

#### Distribution

This fabric is not found outside Hereford, but the petrology of the salts and brown glazed cups is distinct from that of other sherds of A7 type and these vessels could be from a source outside the immediate area. The complete cup with green-specked glaze appears petrologically more similar to other A7 vessels.

#### Published Examples

<u>FIG 33</u> <u>(M6.C7)</u>	<u>SITE</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
14	City Arms	-	u/s	Base of salt
15	City Arms	-	u/s	Base of salt

#### Other Illustrated Examples

Fig 57.1-4, 32, 33:M7.D5

#### **A7d - 17th CENTURY KILNS**

Few examples of these wares have been found in stratified contexts in Hereford but several kiln sites in Herefordshire are known (Fig 36:M6.C13) and many examples are in the Hereford

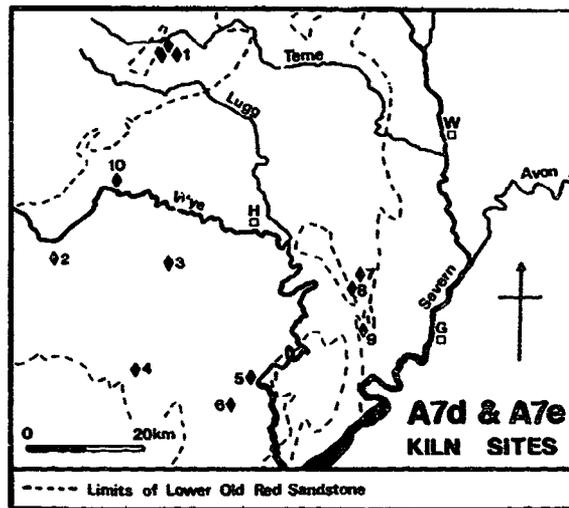


Fig 36 Kilns producing fabrics A7d and A7e

Fabric A7d:

- 1 - Lingen area kilns
- 2 - Whole House Farm, Talgarth, Powys
- 3 - Newcourt Farm, Bacton
- 4 - Abergavenny, Gwent
- 5 - St James House, Monmouth, Gwent
- 6 - Trefaldu, Cwmcarvan, Gwent
- 7 - Haind Park Wood, Dymock, Glos
- 8 - Queen's Wood, Upton Bishop

Fabric A7e:

- 9 - Newent Glasshouse, Glos
- 10 - Whitney on Wye

Museum. The section which follows is included to complete the description of Herefordshire wares but is not fully illustrated.

### Fabric

The many examples in the museum are fine textured with a few rounded quartz inclusions and fragments of sandstone, mainly less than 1.0mm. Angular quartz grains and white mica are common.

### Typology

Only types which are common in Hereford are described. Wheel-thrown internally-glazed jars of various shapes are found, some with vertical sides and others more similar to Malvern Chase large jars (Heys and Norwood, 1958, Fig 3.5, 7, 8, & 9). Wheelthrown internally-glazed conical bowls with a flanged or T-sectioned rim are also common. Tygs are mainly cylindrical vessels decorated with turned grooves and with two or three handles. They have a brown to black internal and external glaze, and are normally high-fired.

### Dating and Frequency

This fabric forms less than 1% of 16th century contexts but becomes common in the 17th century.

### Distribution (Fig 36:M6.C13)

Several kiln sites have been found which produce identical fabrics and, in some cases, identical types. Petrological analysis does not help to distinguish these fabrics and there is more difference between some samples from the same kiln site than between the various sites. This is indicative of the preparation of clay by levigation. There is no evidence at present to show which of the various sources were supplying Hereford

Published Examples

Fig 57.30 & 31:M7.D5

**A7e-NEWENT & WHITNEY WARES**

Fabric

Identical to A7d. See p/m Fig 66.16 and 17 for clay samples and p/m Fig 66.13 for pottery sample.

Typology

The most common forms are wheelthrown, internally-glazed deep bowls similar to flowerpots in shape, (Fig 55.1 & 6:M7.C14) and wheelthrown, slip-trailed plates and bowls.

Dating and Frequency

The various types form up to 72% of late 17th century contexts but less than half of early 18th century groups.

Distribution (Fig 36:M6.C13)

Most of the Hereford pottery of this group is matched by examples from the kiln site at Newent Glasshouse (Vince, 1977). A few sherds from the kiln site at Whitney on Wye are similar in style, and Watkins attributed some Hereford pottery to this kiln (Watkins, 1918, 131). Gloucester and Hereford are the only towns known to have received this pottery in quantity.

Published Examples

Fig 55.1-6:M7.C14

## **A8-COOKING POTS**

### **Fabric**

The fabric contains rounded inclusions of quartz, quartzite, felspar and sandstone, up to 2.0mm across, with some large flakes of white mica.

### **Typology**

This fabric has only been recognised in straight sided cooking pots, usually handmade although some are wheelthrown. The rims are usually everted and the bases sagging. The vessels are usually reduced.

### **Dating and Frequency**

These cooking pots are found occasionally in late 12th and early 13th century contexts but form less than 1% of any assemblage.

### **Distribution (Fig 37:M 6.D3)**

Similar fabrics are widely found in south-west Herefordshire and the surrounding area, but only rarely occur in Hereford itself. A detailed study of the petrology and typology of this fabric at Chepstow suggests that wares from a large number of sources are present (Shoesmith, forthcoming).

### **Published Example**

Fig 53.11:M7.C9

## **A9 & A10**

These fabrics were not apparently used for pottery manufacture.

A9 - Floor tiles (M7.E12)

A10 - Roof furniture and building materials (M7.E5)

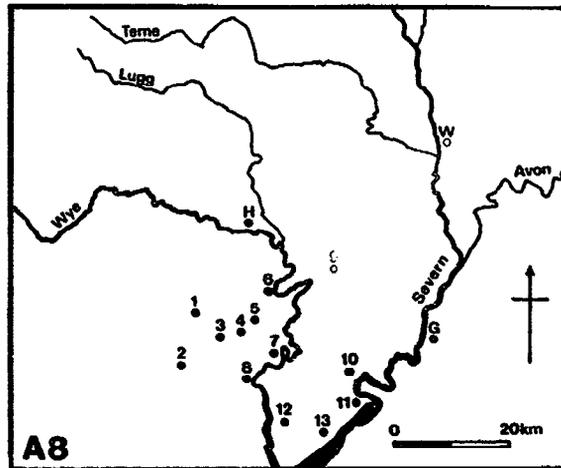


Fig 37 The distribution of fabric A8

- |   |                                   |
|---|-----------------------------------|
| H - Hereford                            | G - Gloucester                    |
| 1 - Grosmont Castle, Gwent              | 2 - White Castle, Gwent           |
| 3 - Skenfrith Castle, Gwent             | 4 - Wallingstones                 |
| 5 - Tretire                             | 6 - Hentland                      |
| 7 - Whitchurch                          | 8 - Monmouth, Gwent               |
| 9 - Much Marcle                         | 10 - Little Dean Camp,<br>Glos.   |
| 11 - Bledisloe Tump, Awre,<br>Glos.     | 12 - St Briavels Castle,<br>Glos. |
| 13 - Whitecross Manor,<br>Lydney, Glos. |                                   |

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## **GROUP B : MALVERNIAN WARES**

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### **INTRODUCTION**

One of the most prolific pottery fabrics found in the medieval period contains angular fragments of acid igneous rocks which can be shown to originate in the Malvern Hills. This is the only normal source of acid igneous rocks in the region although occasional erratics from the Lake District are found in the fluvio-glacial sands and gravels of the West Midlands.

Analysis of forty thin sections of Malvernian wares from sites throughout the region has shown that there are significant differences in the petrology of the sherds (Vince in Peacock, 1977, 257-305). Four fabrics are recognised in the Hereford material, fabrics B1 to B4, and samples of each have been examined in thin section and compared with a series of clay samples taken from various localities in the Malvern Chase area.

### **Composition**

Clay samples from the area contain, in general, a lower quantity of inclusions than fabrics B1 to B3 but a similar amount to B4. The comparison between some of the clay samples and some of the late and post-medieval pottery is impressive and demonstrates that much of the later pottery was made from untempered and uncleaned clay. Most of the clay samples contained at least some angular Malvernian rock. Scattered angular quartz was present in the matrix of all the clay samples and potsherds but was less frequent than in fabrics of group A. White mica was very rare, being found in one clay sample only, but black mica and various ferromagnesian minerals, derived from the Malvernian rock, were present in small quantities in several of the clay samples. Sandstone fragments were found in clay samples and

potsherds, and could be divided into two types, rounded small fragments with a siliceous matrix and angular fragments without visible cement. Rounded quartz was scattered in the clay samples with the exception of samples from the filling of the Poolbrook valley which contained both a high quantity of rounded quartz and also quartz silt.

### Discussion

Only two geological deposits which include clay occur in the Malvern Chase area, the Keuper Marl and the alluvial clay alongside the River Severn. The alluvial clay contains a very high proportion of quartz silt and is not similar to any of the fabrics found at Hereford, although it was used in the 17th century and later for brickmaking. The Keuper Marl in a number of exposures is dense, blocky, and slightly calcareous, and could not have been used for potting. Only where the marl has been weathered or redeposited does it form a suitable clay. The presence of burnt-out root holes and other organic material in the potsherds indicates that superficial clays were used. Over much of the area of Malvern Chase the marl is covered by a capping of gravel. At the foot of the Malvern Hills this gravel consists almost entirely of angular Malvernian rock fragments and their constituent minerals. Towards the River Severn this material is replaced by rounded quartz and angular Malvernian rock.

The proportion of rounded quartz to Malvernian rock varies between the four fabrics; B1 having the lowest quantity of rounded quartz and the highest quantity of Malvernian rock, whilst B3 has the highest quantity of rounded quartz and very little Malvernian rock. Fabric B4 has less inclusions than the other three fabrics but like B3, it contains a high proportion of rounded quartz to Malvernian rock.

The evidence obtained by studying the local geology of the Malvern Chase suggests that the 12th and 13th century cooking pots were produced closer to the Malvern Hills than the remaining types, although as such small distances are involved it is quite possible that the pottery was not produced at the clay pit nor need the tempering material and the clay be from precisely the same area. Several areas of the Chase can be discounted in any search for the source of the potting clay including probably all those areas covered by a thick gravel capping. The redeposited marl found in the numerous small valleys which dissect the Chase can also be discounted since it contains too high a proportion of quartz silt. The clay must therefore have been obtained from the valley sides and, since only the superficial weathered marl is suitable for potting, the pits dug to obtain this clay were probably very shallow.

It is apparent that Malvern Chase supported a pottery industry from the 12th century through to the middle of the 17th century. In the 12th century cooking pots (B1) were the major product but glazed tripod pitchers (B2) were also made, probably at a separate site. Cooking pots remained the major product throughout the 13th century although tripod pitchers (B3) were produced and later in the century wheelthrown jug (B4) production started. Glazed vessels became the major product in the 14th century although these vessels did not enter Hereford in any quantity until the early 15th century. These later glazed wares were probably produced from the local clay without special preparation in contrast to the contemporary pottery made in Herefordshire (A7) which was probably levigated.

## **B1-COOKING POTS**

### **Fabric**

The most common inclusions consist of large, angular fragments of igneous rock up to c 4.0mm across which form up to 10% by volume of the pot. Rounded quartz up to 1.4mm is also common (4% by volume). Other large inclusions, sometimes over 1.0mm across, include rounded sandstones and metamorphic rocks. Small fragments of rounded chert, clay pellets, biotite and hornblende occur, while opaque iron ore and angular quartz, both less than 0.1mm are visible in thin section. The vessels are usually black or grey throughout, due to reduction and the presence of carbon within the fabric.

### **Typology**

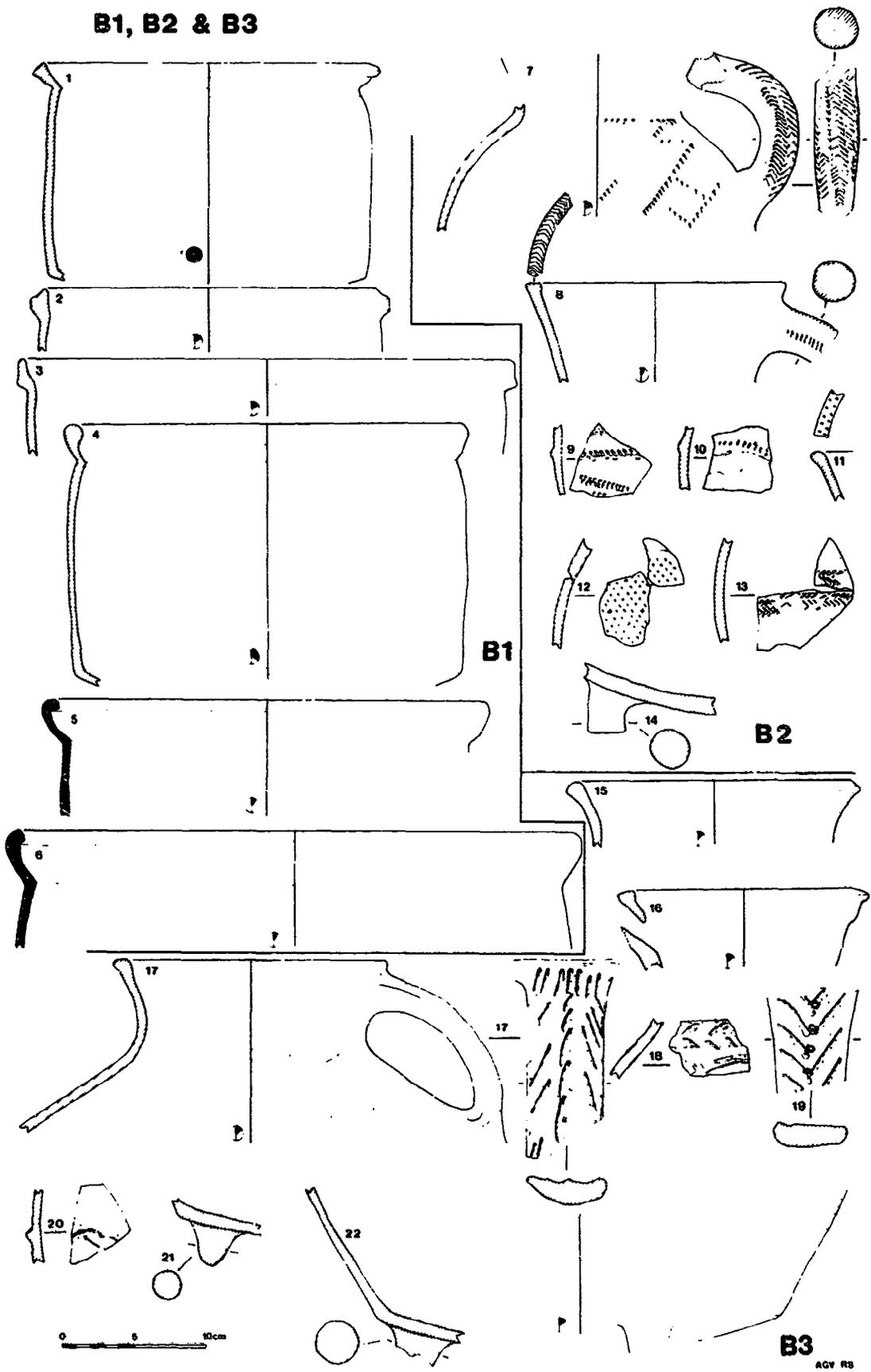
The earliest 12th century vessels are thin-walled, irregularly hand-formed and roughly cylindrical cooking pots (Fig 38.1:M 6.D8 and Fig 39). Rims are usually everted and angular in profile while a few have a cordon just below the rim (Fig 38.2 & 3). Very little finishing is apparent.

The late 12th to early 13th century pots are similar, although the vessels tend to become slightly larger and thicker walled with smoother profiles (Fig 53.12, 17, 18, & 20:M 7.C9). The late 13th century vessels are rare in Hereford but those which occur include vessels with inturned rims (Fig 38.4). 14th and early 15th century vessels are wheelthrown and usually shallower than their earlier counterparts (Fig 38.5 & 6). Both reduced and oxidized pots are found. (Curfews and 'Bee Hive bases' have been recorded elsewhere in this fabric but do not appear at Hereford).

### **Dating and Frequency**

B1 vessels occur first in early 12th century groups forming 1% of assemblages, but later in the 12th century groups include

**B1, B2 & B3**



**Fig 38** Early Malvernian wares. Fabric B1 (nos 1-6); B2 (nos 7-14); B3 (nos 15-22)

up to 20% of the fabric. Between the late 12th and the early 13th century the proportion rises from 44% to 77% and from this level gradually falls to 50% in the late 13th century, 25% in the 14th century, and 12% in the late 14th to early 15th century. B1 pots found in later contexts are certainly residual.

### Distribution

In the area around Hereford the 12th century B1 pots are only found at Breinton (Heys, 1963). By the 13th century they are found at several Herefordshire sites but only with a low frequency except at Hampton Wafer (Stanford, 1967) and Much Marcle (personal observation). They are not found at Bredwardine until the 14th century (Shoemith, pers comm).

### Published Examples

All vessels are reduced and are externally sooted unless otherwise stated.

<u>FIG 38</u> (M6.D8)	SITE	PERIOD	CONTEXT	DESCRIPTION
1	Berrington St 2	3	P103	Straight sided cooking pot complete except for the base (Fig 39)
2	City Arms	-	u/s	Straight sided cooking pot with a cordoned rim
3	City Arms	-	L19	Straight sided cooking pot (p/m Fig 67.1)
4	Berrington St 1	3	P56	Straight sided cooking pot (p/m Fig 67.2)

(cont)

(cont)

<u>FIG 38</u> (M6.D8)	SITE	PERIOD	CONTEXT	DESCRIPTION
5	Berrington St 2	4	P125	Straight sided cooking pot with oxidized surfaces and an infolded rim
6	Berrington St 2	5	P108	Straight sided cooking pot with oxidized surfaces and an infolded rim (p/m <u>Fig 67.3</u> )

#### Other Illustrated Examples

Fig 51.10, 19, 22, 24, 26, & 29:M 7.C3

Fig 53.12-27:M 7.C9

Fig 56.11 & 33:M 7.D2

Fig 59.10-16, 36-40, 51-62:M 7.D10

## **B2-TRIPOD PITCHERS**

### Fabric

Rounded grains of quartz, mainly between 0.3mm and 0.5mm, but occasionally up to 0.7mm, are the most common inclusion (13% by volume). Igneous rock fragments up to 2.0mm occur irregularly (up to 4% by volume), and rounded clay pellets up to 0.4mm are also present (2% by volume). Chert (0.25mm) and rounded sandstone fragments up to 1.5mm are sometimes present. Angular quartz up to 0.1mm and iron ore up to 0.2mm are sometimes seen in thin section. Vessels are oxidized from pinkish grey to very dark greyish brown (7.5YR 6/2, 10YR 3/2) with a dark grey or black core.

### Typology

Vessels in this fabric comprise globular bodied tripod pitchers with sagging bases and straight-sided, slightly flaring, flat-topped rims (Fig 38.8:M 6.D8). Handles are circular in cross-section, and are pushed through the body at the rim and shoulder joins (Fig 38.7 & 8). The feet are also circular in cross-section (Fig 38.14). Decoration usually consists of roller stamping and applied clay strips and is normally present on the top half of the body and the top of the rim and handle. Four designs are known; large chevrons (Fig 38.7, 8, & 10), smaller chevrons (Fig 38.13), small diamonds (Fig 38.12) and small rectangles (Fig 38.9). At least two of the chevron decorated vessels found in Hereford were impressed from the same stamp. Vessels are usually large, Fig 38.7 being one of the smallest known. A clear glaze covers most of the exterior parts and the inside of the rim.

### Dating and Frequency

Vessels of this fabric form up to 3% of mid 12th century assemblages and up to 4% later in the century. They are absent from earlier and later contexts.

### Distribution

Apart from Hereford, these vessels have been found only on sites in the Severn Valley within 20km of Malvern Chase.

### Published Examples

All vessels have a reduced core and oxidized surfaces.

<u>FIG 3B</u> <u>(M6.D8)</u>	<u>SITE</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
7	(8294)		-	Tripod pitcher with a chevron roller stamp on a circular section handle and body. This is the same roller stamp as 8 below
8	Berrington St 1	3	P6	Tripod pitcher rim and circular sectioned handle. This piece is decorated with the same roller stamp as 7 above (p/m <u>Fig 67.4</u> )
9	Bewell House	1	416	Body sherd with roller stamped decoration over an applied strip
10	Bewell House	3	400	A body sherd with roller stamped decoration over an applied strip
11	Bewell House	4	248	Tripod pitcher rim with traces of an applied tubular spout, with roller stamp decoration on top of the rim
12	Bewell House	4	248	A body sherd with roller stamp decoration (p/m <u>Fig 67.5</u> )
13	Berrington St 1	3	P6	A body sherd with roller stamp decoration
14	Berrington St 1	3	P6	A tripod pitcher base and circular foot (p/m <u>Fig 67.6</u> )

### Other Illustrated Examples

Fig 51.25:M7.C3

Fig 53.28 (Fig 38.8 above), 29 (Fig 38.14 above) & 30:M7.C9

Fig 59.41:M 7.D10

## **B3-TRIPOD PITCHERS AND JUGS**

### Fabric

Rounded quartz up to 0.7mm is the most common inclusion. Rounded fragments of chert and sandstone of the same size also occur as do larger rounded fragments of mudstone and igneous rock (up to 2.0mm). Scattered angular quartz grains and rounded iron ore fragments up to 0.2mm are visible in thin section. Vessels are usually black or grey throughout with patches of oxidation on the surface.

### Typology

Tripod pitchers in this fabric are distinguished from B2 tripod pitchers by having rolled out rims (Fig 38.15 and 17:M6.D8) and straight sided lower bodies (Fig 38.22). Pulled and bridge spouts (Fig 38.16) both occur. The vessels have strap handles decorated with raised strips and incised with stabs and slashes (Fig 38.17 & 19). The feet are circular in cross section (Fig 38.21 & 22). Decoration consists mainly of combing, applied strips and horizontal grooves and is present on the top half of the body. Exteriors are clear glazed.

Jugs are apparently not common but a sherd of this fabric from the Brewery (Fig 59.64:M7.D10) is part of a thumbled base and some body sherds may therefore belong to jugs similar in other respects to the tripod pitchers.

### Dating and Frequency

The fabric first occurs in the early 13th century, contemporary with Ham Green jugs, and is present in middle and later 13th century contexts forming between 1% and 13% of assemblages. It is not found in later contexts.

### Distribution

The fabric has been found in Hereford and Gloucester but has not been recognised elsewhere.

### Published Examples

All vessels have a reduced core and oxidized surfaces.

<u>FIG 38</u> (M6.D8)	SITE	PERIOD	CONTEXT	DESCRIPTION
15	Bewell House	5	290	Tripod pitcher rim (p/m <u>Fig 67.7</u> )
16	(9400)	-	-	Tripod pitcher rim and bridge spout (p/m <u>Fig 67.8</u> )
17	Context uncertain	-	-	Part of pitcher rim and strap handle with a grooved and wavy decoration
18	Bewell House	3	419 level (Area B)	A body sherd with combed and grooved decoration (p/m <u>Fig 67.9</u> )
19	(8294)	-	-	Strap handle decorated with grooves and stabs from a round-ended tool

(cont)

(cont)

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<u>FIG 38</u> <u>(M6.D8)</u>	SITE	PERIOD	CONTEXT	DESCRIPTION
20	Bewell House	5	258	A body sherd with a raised thumbed band decorated with grooves (p/m <u>Fig 67.10</u> )
21	(8294)			Tripod pitcher base and foot (p/m <u>Fig 67.11</u> )
22	(8294)			Tripod pitcher base and foot with a brush-applied glaze

---

Other Illustrated Examples

Fig 59.63-65:M7.D10

**B4-OXIDIZED, GLAZED WARES**

Fabric

The most common inclusion, rounded quartz from 0.1mm to 0.7mm, comprises about 10% by volume. Igneous rock and sandstone fragments of the same size also occur while larger igneous rock fragments, up to 4.0mm across, occasionally occur. Angular quartz grains less than 0.1mm and scattered rounded iron ore fragments up to 0.4mm are visible in thin-section. Almost all the B4 vessels are oxidized but the colour of the body varies, becoming yellow or reddish-yellow with a brown slip in the 17th century.

## Typology

A wide variety of forms are found in this fabric and are, for convenience, split into two groups, hollow wares and flat wares.

### HOLLOW WARES (Fig 40:M6.E3)

Wheelthrown baluster jugs with a tall narrow profile and simple rounded rims are found. Stabbed strap handles are often similar in size to those on globular or bulbous jugs and give no indication of the height of the vessels. Bases are either flat, with an acute angle, or sagging with a raised band. The external glaze is clear or green specked.

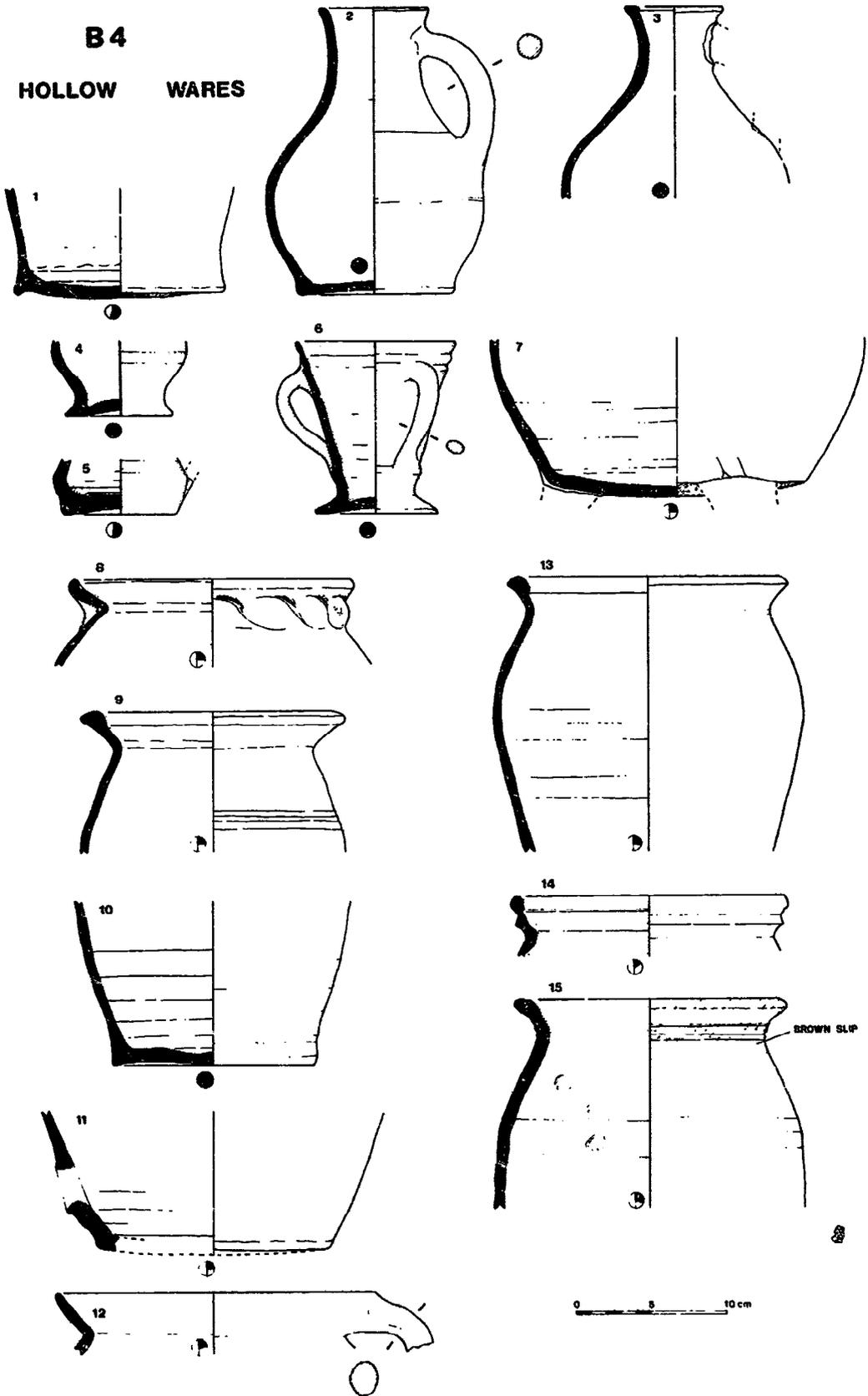
Wheelthrown bulbous jugs have tall, cylindrical or slightly flared rims (Fig 54.14:M7.C12) which are either rounded (Fig 40.2 and Fig 41) or flattened and slightly thickened (Fig 40.3).

A few pulled spouts occur but many vessels are spoutless. Handles are either rods (typical of the 14th to 15th century vessels) or undecorated straps (present throughout the 14th to 17th centuries). Bases are either flat or sagging, sometimes with a raised band (Fig 40.1). The decoration is usually restricted to turned grooves (Fig 54.14:M7.C12) although applied white or brown slip strips are found. These jugs usually have external clear or green specked glaze which is often restricted to a 'bib' below the spout (or opposite the handle on spoutless vessels).

Globular jugs and small jugs in this fabric exist but have not been found at Hereford (Vince in Peacock, 1977, plate 2.2 & 3).

Wheelthrown pipkins (Fig 40.7) are found with an oval-profiled body, everted rim and sagging base. They have three feet and a horizontal handle added at the shoulder. An example from Pershore (Bond and Hunt, 1977) has a pulled spout. Body sherds of pipkins may be confused with those from large jars but the

**B4**  
**HOLLOW WARES**



AGV MGB

**Fig 40** Malvernian glazed hollow wares. Fabric B4

**M6.E3**

latter are narrower in profile. They are sparsely glazed internally and base sherds show some signs of sooting.

Wheelthrown ovoid-bodied large jars are found with flat or slightly sagging bases and an everted rim (Fig 40.8-10, 12-15:M6.E3). The variations in the rim type form a chronological series. The earliest type (late 15th to 16th century) is an everted rim with a thumbled band around the neck, and a thin green specked glaze which is often found around the neck of the vessel and on the interior of the rim (Fig 40.8 and probably Fig 40.12 with a rod handle). A variation of this type occurring from the mid 16th century onwards has a lid-seating and the applied strip is only thumbled at intervals. The glaze is usually thinly applied around the inside of the rim only (Fig 57.9 & 35:M7.D5). Contemporary with the last one, is an identical type but the applied strip is omitted (Fig 40.9 & 13). The 17th century varieties do not conform to these earlier types. The bodies of these later jars (Fig 40.14 & 15) do not show any chronological variation and are usually undecorated except for a band of turned grooves on the shoulder. Glaze is restricted to the rims and the interior of the base and is usually thinly applied. A red or brown slip occurs on some of the examples.

A larger version of the jar was presumably used as a cistern. It is distinguished by a circular bung or spigot-hole in the lower part of the vessel (Fig 40.11). Feet and opposed strap handles are present on an example from Worcester and may be universal.

Lids have not been found at Hereford but were probably made to fit the large jars and cisterns (Vince in Peacock, 1977, Fig 3.5 & 6).

Two or three handled cups are found in this fabric similar to the three handled cup in fabric A7c (Fig 57.1:M7.D5).

The body is similar to that of a small jug but the rim is wider than the body. Bases are of pedestal type with acute angles (Fig 40.4:M6.E3). Handles are of oval section and the interior and exterior glaze is usually green specked.

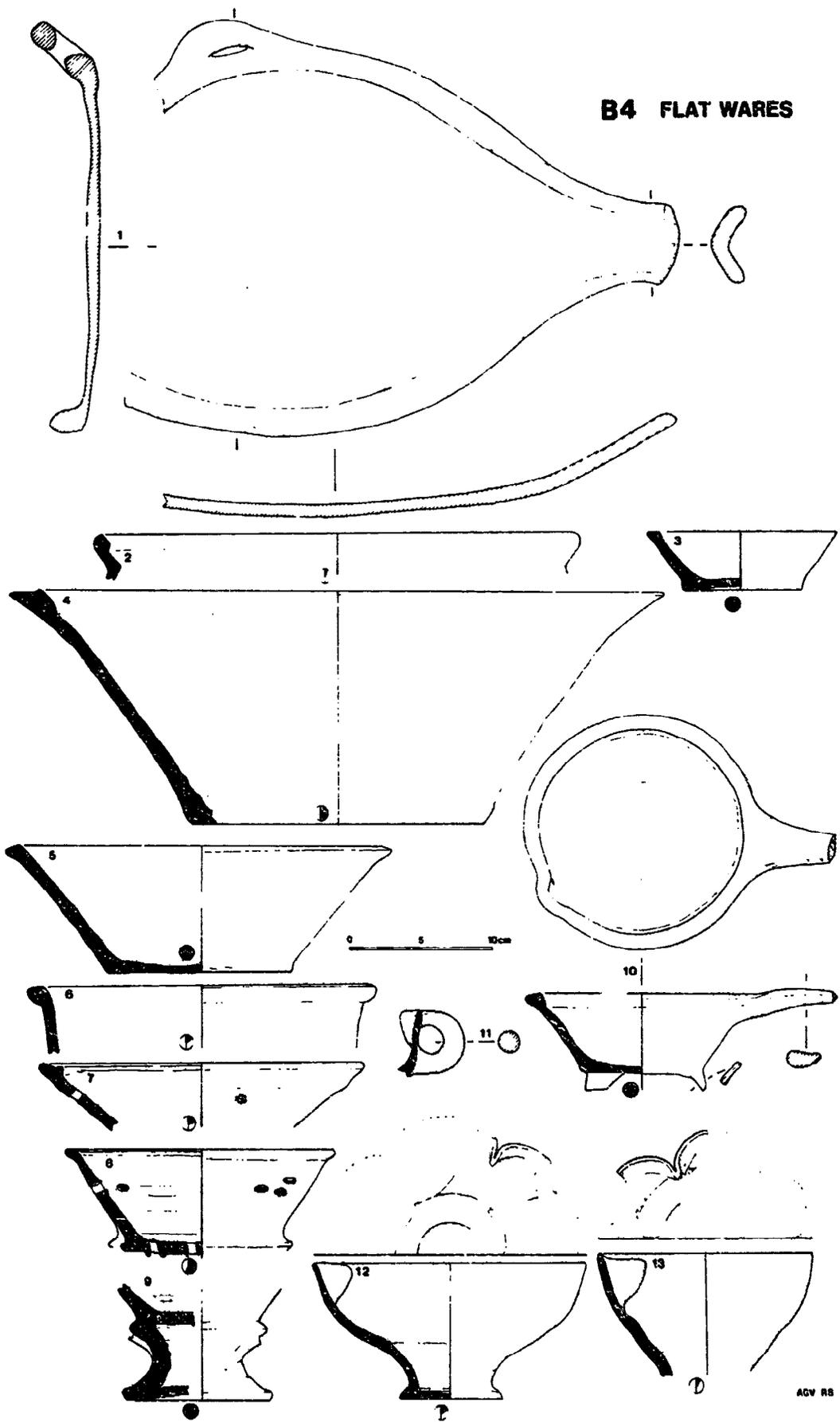
A solitary example of a three handled tyg (Fig 40.6), although similar to many Malvern Chase products in method of production, is distinct in thin section. The fabric contains fine rounded quartz sand and larger inclusions of sandstone and although this does not discount an origin in the Malvern Chase it may have been made elsewhere. A 17th century vertical-sided tankard from Sidbury, Worcester, is of a similar fabric (Vince, 1978). Both vessels are covered, apart from the base, with a dark green glaze.

#### FLAT WARES (Fig 42:M6.E6)

Hand formed and possibly slab built oval baking trays are found with short walls, 30 to 50mm tall, a single horizontal loop handle and the ends of the oval elongated into spouts (Fig 42.1) The underside of the base often has traces of gravel, and vessels are knife-trimmed. A glaze covers the inside of the base and parts of the walls. The exterior surface opposite the handle is often soot covered.

Cooking pots and bowls (Fig 42.2) are similar to fabric B1 cooking pots and probably developed from them. They are wheelthrown with sagging bases dished out after throwing. Some vessels are shorter and wider than their predecessors, while others have the shape of a conical bowl but retain the inturned rim. An internal glaze, either clear or green specked, is present.

**B4 FLAT WARES**



**Fig 42 Malvernian glazed flat wares. Fabric B4**

**M6.B6**

The typical conical bowl has a flange rim formed by infolding (Fig 42.4:M6.E6) and has a diameter of 350 to 450mm. They are glazed on the inside of the base and some way up the walls. Smaller bowls with simple squared-off rims are also common (Fig 42.5) although the very small example (Fig 42.3) is unusual. A few vessels have small lugs (Fig 57.34:M7.D5). One unusual vessel has almost vertical sides and external moulding (Fig 42.6) and, from its fabric and traces of brown slip, is probably of 17th century date.

Wheelthrown, smaller versions of the conical bowl occur which have horizontal handles and three rectangular sectioned feet. These are skillets and the published example (Fig 42.10) has a pulled spout slightly to the left of the centre line, showing that the vessel was made to be used by a right-handed person. Body sherds of this type are often impossible to distinguish from conical bowls. The vessels are internally glazed and some are sooted.

Chafing dishes (Fig 42.7-9 and Fig 57.15) are wheelthrown vessels which were made in two parts. The upper part is identical to the conical bowl but the lower part is a pedestal with an acute angled base (Fig 42.9). The two parts were luted together, two opposed, oval-sectioned handles added, three knobs fixed to the rim, and circular holes pushed through the walls and base of the top half of the vessel. Glaze is restricted to the inside of the top part of the vessel and is sometimes green-specked. A vessel from Sidbury, Worcester, is decorated with white slip 'blobs' and each handle contains pottery rings in imitation of metal vessels.

Lobed cups were wheelthrown as hemispherical cups with pedestal bases, but after throwing the rim was pinched in to form six or seven lobes (Fig 42.12 & 13). A circular-sectioned handle was added from the top of the rim to the top of the cup (Fig 42.11).

A few sherds are completely covered in white slip with a green specked glaze but most of them have a green specked glaze applied directly to the body.

Apart from the large number of body sherds which could belong to a variety of vessels, some were obviously unknown, unreconstructable forms such as Fig 40.5:M6.E3). This is a handled vessel with a thick base and internal and external glaze.

Floor tiles and roof furniture also occur in this fabric (M 7.F1 and M7.E7).

#### Dating and Frequency

The earliest securely stratified occurrence of B4 vessels in Hereford is in a series of pits of late 14th to early 15th century date (Fig 54.14-17:M7.C12). In this assemblage B4 sherds form 13% of the total and are mainly bulbous and baluster jugs. Only a few sherds from cooking pots or bowls came from the same contexts. There are only a few small groups of 15th to 16th century date from Hereford, but by the mid 16th century B4 sherds form 66% of the contemporary ceramics as is shown by the group from Berrington Street site 4, pit 730. In this group 169 sherds were of fabric B4, and of these, but excluding body sherds of unidentifiable type, 70% were jars, (Fig 57.9 & 10:M7.D5); 19% conical bowls (Fig 57.5-8); 7% small jugs or cups (Fig 57.13); 2% cooking pots (probably residual); and there were single examples of a larger jug (Fig 57.12), a skillet (Fig 57.14), and a chafing dish (Fig 57.15). The proportions of one vessel type to another, analysed by sherd count, is inaccurate because some vessel types are more easily recognised than others, and some vessels break into more sherds than others. However, the general pattern, indicated by the group from pit 730, is repeated in other smaller and less well

stratified groups. In this pit assemblage Malvern Chase wares accounted for all the large jars and conical bowls, as well as the only chafing dish and skillet. Only in the range of small jugs and cups were other fabrics found.

The proportion of B4 wares decreases in the 17th century from 23% in the first half of the century (Berrington Street site 1, pit 5) to 3% in a context deposited after AD 1670 (Berrington Street site 4, cellar 701). There is little difference in the range of 17th century vessels as compared with the earlier assemblages and recognisable types from an early 17th century context are nine conical bowls, seven large jars, four jugs or cups, and one chafing dish. The Malvern Chase wares were gradually replaced by products from Herefordshire kilns (fabric A7d) during the late 16th and 17th centuries.

### Distribution

Vessels, mainly jugs, of fabric B4 are found at most later medieval sites in Herefordshire, and become common during the 14th and 15th centuries at the expense of local wares, especially those of fabric A7b. A group of pottery from Wallingstones, dated to the 15th century, contains nine jugs, seven lobed cups, and five conical bowls in fabric B4 (Bridgewater, 1970). A similar variety should be expected from 15th century contexts in Hereford. 16th and 17th century Malvern Chase wares are found over all of the county and as far north as Richards Castle, but the lack of closed groups prevents calculation of the relative proportion of Malvern Chase wares to other fabrics.

<u>FIG 40</u> <u>(M6.E3)</u>	SITE	PERIOD	CONTEXT	DESCRIPTION
1	Berrington St 2	5	P108	A jug base, sagging with a frill
2	(7437)	-	-	A complete jug with a rod handle and no spout* <u>Fig 41</u>
3	(7230)	-	-	A narrow necked jug with traces of a rod handle*
4	Berrington St 3	6	P510	A small jug base with a foot ring*
5	Berrington St 3	6	P510	The base from a small jug with the stub of an oval-sectioned handle*
6	(5604)	-	-	A three handled tyg with dark green-black glaze (p/m <u>Fig 67.14</u> )
7	(8294)	-	-	A pipkin or footed jar with traces of soot on the exterior
8	(8294)	-	-	The rim of a large jar with a thumbed, applied strip below the rim*
9	Berrington St 3	-	u/s	Part of a large jar with a wash of glaze* on the inside of the rim (p/m <u>Fig 67.15</u> )
10	(6757)	-	-	A jar base, unglazed except for specks on the base
11	(6757)	-	-	A cistern base with a bung-hole; unglazed except for specks on the base
12	(8294)	-	-	A large jar rim with a rod handle and traces of glaze on the inside of the rim

\*Copper used in glaze

(cont)

M6.E10

(cont)

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<u>FIG 40</u> (M6.E3)	SITE	PERIOD	CONTEXT	DESCRIPTION
13	(7240)	-	-	Part of a large jar with patches of glaze on the inside of the rim and near the base
14	(6757)	-	-	A large jar rim with glaze on the inside of the rim
15	(5604)	-	-	A large jar rim with a brown slip on the rim, glazed on the inside of the rim (p/m <u>Fig 67.16</u> )

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Other Illustrated Examples

Fig 54.14-17:M7.C12

Fig 57.9-14, 35:M7.D5

Fig 59.44:M7.D10

FLAT WARES

All vessels are oxidized unless otherwise stated

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<u>FIG 42</u> (M6.E6)	SITE	PERIOD	CONTEXT	DESCRIPTION
1	Berrington St 3	6	P510	Part of an oval dish with a horizontal, knife-trimmed loop handle and soot on the opposite side of the dish from the handle
2	Bewell House	7a	99	Cooking pot rim
3	(494)	-	-	Small conical bowl*

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\*Copper used in glaze

(cont)

(cont)

<u>FIG 42</u> <u>(M6.E6)</u>	SITE	PERIOD	CONTEXT	DESCRIPTION
4	(7185)	-	-	A conical bowl with a knife trimmed base
5	(495)	-	-	Conical bowl
6	Berrington St 1	-	u/s	Part of a straight-sided bowl
7	(8294)	-	-	Chafing dish* (p/m <u>Fig 67.12</u> )
8	Bowell House	5	379	Chafing dish*
9	(6757)		-	Chafing dish base with the stubs of two handles. Oxidized except for the inside of the lower section which is reduced*
10	(496)	-	-	Skillet
11	(8834)	-	-	Handle of a lobed cup*
12	(6757)	-	-	Profile of a lobed cup* (p/m <u>Fig 67.13</u> )
13	City Arms	-	u/s	Rim of a lobed cup with a reduced core*

\*Copper used in glaze

Other Illustrated Examples

Fig 57.5-8, 34, 35:M7.D5

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## GROUP C : WORCESTER WARES

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### INTRODUCTION

Pottery, probably made in the area around Worcester between the late 11th and the 13th century, is well represented in Hereford. The earlier cooking pots (fabric C1) are common in the Severn Valley and the area around the lower Warwickshire Avon especially in the collections from Worcester and Droitwich, and some, at least, must have been made by the documented late 12th century Worcester potters (Le Patourel, 1968; Hollings, 1950, 32). Well-made jugs, pots, and baking trays (fabric C2) appear quite suddenly in the region towards the end of the 12th century and, although they never formed a large proportion of the pottery used in Hereford, they are important as being the earliest wheel-thrown vessels found in the city with the exception of the Saxo-Norman and developed Stamford Wares. They were replaced, towards the end of the 13th century, by Malvern Chase wares and locally produced fabrics (A7b). Fabric C3 only exists as floor tiles (M 7.F2).

### C1- COOKING POTS

#### Fabric

Rounded quartz grains are the most common inclusion. They are mainly between 0.1mm and 0.4mm across but can occur up to 1.2mm. A small quantity of rounded sandstone is also present, often over 1.0mm and occasionally up to 4.0mm. In thin-section small quantities of white mica and angular quartz grains up to 0.1mm are visible. The fabric is black or grey-cored with surfaces oxidized to brown (7.5YR 4/2) or yellowish-brown (10YR 5/4).

### Typology

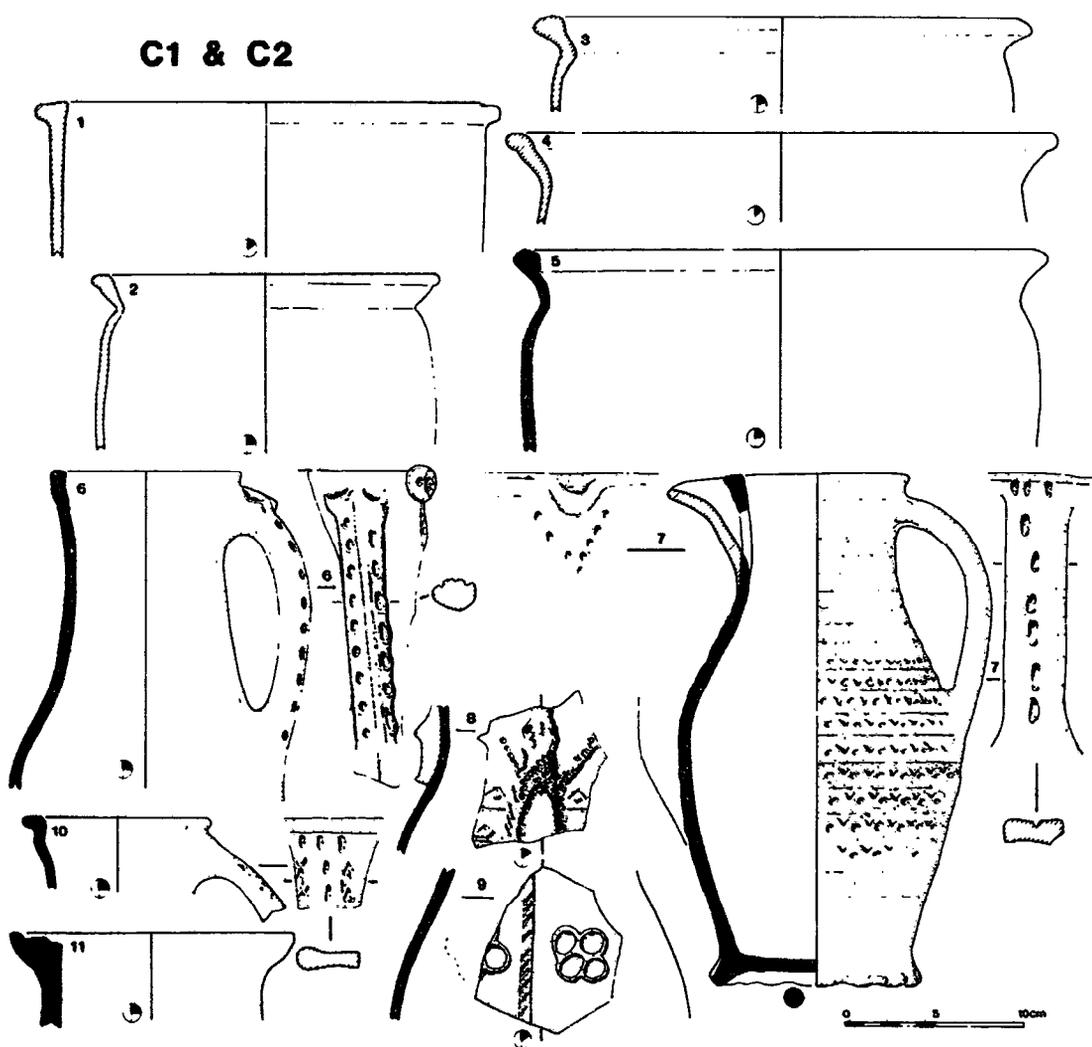
Cylindrical, hand-formed, club-rimmed cooking pots are found probably with sagging bases (Fig 43.1:M 6.F1). The everted-rimmed cooking pots (Fig 43.2-4) are hand-formed vessels with roughly cylindrical bodies. The rims have flat tops or are thickened and the bases are slightly sagging. Most vessels appear to have been smoothed on a turntable but some may be wheelthrown (Fig 43.5).

### Dating and Frequency

The fabric first appears in the late 11th century where it forms about 6% of the assemblages. It increases to 13% of early 12th century assemblages and by the late 12th century it still forms about 12% of the assemblages (Fig 53.31-34:M 7.C9) but the frequency rapidly declines during the early 13th century. Club-rimmed cooking pots are less common throughout than everted-rimmed vessels.

### Distribution

Club-rimmed vessels of similar fabric occur at Worcester, Hampton Wafer (Stanford, 1967, Fig 6.1 & 2), and Richards Castle village bank (Barker, 1970, Fig 27.2). Everted-rimmed vessels have a wider distribution including, apart from sites in the Severn Valley, Breinton and Hampton Wafer. Some, if not all, of this pottery must be the products of the recorded Worcester potters.



**Fig 43** Worcester type wares. Fabrics C1 (nos 1-5);  
C2 (nos 6-11)

### Published Examples

All cooking pots have reduced cores and oxidized external surfaces and are handformed unless otherwise stated.

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<u>FIG 43</u> <u>(M6.F1)</u>	<u>SITE</u>	<u>DESCRIPTION</u>
1	(8393)	Straight-sided cooking pot with a club rim (p/m <u>Fig 68.1</u> )
2	(8294)	Straight-sided cooking pot with an everted, flat-topped rim (p/m <u>Fig 68.2</u> )
3	(8834)	Straight-sided cooking pot with an everted, infolded rim
4	(9400)	Everted cooking pot rim
5	(8294)	Wheelturned, straight-sided cooking pot with an everted, infolded rim (p/m <u>Fig 68.3</u> )

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### Other Illustrated Examples

Fig 51.27:M7.C3

Fig 53.31-34:M7.C9

Fig 56.27:M7.D2

Fig 58.22, 23, 27-29:M7.D8

Fig 59.5-9, 27-35, 43, 49, 50:M7.D10

## **C2 - JUGS**

### Fabric

Rounded quartz grains from 0.1mm to 0.6mm are the most common inclusion but rounded sandstone fragments are present up to 0.8mm. Rare angular quartz grains up to 0.1mm are visible in thin-section. Most vessels are reduced (grey or black) with a thin, light red (2.5YR 6/6) oxidized skin on the interior.

## Typology

Worcester-type jugs are wheelthrown narrow vessels, narrower in profile than most jugs of A7 or B4 fabrics. Rims are usually flat-topped with a slight moulding below the top (Fig 43.6 & 7:M 6.F1) but externally thickened rims are found (Fig 43.10). Thin strap handles are usual, with stabbed decoration along the spine (Fig 43.7 and Fig 44), although rod handles do occur (Fig 43.6). Bridge spouts are typical and can be decorated with stabbing at the body join (Fig 43.7). Decoration consisting of roller-stamped chevrons, squares, rectangles, or diamonds are most frequent, but more complex geometrical designs occur such as raised circles (Fig 43.9) and combinations of elements (Fig 43.8). Applied clay strips and figures (Fig 43.6 & 8) are occasionally found and are made of clay the same colour as the body. The bases are elaborately thumb-frilled (Fig 43.7 and Fig 44) and dished out slightly after throwing. A white slip is often applied around the rim and the exterior of the vessel is completely covered with dark green glaze which is coloured but translucent.

Wheelthrown cooking pots are also found in this fabric and have a thickened rim, often decorated with roller-stamping and a patchy internal and external glaze. Hand-formed trays occur, probably oval in shape and similar to those in fabrics A7 and B4. A cylindrical wheelthrown object with a flange (Fig 43.11) was found which may have been a water pipe (Dunning and Briscoe, 1967).

## Dating and Frequency

Vessels in this fabric are found throughout the 13th century but rarely form more than 3 or 4% of assemblages. They are perhaps most common in the mid 13th century, just before the introduction of fabric A7b.

### Distribution

This fabric has been identified at several sites in Herefordshire, including Hampton Wafer and Wallingstones, but in the first half of the 13th century Worcester jugs had a wide distribution and examples have been found at Shrewsbury, and at Weoley Castle in a context dated pre AD 1260 (Oswald, 1964). This wide distribution reflects the rarity of well-made, wheelthrown pottery throughout the region during this period (Ham Green jugs of the same date are hand-made). None of the vessels produced in this fabric have any typological connection with those produced in fabric C1 and it would seem likely that these vessels, although probably produced in Worcester, were a separate concern from the cooking pot industry.

### Published Examples

<u>FIG 43</u> (M6.F1)	SITE	PERIOD	CONTEXT	DESCRIPTION
6	(8294)	-	-	A jug rim with a circular-sectioned handle, decorated with a groove and stabbing made by a round-ended tool. There are several small applied faces on the rim and vertically applied strips. The jug is oxidized internally and has a white slip on the inside of the neck and rim
7	(755)	-	-	Complete jug ( <u>Fig 44</u> )
8	Context uncertain	-	-	A jug body sherd with applied decoration in a geometrical design

(cont)

(cont)

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<u>FIG 43</u> <u>(M6.F1)</u>	SITE	PERIOD	CONTEXT	DESCRIPTION
9	(8294)	-	-	A jug body sherd with applied strips and applied 'flowers' It is internally oxidized with a white, drip slip
10	Castle Green	3	L8 (Trench 2)	A jug rim and strap handle decorated with stabbing and two bands of roller-stamping
11	(8393)	-	-	A possible water pipe with a flange. The fabric is reduced with a partially oxidized exterior (p/m <u>Fig 68.4</u> )

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Other Illustrated Examples

Fig 59.71 & 72:M 7.D10

**C3** - This fabric only occurs in floor tiles (M 7.F2)

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## GROUP D : COTSWOLD WARES

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### INTRODUCTION

Group D fabrics contain, amongst other inclusions, oolitic limestone. Three main varieties are found which are in use in Hereford from the late 9th century to the early 13th century. Fabric D1 is matched with kiln waste found at Gloucester and fabric D2 is probably also made in the Vale of Gloucester to judge by its petrology and distribution. Fabric D3, however, comes from the Braydon Forest area in North Wiltshire, 90km from Hereford, and it is therefore not surprising that it is never common. All three wares illustrate the use of an overland trade route from Gloucester to Hereford. The frequency of sherds of this group increases from the early 10th century to the late 11th century but then steadily declines.

### D1-COOKING POTS

#### Fabric

Rounded and angular fragments of limestone from 0.2mm to 4.0mm are the most common inclusion. Fragments with brown-stained fossils in a finely crystalline calcite matrix predominate but calcite and sparry oolite also occur. Rounded quartz grains, from 0.1mm to 0.5mm, are present, as are rounded iron ore and brown micaceous mudstone, up to 2.0mm. Calcite, quartz, and iron ore pellets up to 0.2mm are visible in thin section. All vessels in this fabric have a dark brown or dark grey core (7.5YR 3/0 to 7.5YR 4/2) and most have light brown oxidized surfaces (7.5YR 6/4).

### Typology

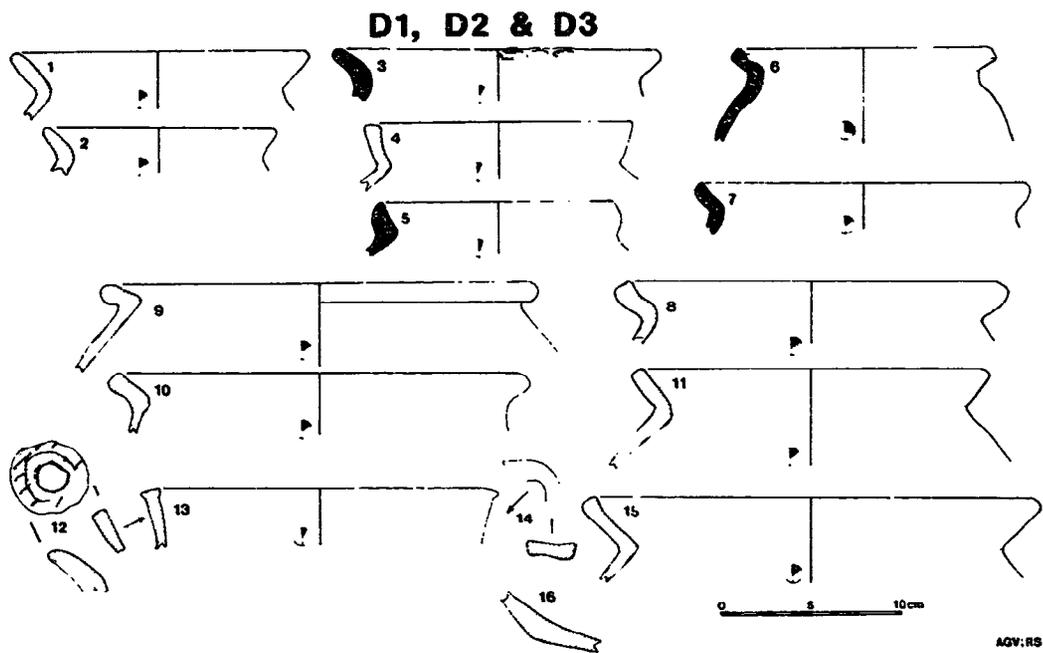
Small globular cooking pots are the only product in this fabric. There is a considerable variation in the method of production and in the rim forms, and three main types have been identified. The first (Fig 45.1 & 2:M6.F8) is hand-formed from a single lump of clay to which the everted rim is added. Bases are sagging with a slight base angle. The second type (Fig 45.7) is wheelthrown with a sharply everted rim and sometimes a vertical neck. The third variation is wheelthrown with a lid seated rim (Fig 45.5 & 6). Other rim forms are found (Fig 45.3 & 4) but are not common. The average diameter is about 170mm. The wheelthrown vessels were apparently produced with flat bases which were then dished out since no wheelthrown base sherds have been found.

### Dating and Frequency

This fabric is found in the earliest pottery producing levels at Hereford, probably beginning in the early 10th century where D1 sherds form about 10% of the total assemblage. They increase in early 11th century contexts to become about 23% of the total assemblage. There is no apparent distinction in date between handmade and wheelthrown vessels and chronological variations in rim form cannot be demonstrated. By the late 11th century D1 sherds account for only 3 or 4% of the total assemblage and the few examples in 12th century contexts are probably residual.

### Distribution

The three main types occur at Gloucester, where they account for up to 100% of the pottery in late Saxon levels. There is some evidence that the handmade cooking pots and possibly the wheelthrown types were made in Gloucester. The only other site where D1 sherds have been found is Sidbury, Worcester, where they again occur in late Saxon contexts.



**Fig 45 Cotswold wares . Fabrics D1 (nos 1-8);  
D2 (nos 9-15); D3 (no 16)**

Published Examples

<u>FIG 45</u> <u>(M6.F8)</u>	<u>SITE</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
1	Berrington St 4	2a	861	Everted cooking pot rim
2	Berrington St 4	2b	844	Rolled out cooking pot rim
3	Berrington St 4	2c	819	Rolled out cooking pot rim with thumbled decoration on the edge
4	Berrington St 1	3	L56	Everted rim of a cooking pot with a globular body (p/m <u>Fig 68.5</u> )
5	Berrington St 4	2b	898	Wheelthrown, lid-seated cooking pot rim
6	Berrington St 4	2b	842	Wheelthrown globular cooking pot with a lid-seated rim (p/m <u>Fig 68.7</u> )
7	Berrington St 2	4	P102	Wheelthrown lid-seated cooking pot rim (p/m <u>Fig 68.6</u> )
8	Bewell House	3	400	Globular cooking pot with a lid-seated rim (p/m <u>Fig 68.8</u> )

Other Illustrated Examples

Fig 52.16, 40, 41:M 7.C7

Fig 56.3 (Fig 45.1 above), 7 (Fig 45.6 above), 20 (Fig 45.2 above), 21, 24 (Fig 45.5 above), 25, 28, 32 (Fig 45.3 above):M 7.D2

Fig 58.13, 26, 31, 32:M 7.D8

Fig 59.3:M 7.D10

## D2-COOKING POTS AND PITCHERS

### Fabric

Most of the inclusions are angular or rounded fragments of unstained oolitic limestone, with ooliths about 0.4mm diameter. They range from 0.1mm to 4.0mm. Some fossil shell fragments are found up to 5.0mm across. Scattered angular and subangular quartz grains up to 4.0mm occur together with a few larger rounded grains. Finely divided calcite, a little quartz, rounded iron ore pellets and muscovite are all visible in thin section. Both cooking pots and pitchers have a grey core but the surfaces vary. Those of the pitchers are redder than those of the cooking pots, indicating a higher firing temperature.

### Typology

Handformed cooking pots are either straight-sided with club rims (Fig 51.9 & 21:M7.C3 and Fig 59.1:M7.D10) or globular-bodied with club rims (Fig 45.9:M6.F8) and everted rims (Fig 45.10 & 11). Flat topped everted rims are sometimes found and these often have finger-tip impressions on the inside of the rim (Fig 58.33:M7.D8; Fig 59.21). The average diameter is about 220mm. All the bases are slightly sagging. The vessels have a grey or dark grey core (7.5YR 4/0, 5/0 or 6/0) and pinkish grey to light brown oxidized surfaces (7.5YR 6/2 to 6/4) which are often sooted. The internal limestone inclusions are not differentially leached.

Hand-formed globular-bodied pitchers are found with everted rims, a tubular spout (Fig 45.12) and a small strap handle (Fig 45.14). Decoration, which is rarely present, takes the form of finger-tip impressions on the rim (Fig 45.12) or circular stamps (Fig 58.14). Bases are sagging and there is no evidence of feet. The vessels are grey cored (7.5YR 5/0) with

red to light red surfaces (2.5YR 5/6 to 6/8). Internal limestone inclusions are preferentially leached possibly due to the vessel being used as a container for acidic liquids.

### Dating and Frequency

This fabric first occurs in late 11th century contexts where it forms about 75% of the pottery found. The proportion gradually decreases throughout the 12th century from about 40% to about 8% at the end of the century. In the early 13th century it is very rare or absent. There is no obvious development in rim form or vessel type and straight-sided and globular-bodied vessels both occur together while spouted pitchers, although comparatively rare, are also found in most of the 11th and 12th century contexts. The flat-topped, everted-rimmed cooking pots have not been found in 11th century contexts.

### Distribution

Pottery in this fabric has been found at several sites in the Severn Valley, and at Gloucester it forms up to 99% of some assemblages. The distribution is widespread and outlying sites receiving this pottery (all confirmed by thin section analysis) include Droitwich and Dublin (information Dr B O'Riordain) in the 11th century, and Chepstow in the 12th century (Shoesmith, forthcoming). Unstratified sherds have been found at Little Dean Camp but no examples other than those from Hereford have been found in Herefordshire. The fabric continues in use at Gloucester into the early 13th century where contexts contain up to 26% of D2 sherds which are identical in typology to the 11th and 12th century forms.

### Published Examples

All vessels have reduced cores and oxidized surfaces and are externally sooted unless otherwise stated.

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<u>FIG 45</u> (M6.F8)	SITE	PERIOD	CONTEXT	DESCRIPTION
9	Berrington St 2	6	P126	Globular cooking pot with a club rim
10	Berrington St 2	3	P123	Everted cooking pt rim (p/m <u>Fig 68.9</u> )
11	City Arms	-	L19	Globular cooking pot with an everted rim. It is reduced throughout
12	Berrington St 2	3	P295	Tubular spout from a pitcher. No external sooting
13	Bewell House	4	330	Pitcher rim
14	Bewell House	5	258	Rectangular section-ed handle from a pitcher
15	(8294)	-	-	Pitcher rim (p/m <u>Fig 68.10</u> )

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### Other Illustrated Examples

Fig 51.9, 11-18, 20, 21:M 7.C3

Fig 53.35, & 36:M 7.C9

Fig 56.12-14, 29-31, 34, 35:M 7.D2

Fig 58.12, 14, 16-21, 24, 30, 33-38:M 7.D8

Fig 59.1, 2, 4, 19-26, 45:M 7.D10

## **D3-TRIPOD PITCHERS**

### **Fabric**

The inclusions are mainly angular or rounded fragments of limestone from 0.2mm to 4.0mm across. They are often iron-stained and oolitic fragments are only a small proportion of the total limestone fragments. The clay matrix contains very little quartz and scattered limestone fragments. The core of the fabric is grey or black with light grey surfaces (7.5YR 7/0).

### **Typology**

The only form found in Hereford is a handmade, globular, tripod pitcher with a sagging base and circular sectioned feet. Vessels are decorated with applied strips and combing.

### **Dating and Frequency**

In Hereford this fabric is found in late 12th and early 13th century contexts and forms up to 4% of the assemblages.

### **Distribution**

Tripod pitchers of this type have a wide distribution but are especially common in Gloucester. Early 12th century examples, with tubular spouts and complex sectioned handles, occur at Bristol (information: M Ponsford) while vessels similar to the Hereford examples occur in South Wales and south-east Ireland in the early 13th century (Lewis, 1978, no 4). No other sites in Herefordshire have produced examples of these pitchers although they are common on sites in the lower Wye valley as far north as Monmouth. A single sherd of a 15th century cistern of this fabric was found at Wallingstones (Bridgewater, 1970) and is paralleled by vessels from the late 15th century kiln site at Minety, N Wilts (Musty, 1973).

Published Example

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<u>FIG 45</u> (M6.F8)	SITE	PERIOD	CONTEXT	DESCRIPTION
16	Bewell House	4	202	Sagging tripod pitcher base

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Other Illustrated Example

Fig 59.74:M7.D10

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## **GROUP E : NON-LOCAL WARES**

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### **INTRODUCTION**

Group E wares are non-local varieties as are groups B, C, and D. Unlike these groups, however, sherds of group E are usually rare in Hereford and nothing like a full range of types, forms, and fabrics is present. Because of the small quantities, the presence or absence of particular types cannot be evaluated.

Group E only contains wares of known origin; wares from unknown sources are considered separately in group G.

- E1a - Red painted Stamford ware
- E1b - Stamford ware
- E2a - Bristol; Ham Green wares
- E2b - Bristol; Redcliffe ware
- E3 - Oxford late medieval wares
- E4 - North Devon wares
- E5 - Surrey/Hampshire wares
- E6 - Staffordshire wares
- E7 - Donyatt ware
- E8 - Winchester ware

Apart from the post-medieval Staffordshire pottery, group E wares are rare in Hereford but they give some indication of the trading patterns during the various periods considered.

### **E1a-RED-PAINTED STAMFORD WARE**

by K Kilmurry

Fragments of a red-painted pitcher were found associated with West Midlands early medieval ware (G1) at Victoria Street in

a late 10th or 11th century context. The vessel was originally thought to have been of French manufacture but neutron activation analysis has shown it to be Stamford ware.

### Fabric

The vessel is an example of Stamford fabric E, part of the E/F range produced on the Castle site. Visually these sherds show a slight 'sparkle' due to tiny angular quartz grains. Under microscopic examination the fabric shows an optically anisotropic matrix of fired clay containing iron grains approximately 0.01mm diameter and ovoid clay pellets up to several millimetres long. The predominant inclusions are mixed angular and sub angular quartz grains, many 0.03mm to 0.07mm across, with some in the range 0.07mm to 0.3mm and a few grains up to 0.6mm across.

The neutron activation analysis has shown that the vessel has the same key elements (caesium, lanthanum and europium) as the Stamford examples (Aspinall, 1977).

### Typology

The single vessel is very fragmentary and represented by twelve small sherds in a poor state of preservation. It appears to be a comparatively small, handled, storage vessel of form 21 (Kilmurry and Mahany, 1977). The wheelmade handle (form 2) shows a slight central ridge on the underside as often occurs when one side of the handle has been folded under and smoothed flush. The handle springs directly from the everted rim and its application has distorted the curvature making measurement of the radius imprecise. However, the size of the vessel can also be approximated from a shallow groove, approximately 2mm wide, running along the shoulder. The pot is very competently wheelthrown with thin, even walls. It was originally pale pink in colour but has been sooted on the exterior surface.

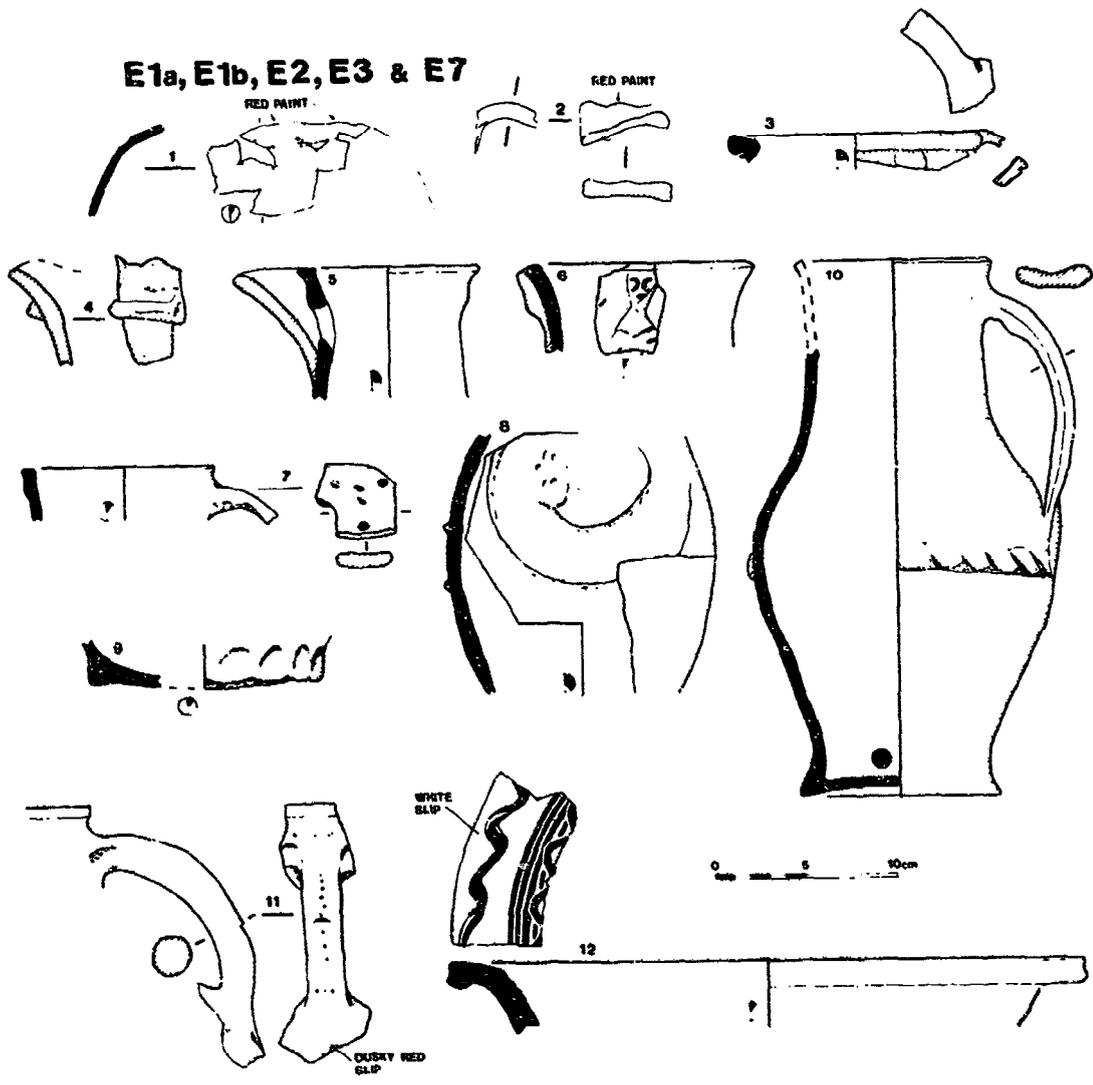
Traces of a thin reddish-brown paint resembling finger streaks appear both down the centre of the handle and on the shoulder.

### Dating and Frequency

Only a minute fraction of the wasters from the Stamford Castle site show traces of red paint. These kiln products are distinctive both in general form and in technical details such as the trefoil spouts, flat bases, and wheelmade handles. The type of paint applied was a very watery slip, unlike the very thick, opaque slip on the Zelzate and Dorestead finds (Van Es and Verwers, 1975), and the very iron-rich paint of Pingsdorf wares. This earliest phase of the Stamford industry is most closely paralleled in northern France (Kilmurry, 1977).

The Stamford Castle site production can be dated to the late 9th to early 10th century both archaeo-magnetically and by a coin of Alfred, probably deposited AD 890-925, which was associated with wasters in a ditch very near the kiln. The occupation material from sites in Stamford suggests that this fabric E/F production did not extend into the second half of the 10th century.

Only a few sherds of this ware have so far been identified outside Stamford. In addition to Hereford, examples are recorded from Gloucester, Worcester, Oxford, Lincoln, and the modern site of Maxey. The only other red-painted Stamford fragments come from Northampton (Williams, 1979, 165). These finds show that Stamford ware had an extended distribution at an early date. This distribution must not be given too much weight, as few examples have been recognised. Nevertheless, the distribution is important in that it indicates some form of contact with Stamford within a specific time range, the late 9th century to mid 10th century.



**Fig 46** Non-local wares. Fabrics E1a (nos 1 & 2); E1b (no 3); E2a (nos 4-9); E3 (no 11); E7 (no 12)

### Published Examples

<u>FIG 46</u> (M6.G4)	SITE	PERIOD	CONTEXT	DESCRIPTION
1	Victoria Street	5c	87 and 22	Body sherds
2	Victoria Street	5c	87 and 22	Part of handle

The full group is illustrated in Fig 51.2-8:M7.C3

### **E1b-STAMFORD WARE**

#### Fabric

The unglazed cooking pots contain angular and sub-angular grains of quartz between 0.04mm and 0.26mm with most grains being at the larger end of the size range. Rounded and sub-rounded iron ore fragments between 0.4mm and 2.0mm also occur. The glazed pitchers also contain quartz but most grains are at the smaller end of the range. Small red/brown rounded pellets  $\leq$  0.06mm occur (p/w Fig 69.1).

#### Typology (Hurst, 1958; Hurst in Wilson, 1976)

Body sherds of wheelthrown unglazed cooking pots with sooted exteriors have been found but in insufficient quantity to discuss the typology. Several sherds were found with a poorly applied clear glaze. One fragment was from a wheelthrown pitcher with a bridge spout (Fig 59.46:M7.D10), and a second included a strap handle joined to the body with a single thumb impression. These are the only examples of such pitchers apart from featureless body sherds.

A single rim sherd was found which comes from a wheelthrown storage jar with an applied thumbled strip below the rim and traces of a strap handle with diamond-shaped roller-stamping on the rim to the handle join. It has a clear glaze with some brown spots (Fig 46.3:M 6.G4). One sherd was found from a developed Stamford ware jug with a green glaze.

### Dating and Frequency

Two sherds of glazed pitchers were associated with G1 (West Midlands early medieval ware) in early 11th century contexts and thirteen glazed sherds were found in later 11th and 12th century contexts, generally forming between 2 and 3% of assemblages. Two glazed sherds were found in late 12th to early 13th century contexts and thirteen glazed sherds came from later 13th or 14th century contexts or were unstratified.

Unglazed cooking pots were found on only two sites, both in the same area of the city. Seven sherds were from the Brewery and six from Bewell House. They occurred in late 12th to early 13th century contexts. One further sherd is in the museum collection (Accession No 8294) together with a single sherd of developed Stamford ware.

All sherds of Stamford ware were examined by K Kilmurry. The glazed wares are of 11th and 12th century types which helps to confirm the dates assigned at Hereford from the stratigraphy. The cooking pots are of 11th century types and were probably residual in their contexts at Hereford. The sherd of developed Stamford ware could be of late 12th to early 13th century date.

### Distribution

No other sites in Herefordshire have produced Stamford ware of any date, the closest findspots being Gloucester, Worcester,

and Droitwich. Both Worcester and Droitwich have produced Stamford ware in higher quantities, relative to other wares, than have Hereford or Gloucester.

Published Example

<u>FIG 46</u> (M6.G4)	SITE	PERIOD	CONTEXT	DESCRIPTION
3	Berrington St 4	2c	816	Rim and part of a handle from a storage jar

Other Illustrated Examples

Fig 56.36 (Fig 46.3 above):M7.D2

Fig 59.46:M7.D10

**E2a-BRISTOL : HAM GREEN WARE**

Fabric

The ware contains a well sorted sand consisting of rounded grains of quartz and smaller quantities of sandstone, calcite, and chert between 0.1mm and 0.4mm. Dense, light-coloured clay pellets, some rounded, are common and range from 0.1mm to 1.0mm. A few dark brown clay pellets of a spherical shape up to 1.0mm diameter occur. Most vessels have a grey or black core with a very pale brown oxidized interior (10YR 7/4) (p/m Fig 69.2)

Typology

The 21 sherds of Ham Green jugs found at Hereford are all hand-formed and come from thumbled-base vessels with strap handles and bridge spouts. The examples illustrated are exactly paralleled by material from the kiln site at Ham Green on the south bank

of the Bristol Avon (Barton, 1963, type B). All of the sherds have an external, clear, light green glaze cover. One rod handle, with diamond roller stamping, is possibly from a tripod pitcher but is not paralleled at the kiln site.

### Dating and Frequency

Sherds of Ham Green jugs have been found in three early 13th century contexts in Hereford where they formed 1% or less of the total assemblage. They were absent from Bewell House period 4 (mid 13th century) and the few sherds found in 14th century or later contexts are probably residual.

### Distribution

Ham Green glazed ware is found at sites in the Severn Valley as far north as Droitwich and at sites in the Wye and Monnow valleys as far north as Skenfrith Castle and Wallingstones. A single sherd comes from Tretize. Unglazed cooking pots, which were also made at Ham Green, occur at Chepstow but are not common further north (Barton, 1967).

### Published Examples

<u>FIG 46</u> (M6.G4)	<u>SITE</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
4	(9400)	-	-	Fragment of the spout of a jug
5	(8294)	-	-	Bridge spout of a jug
6	Bewell House	3	419 level (Trench B)	Part of a jug decorated with a human figure made from clay strips with incised details
7	(9400)	-	-	Rim and part of a strap handle

(cont)

(cont)

<u>FIG 46</u> (M6.G4)	SITE	PERIOD	CONTEXT	DESCRIPTION
8	(8294)	-	-	Part of a jug with an applied decoration over horizontal grooving
9	Bewell House	6	77	Part of a thumbled base

## E2b - BRISTOL : REDCLIFFE WARE

### Fabric

One sherd, probably of this ware, contains rounded quartz grains from 0.1mm to 0.4mm, sandstone fragments of the same size, a few rounded clay pellets c 0.7mm, small rounded iron ore fragments 0.02mm to 0.2mm and some specks, apparently of charcoal, up to 0.2mm.

### Typology

There is a great deal of similarity in fabric and typology between these jugs and other late medieval wares, and certain identification is difficult. The jugs are wheelthrown and have a variety of forms. Handles are usually of strap form and can be undecorated or have incised lines. Both pulled and bridge spouts are found, the latter sometimes having moulded faces. Decoration takes the form of applied strips, often in red firing fabric. Bases are usually flat.

### Dating and Frequency

Only three definite examples of Redcliffe jugs have been found in Hereford but a number of other vessels, including Fig 46.10, may be either of this fabric or from an unknown source (Fabric G7). Two of the definite sherds are unstratified and the third comes from a late 13th or 14th century context.

Distribution (Dawson et al, 1972; Lewis, 1978)

Bristol Redcliffe jugs have not been identified at any other site in Herefordshire but are found at sites along the south Welsh coast and in the Severn Valley as far north as Tewkesbury. Although it is less widely distributed than Ham Green ware the frequency of Bristol Redcliffe ware in rural sites in Avon is higher than the Ham Green products. The industry began some time in the 13th century and ended in the 15th or 16th century.

Published Example

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<u>FIG 46</u> (M6.G4)	SITE	PERIOD	CONTEXT	DESCRIPTION
10	Berrington St 4	5	763	An almost complete jug with a strap handle and a twisted, applied strip around the girth ( <u>Fig 47</u> ) (p/m <u>Fig 69.3</u> )

---

**E3 - OXFORD LATE MEDIEVAL WARES**

Fabric

The wares mainly contain rounded and angular quartz grains from 0.02mm to 0.45mm, but scattered rounded clay pellets 0.04mm to 1.1mm and ovoid in section also occur. The clay matrix in thin-section appears to contain high quantities of mica and a few specks of quartz (p/m Fig 69.4).

### Typology

All sherds found in Hereford are from jugs which were often decorated with applied strips of self-coloured and brown-firing clays, sometimes in combination with square-toothed roller-stamping.

### Dating and Frequency

Only 32 sherds have been found in Hereford of which nine were stratified in late 13th to 14th century contexts; one was in a late 14th to 15th century context and four were from 15th to 16th century contexts. The remainder were unstratified or residual in post medieval levels. In no case do they form more than 1% of an assemblage.

### Distribution

The wares, which were probably produced at several centres in the Thames valley, are common on sites in Oxfordshire and Gloucestershire east of the Cotswold scarp. They have been found only in small quantities west of this area at sites on the Warwickshire Avon including Worcester and also in Gloucestershire at Upton (Rahtz, 1969), Blockley and Gloucester.

### Published Example

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<u>FIG 46</u> <u>(M6.G4)</u>	<u>SITE</u>	<u>DESCRIPTION</u>
11	(8393)	A handle of circular cross-section, possibly from a bi-conical jug with traces of diagonal dusky red strips applied to the body

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## **E4 - NORTH DEVON GRAVEL-TEMPERED & FINE WARES**

(Watkins, 1960)

### **Fabric**

Both gravel-tempered and fine wares contain scattered angular fragments of quartz, felspar and sandstone, about 2.0mm across, in a matrix of baked clay which contains a little white and black mica less than 0.04mm. The gravel-tempered ware contains, in addition, rounded and sub-angular grains of quartz, felspar, and sandstones from 0.4mm to 1.5mm (p/m Fig 69.5 & 6).

### **Typology**

The gravel-tempered wares are all internally glazed and have a reduced core and partially oxidized surfaces. The most common types produced were round flat-bottomed pans and storage jars, but jugs have also been found. The fine wares are well produced vessels with a coating of white slip, either total or on the inside of flat wares and outside of hollow wares. They usually have a complete clear glaze and are oxidized.

### **Dating and Frequency**

North Devon wares are absent from 17th and most early 18th century contexts in Hereford. Most of the stratified examples are from the Bewell House period 8 levels, which contain a large amount of residual 18th century pottery. The frequency cannot be accurately calculated, but it is less than 1% of contemporary wares.

### **Distribution**

These wares occur in the Wye Valley as far north as Monmouth and in the Severn Valley as far north as Droitwich but rarely further inland. At Gloucester, North Devon wares occur in early to middle 18th century levels and rarely in earlier or later levels.

None Illustrated

**E5-SURREY/HAMPSHIRE WARES** (See also fabric G6)  
(Holling, 1971)

Fabric

The most common inclusions are angular and sub-angular grains of quartz from 0.02mm to 0.3mm. A few rounded, reddish-brown inclusions, up to 0.2mm, may be rutile. Muscovite shreds up to 0.1mm occur and a single fragment of rounded oval mudstone 0.9mm long was present in thin-section (p/m Fig 69.7).

Typology, Dating and Frequency

The only sherd found in Hereford was part of a collander or chafing dish with an internal clear yellow glaze. It was found in a late 18th century context (Bewell House, period 7a, pit 99) but was probably residual and of 17th century date.

Distribution

Occasional sherds are found in 17th century contexts in the West Midlands but always form less than 1% of assemblages.

None Illustrated

**E6-STAFFORDSHIRE WARES**

There were several distinct groups produced in the Staffordshire potteries and most of these are represented in Hereford where they are the most common wares during the 18th and early 19th centuries.

### Fabric

The late 17th to early 18th century Staffordshire wares, with the exception of white saltglazed stoneware, are similar in fabric, differing only in the iron content of the clay and the quantity of inclusions. There is little difference between the light-coloured wares and the red-coloured wares, except that inclusions are more common in the latter. All the fabrics contain much very fine quartz silt, mainly less than 0.04mm but sometimes up to 0.1mm. Some of the fabrics contain larger rounded grains, between 0.1mm and 0.4mm. These are mainly of quartz but smaller quantities of sandstone and opaque iron ore occur. Shreds of white mica are sometimes present. Clay pellets, both angular and rounded, from 0.1mm up to 2.0mm, are common. They comprise both light-coloured and red-coloured clay and occur in all wares (p/m Fig 69.8-14).

### Slip and Glaze

Most of the wares have at least one slip and some have several which are superimposed and range in total thickness from 0.2mm to 1.0mm. The slips contain a higher proportion of quartz than the bodies but few grains are over 0.06mm. The brown slips also contain red clay pellets and rounded iron ore fragments. The glazes, which appear black or very dark brown, contain numerous trails of opaque and translucent red euhedral crystals about 0.01mm across, which give them a 'glitter'.

### Typology

LIGHT COLOURED WARES. Hollow wares with clear glaze (Fig 55.11:M7.C14) can be subdivided into plain or sparsely slip-decorated, and slip-decorated wares. Types include ointment jars, perringers, posset pots, chamber pots, mustard pots, honey pots, mugs, and cups. Hollow wares with brown specked and mottled glaze (Fig 55.9 & 10) include the vessel types mentioned

above and also single-handled tankards. Press-moulded wares are mostly clear glazed. Some have an embossed decoration either with a trailed slip or a combed slip where the white slip overlies the brown slip, and others have a combed and trailed slip where the white and/or light brown trailed slip overlies a brown slip. Early stonewares (Fig 55.12-17:M7.C14) are mainly tankards, covered with a white slip or with a brown coloured glaze or both.

**RED-BODIED WARES** Hollow wares are mainly tygs and chamber pots (Fig 55.8). Flat wares are usually plates decorated in one of three styles. The first and simplest is a trailing white slip. The second consists of brown, light brown and white slip trailing over a white slip, 'Toft Style', and the third has a combed slip. Another variety of red-bodied ware consists of hollow wares, often tableware, which are finished by turning.

**VARIEGATED FABRICS** Two varieties are found, the first comprises a crude mixture of the two clay fabrics above. They are always thick-walled vessels, internally black glazed and are mainly straight-sided pots (Fig 55.7) and conical, flanged bowls. The second variety is an agate ware vessel which occurs with a mottled glaze. One example, which was thin-sectioned, contained marbled light and dark brown clays.

**WHITE BODIED WARES** White saltglazed stonewares are common. The example thin-sectioned contained very few inclusions apart from scattered specks of quartz up to 0.6mm. Hollow wares and flat wares are found, both often turned and sometimes decorated with cobalt blue.

Cream, transfer-printed and plain 19th and 20th century wares were not examined.

### Dating and Frequency

Staffordshire wares are first found in Hereford in the early to mid 17th century. These are undecorated, light-coloured wares which form less than 1% of the assemblage. The quantity increases in the last quarter of the 17th century with press-moulded, embossed plates and red-bodied wares forming some 20% of the assemblages. In the early 18th century Staffordshire wares comprise over 50% of assemblages, and by the late 18th to early 19th century they have increased to about 80%, the most common types being combed-slip, press-moulded plates and black glazed vessels with variegated fabrics.

### Distribution

Staffordshire wares are present in quantity at Wigmore Abbey in the early 18th century and other, unstratified, 18th century material is recorded from a number of sites in the county. At Gloucester they form about 8% of late 17th century assemblages and about 25% of early 18th century groups. These proportions are lower than the quantities found at Hereford which is quite surprising considering that the industry had easy access to Gloucester by river while Hereford had to be approached overland. This may have been due to the proximity to Gloucester of the Newent Glasshouse pottery (A7e) which produced several similar forms to the Staffordshire wares. In Worcester, Staffordshire wares are dominant earlier than either at Hereford or Gloucester.

### Published Examples

Fig 55.7-17:M7.C14

## E7 - DONYATT WARE

### Fabric

A sgraffito decorated bowl was examined in thin-section. The fabric contains a large quantity of rounded and angular grains of quartz from 0.02mm to 0.5mm, together with minor quantities of feldspar and sandstone from 0.2mm to 0.5mm. Shreds of muscovite, a few fragments of iron ore and several accessory minerals up to 0.1mm are present.

### Typology, Dating and Frequency

Only two sherds of Donyatt ware have been found in Hereford. One, part of a large storage jar with an applied clay strip around the girth, was found associated with 17th century pottery, and the second, a sgraffito decorated bowl (Fig 46.12:M) was unstratified.

### Distribution

Although production is attested in the Donyatt region of Somerset from the late medieval period into the 19th century it is only in the 17th century that Donyatt wares are found in any quantity north of the Mendips. They are common in the Severn Valley as far north as Tweekesbury but are rare inland.

### Published Example

<u>FIG 46</u> <u>(M6.G4)</u>	<u>SITE</u>	<u>DESCRIPTION</u>
12	(6757)	Part of a sgraffito decorated bowl (p/m <u>Fig 69.15</u> )

## **E8 - WINCHESTER WARE**

### **Fabric**

The two examples examined contain a large quantity of quartz from less than 0.01mm up to 0.3mm. Some of the larger grains are rounded. Scattered rounded iron ore fragments up to 0.1mm and a few shreds of muscovite up to 0.1mm also occur (p/m Fig 69.16).

### **Typology**

The most common form produced was the glazed pitcher, and both sherds found in Hereford are likely to be from this type of vessel.

### **Dating and Frequency**

Both sherds were from late 12th century contexts; one from Castle Green, and the other from Berrington Street (Period 3, pit 295). They are both small glazed sherds, one being from a strap handle. The ware is dated at Winchester from the mid 10th century to the end of the 11th century (Biddle and Barclay, in Evison, Hodges and Hurst, 1974, 137-65).

### **Distribution**

Winchester ware is found at Bath where it is the only common late Saxon glazed ware. It is rare at Gloucester, but has been found on two sites.

None Illustrated

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## GROUP F : IMPORTED WARES

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### INTRODUCTION

This section includes the various wares which have been imported from abroad.

The sub-sections are:

- F1 - French wares
- F2 - German stonewares
- F3 - Spanish imports
- F4 - Oriental porcelain
- F5 - Mediterranean imports

### F1-FRENCH WARES

#### SAINTONGE WARE

##### Fabric

The examples examined contain scattered angular quartz grains up to 0.1mm with a single rounded grain 0.25mm. White mica is common up to 0.1mm. Brown rounded clay pellets up to 0.25mm occur together with angular iron ore up to 0.1mm (p/m Fig 70.1 & 2).

##### Typology, Dating and Frequency

Four sherds of green-glazed Saintonge ware jugs have been found in Hereford: an unstratified example from the Castle excavations (Leach, 1971; Fig 6.26); two sherds from a 14th century soil level (Berrington St 4, Period 5; L720); and one sherd from the medieval ditch fill at Cantilupe Street (Trench M3).

### Distribution

These jugs are found mainly at ports and coastal sites (Butler, 1974) but there are some examples from Gloucester, Worcester (Dunning, 1968), and Skenfrith Castle (Craster, 1967), and two other examples from the county at Wallingstones (Bridgewater, 1970).

None Illustrated.

### MARTINCAMP FLASKS

#### Fabric

The ware contains a large quantity of poorly sorted quartz grains from 0.02mm to 0.3mm. The grains over 0.1mm are sometimes rounded. A few rounded grains of sandstone occur up to 0.6mm, together with pellets of rounded clay up to 0.5mm. Less common are shreds of muscovite about 0.1mm, and rounded grains of iron ore up to 0.1mm. The inclusions occur in an anisotropic matrix of baked clay.

#### Typology, Dating, Frequency and Distribution

Small sherds of thin-walled wheelthrown unglazed costrels made in two halves and high fired occur on several Hereford sites in 17th century and later contexts, forming less than 1% of assemblages. These vessels are fairly common throughout the country but in the county, apart from Hereford, sherds have been found only at Wigmore Abbey, where they occurred in a 17th century context. These flasks were made at Martincamp, in northern France (Hurst, in Neal, 1977, 156).

None Illustrated

## F2-GERMAN STONEWARES

### RAEREN STONEWARE

Two sherds have been found, one at Offa Street (Norwood, 1957) and the other from a late 17th century pit at Berrington Street 4 (Period 6, context 730).

None Illustrated

### COLOGNE STONEWARE

Two sherds of jugs with applied, moulded decoration have been found, one from an early 18th century pit at Bewell House (Period 7a, context 99) and the other from a late 17th century floor level at Berrington Street 4 (Period 6, context 675).

None Illustrated

### FRECHEN STONEWARE

#### Fabric

The examples examined consist of well-sorted rounded and sub-angular quartz from 0.1mm to 0.4mm in a matrix of isotropic clay with a large quantity of fine angular quartz up to 0.04mm and a few rounded iron ore pellets up to 0.06mm. (P/m Fig 70.3 & 4).

#### Typology and Frequency

Twenty-three sherds have been found in Hereford, some stratified in late 16th and 17th century contexts. Jug sherds have been found at Bewell House (Period 6) and Berrington Street 1 (Period 6, P5) (3% of assemblage). One unstratified rim and handle is in the museum (Accession no 5604). A sherd of a bottle with part of an applied heart stamp came from the Liberal Club.

None Illustrated

## WESTERWALD STONEWARE

### Fabric

The examples examined contain angular quartz grains from less than 0.02mm to 0.3mm with a few fragments of angular quartzite (overgrown sandstone?) up to 0.7mm. A few rounded iron ore fragments about 0.02mm in size are in a matrix of anisotropic clay.

### Typology and Frequency

Two types of vessel have been found in Hereford: a cylindrical tankard and a globular bodied jug. Both have cobalt blue and manganese purple decoration. An early 18th century group (Berrington St 4, period 6, context 651) contained a tankard with traces of an AR monogram (Fig 48.1:M7.A10)

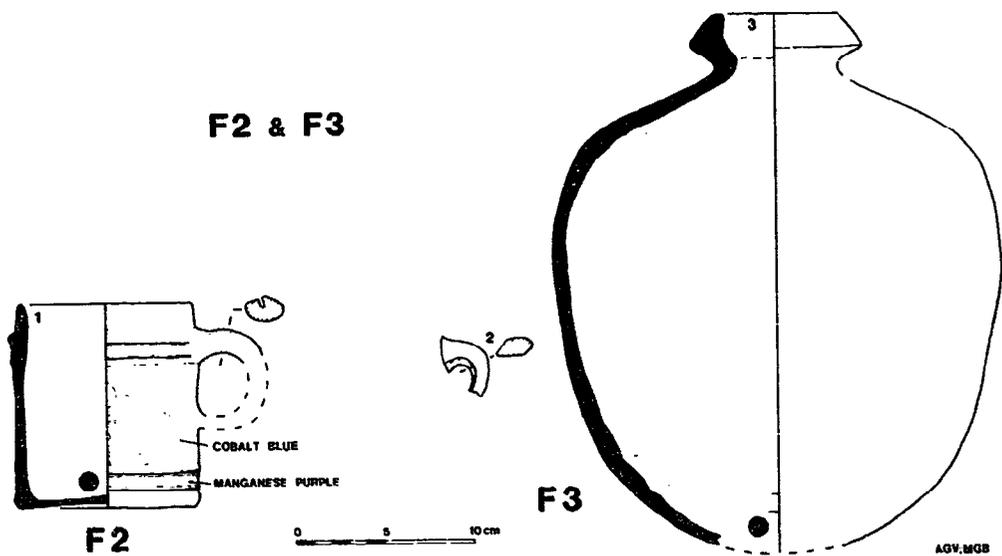
The remaining sherds are from early and mid 18th century levels including 27 sherds from Bewell House, the earliest sherds coming from period 7a (Contexts 99 and 163).

### Published Example

<u>FIG 48</u> <u>(M7.A10)</u>	<u>SITE</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
1	Berrington St 4	6	651	A tankard with traces of AR monogram

### Dating and Distribution - German Stoneware

Raeren stoneware is dated from about AD 1480 to 1550, while Cologne stoneware is dated to the first half of the 16th century. The low quantities of these fabrics may be due partly to the poor representation of late 15th and early 16th century pottery in the Hereford excavations. However, neither type is common at Gloucester, where levels of this period exist. Frechen



**Fig 48** Imported wares. Fabrics F2 (no 1); F3 (nos 2 & 3)

stoneware is dated to the second half of the 16th and the 17th century. Comparison with the clay pipes and the fabric sequences demonstrate that the Hereford examples arrived at this time. Westerwald stoneware occurs from the late 17th century throughout the 18th century. The types with manganese purple decoration, including all the Hereford material, are dated to about AD 1680 or later. They are rare at Gloucester in late 17th century levels but form up to 17% of mid 18th century assemblages there.

### **F3 - SPANISH WARES**

#### **MERIDA WARE**

##### Fabric

The example from Hereford contains angular and sub-angular grains of quartz, from 0.02mm to 0.6mm (few less than 0.1mm). There are also shreds of muscovite up to 0.7mm, biotite up to 0.4mm, a few fragments of feldspar 0.2mm to 0.4mm and two small grains of tourmaline up to 0.2mm, all in a matrix of anisotropic clay.

##### Dating and Frequency

A single sherd, comprising part of a handle from a two-handled vessel, came from an early 18th century context at Bewell House. This may be a Standing Costrel similar to those illustrated from medieval contexts in Britain (Hurst, 1977, Fig 32). The form is undatable.

##### Distribution

Sherds of Merida ware have been found at Worcester (Sidbury), Gloucester, at sites in the Bristol Channel (Knight, 1970), and in the Wye Valley at Tintern Abbey (Lewis, 1978, no 24).

Published Example

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<u>FIG 48</u> (M7.A10)	SITE	PERIOD	CONTEXT	DESCRIPTION
2	Bewell House	7a	99	Part of handle (p/m <u>Fig 70.5</u> )

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OLIVE JAR

Fabric

The example contains angular and sub angular fragments of quartz (6%), metamorphic rocks (2%), fine-grained limestone (1%), and fine-grained sandstone (1%), and small quantities of feldspars, including sanidine, pyroxene, white and black mica, basic and acidic rock fragments, and micaceous red clay pellets. All inclusions are up to 1.0mm but mainly 0.2mm to 0.5mm in a matrix of anisotropic clay containing specks of quartz, white mica and black mica.

Dating and Frequency

A single vessel has been found along with 17th century wares. It is almost complete and has an internal yellow glaze. In shape and size this vessel is comparable with Goggin's Middle Style B, current from about AD 1580 to 1780 (Goggin, 1960).

Distribution

Olive jars are found at several sites in the Bristol Channel area but are rare inland. One is recorded from Gloucester and another from Moreton Valence (Hunter, 1961).

Published Example

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<u>FIG 48</u> (M7.A10)	SITE	DESCRIPTION
3	(5604)	An almost complete vessel with an internal yellow glaze

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#### **F4 - ORIENTAL PORCELAIN**

Examples of oriental porcelain have been found on two sites in Hereford; Offa Street and Bewell House. The Offa Street vessels are unstratified but the Bewell House examples are mainly in late 18th century contexts. Most examples are blue painted cups and saucers but one is decorated in overglaze enamel.

None Illustrated

#### **F5 - ALKALINE GLAZED WARE**

A single sherd of a late medieval alkaline-glazed vessel, comprising the rim of a jar or jug, was found at Bewell House in a late 18th century context. It probably came from a source in the Mediterranean region. A similar sherd was found at Abdon, Shropshire (Hurst in Wilson, 1976).

None Illustrated

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## GROUP G : WARES OF UNKNOWN ORIGIN

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### INTRODUCTION

The wares in group G are those which have no known source. In some cases the approximate location can be suggested by considering the distribution of the ware, but in other cases either there is a lack of known examples or production may have taken place at a number of centres.

The sub-sections are:

- G1 - West Midlands early medieval ware (Chester type ware)
- G2 - Shell tempered wares
- G3 - Miscellaneous unglazed vessels
- G4 - Miscellaneous glazed vessels
- G5 - Tin glazed wares
- G6 - Tudor Green ware
- G7 - Late medieval wares
- G8 - Black glazed cups

### G1 - WEST MIDLANDS EARLY MEDIEVAL WARE (CHESTER TYPE WARE)

#### Fabric

This ware contains rounded and sub-angular quartz and a few sandstone fragments from 0.1mm to 0.4mm in a matrix of anisotropic clay containing fine fragments of quartz and white mica up to 0.06mm. A few rounded iron ore grains up to 0.2mm occur and occasional clay pellets up to 1.1mm (p/m Fig 70.6).

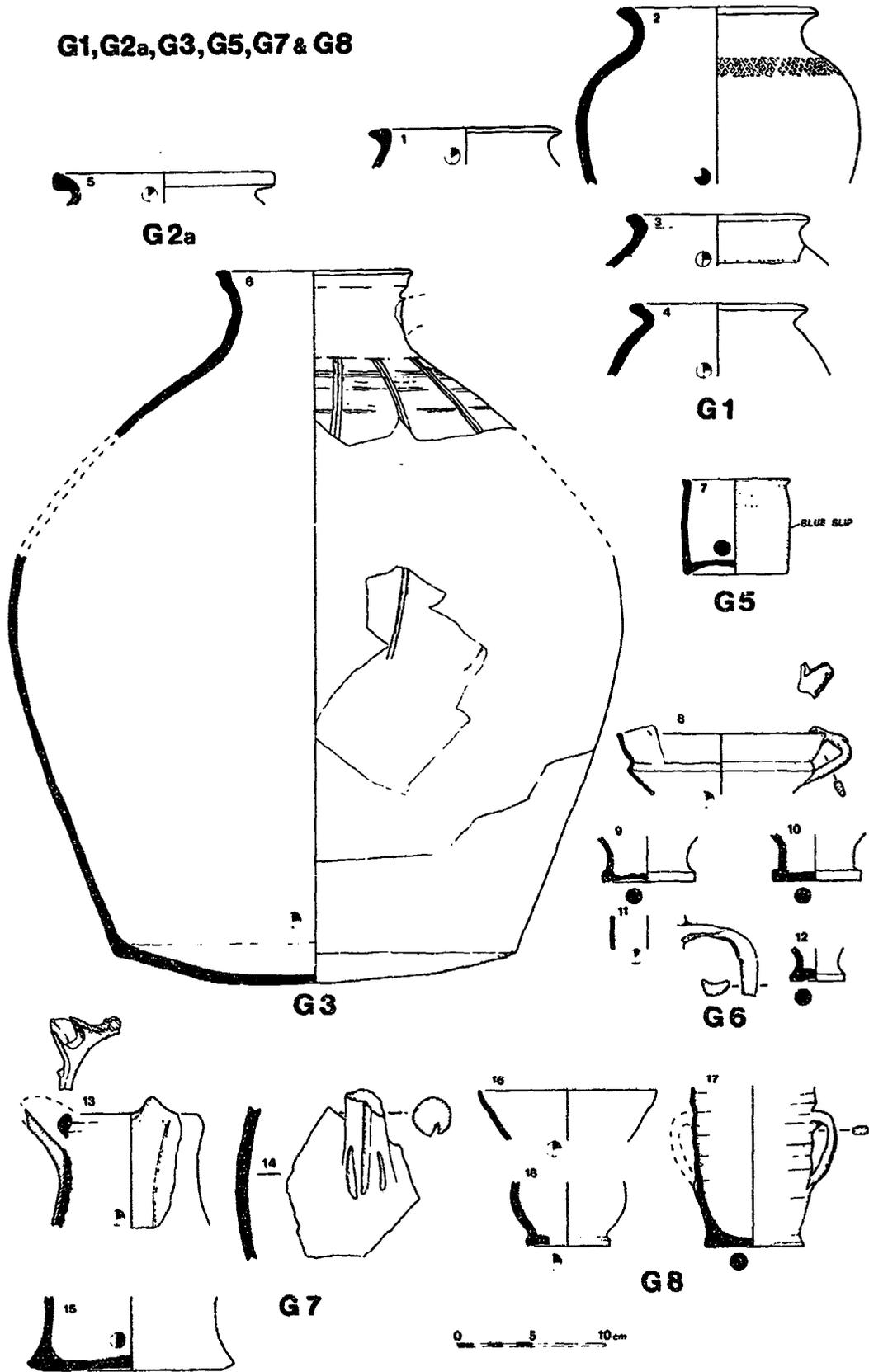
## Typology

Cooking pots are the normal type of vessel found in this ware. They are ovoid-profiled vessels formed on the wheel but with the bases pushed out after throwing. The lower part of the body is commonly knife trimmed. Rim forms range from those with a vertical neck and external rim thickening (Fig 49.1:M7.B2) to a rolled-out rim (Fig 49.2) and a lid-seated rim (Fig 49.3 & 4). The rim diameter varies from 110mm to 160mm but is mainly in the range 120mm to 140mm. Out of a sample of 395 sherds from various sites in Hereford 9% are rim sherds, 10% body sherds decorated with roller-stamping and 4% recognisable base sherds. This indicates that most vessels were decorated around the shoulder and that base sherds are difficult to recognise because of the knife trimming, there being no identifiable base angle in some cases.

Only two types of stamp design are found: the common cross-hatched diamonds, and the rarer squares. The impression of the roller stamp used on Fig 49.2 is 16.5mm tall and repeats itself every 65mm (Fig 50). The roller thus had a diameter slightly greater than 20mm (assuming no shrinkage of the clay after impression). All vessels are oxidized and have some external blackening and sooting.

A few of the larger diameter sherds could be from storage jars but no large fragments were found. Bowls have been recorded at Chester (Carrington in Davey, 1977, 12-17) and pitchers at Stafford (E Morris, pers. comm.), but neither of these forms have been found at Hereford.

G1, G2a, G3, G5, G7 & G8



AGV. MOB

Fig 49 Wares with no known origin. Fabrics G1 (nos 1-4); G2a (no 5); G3 (no 6); G5 (no 7); G6 (nos 8-12); G7 (nos 13-15); G8 (nos 16-18)

M7.B2

### Dating and Frequency

The ware is absent from any context earlier than the construction of the turf and timber rampart (Victoria Street, period 5a). It is found above the metalled path and in the soil levels which overlie the traces of timber buildings at Berrington Street. At Victoria Street it occurs below and alongside sherds of a red-painted pitcher which is probably of early 10th century date (group E1a) although at Berrington Street it is absent from the soil level which contained a coin of Alfred (lost c AD 887-925 - Coin 4). In the soil levels immediately above the turf and clay rampart the ware forms between 85 and 97% of the sherds found. In early 11th century levels it forms 71% of the sherds found but by the late 11th century the proportion falls to about 12% of the sherds and in most 12th century contexts it is absent. All the late 11th century contexts examined are from areas with earlier occupation and the sherds could thus be residual.

### Distribution

Similar pottery has been found at Chester (Carrington in Davey, 1977, 12-17) including a hoard deposited about AD 970, in a pot of this ware (Webster, 1953 and Haslam, 1978); at Stafford, including a kiln and waster dumps; at Shrewsbury; and at Worcester (Sidbury). Apart from a single sherd from Gloucester it is absent from sites to the south and east of Hereford, and no examples have yet been found in Wales. Thin-sectioning of the Hereford sherds does not indicate a local origin, the quantities of angular quartz silt and white mica being too low, but the potters used a sand of glacial origin which suggests a West Midlands manufacture.

Published Examples

<u>FIG 49</u> <u>(M7.B2)</u>	<u>SITE</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
1	Berrington St 2	2a	L107	Rim of a cooking pot
2	Berrington St 1	2a	P71	Most of the profile of a cooking pot with a band of cross-hatched diamond roller-stamping around the shoulder ( <u>Fig 50</u> )
3	Berrington St 3	2c	L513	The rim and part of the shoulder of a cooking pot with a band of square roller stamping around the shoulder
4	Berrington St 2	2a	L107	The rim and part of the shoulder of a cooking pot

Other Illustrated Examples

Fig 51.2-4, 8:M7.C3

Fig 52.1, 3-15, 17, 19-39, 42-50:M7.C7

Fig 53.37:M7.C9

Fig 56.1, 4-6, 8-10, 15-19, 22, 23, 26:M7.D2

Fig 58.3-11, 15:M7.D8

**G2-SHELL TEMPERED WARES**

G2a - ST NEOT'S TYPE WARE

Fabric

All sherds contain abundant shell fragments up to 1.0mm in cooking pot forms and 2.0mm in jugs. They all contain scattered angular quartz between 0.02mm and 0.2mm, rounded iron ore

pellets up to 0.1mm and a few rounded clay pellets up to 0.5mm. There are differences in detail between the fossil shell content of the jugs and the cooking pot: all contain fragments of shell (including pelecypods and brachiopods) and fragments of bryozoa up to 0.5mm. The jugs, however, contain, in addition, large fragments of fossiliferous limestone, up to 2.0mm, fragments of calcite up to 0.7mm and rounded fragments of calcite mudstone up to 1.6mm. The cooking pot contains microfossils of two types not found in the jugs. Very similar fossil shell assemblages have been found in shelly marls of the Jurassic Age and it is likely that such marls formed the sources for these wares. The vessels have brown surfaces (7.5YR 5/4) and a dark grey core (7.5YR 4/0) (p/m Fig 70.7 & 8).

#### Typology, Dating and Frequency

Only four sherds of St Neot's type ware have been found in Hereford. A sherd of a wheelthrown cooking pot (Fig 49.5:M7.B2) from a late 12th to early 13th century context, a bowl rim from a trial excavation at Drybridge House, south of the river, and two jug sherds including part of a sagging base (Fig 59.73:M7.D1C) from 13th and 14th century contexts.

#### Distribution

St Neot's ware is common at Droitwich (11th century cooking pots and bowls) and Worcester (late 10th to 11th century cooking pots), but is otherwise rare in the west of England. The distribution is centred in the East Midlands (Hurst in Wilson, 1976).

#### Published Example

<u>FIG 49</u> <u>(M7.B2)</u>	<u>SITE</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
5	Berrington St 2	3	400	Rim of a cooking pot

#### Other Illustrated Example

Fig 59.73:M7.D10

## **G2b - HANDMADE SHELL TEMPERED WARE**

### **Fabric**

The sherds examined contain rounded fragments of fossiliferous limestone, 0.2mm to 2.0mm, and scattered angular quartz fragments up to 0.02mm in a matrix of anisotropic clay. The limestone fragments consist of shell debris, including brachiopods, and possibly coral fragments in a matrix of silty, micaceous calcite or of sparry calcite. Small rounded iron ore pellets occur in the limestone and in the clay matrix, up to 0.04mm.

### **Typology, Dating and Frequency**

Five sherds were found at the Brewery in a context including 10th to late 12th century pottery. They are probably all from a single cooking pot and have spots of external brown glaze.

### **Distribution**

The fabric is not known outside Hereford. The petrology shows that it was not made in the immediate area surrounding the city, but fossiliferous limestones outcrop to the south-east and north of Hereford.

None Illustrated

## **G3 - MISCELLANEOUS UNGLAZED VESSELS**

### **DERITEND WARE**

### **Fabric**

The one vessel contains rounded quartz and quartzite, sandstones and a few rounded chert fragments from 0.1mm to 0.6mm in a matrix of anisotropic clay containing scattered quartz and white mica up to 0.1mm. A single rounded clay pellet 1.0mm across was present.

### Typology, Dating and Frequency

A single large storage vessel (Fig 49.6:M7.B2) was found in a late 12th or early 13th century pit at Berrington Street.

### Distribution

Waste material from Deritend, near Birmingham, includes vessels very similar to this one both in fabric and form. Similar Deritend unglazed pitchers occur at Weoley Castle, Birmingham, in levels dated to the first half of the 13th century (Oswald, 1964).

### Published Example

<u>FIG 49</u> <u>(M7.B2)</u>	SITE	PERIOD	CONTEXT	DESCRIPTION
6	Berrington St 1	3	P53	Fragments of a large storage vessel (p/m <u>Fig 70.9</u> )

### OTHER WARES

A variety of unidentified unglazed wares, mainly sandtempered cooking pots, occur throughout the period in which this type of vessel is common, but they never form more than 1% of assemblages.

None Illustrated

## **G4 - MISCELLANEOUS GLAZED WARES**

A variety of glazed wares occur which cannot be matched with known sources. Some are similar to unstratified wares from Shrewsbury and in thin-section contain a poorly sorted rounded quartz sand. They occur throughout the period in which glazed wares are used but are most common in the late medieval period.

### Illustrated Example

Fig 57.16:M7.D5

## **G5 - TIN GLAZED WARES**

No attempt was made to distinguish the various English sources for tin glazed wares although a careful but unrewarding search for Dutch and Spanish wares was made.

### Fabric

All sherds examined were of a soft, pale yellow fabric with a few visible rounded quartz grains. One sherd was thin-sectioned and contains angular quartz up to 0.2mm and rounded grains from 0.1mm to 0.3mm. Rounded fragments of fine textured limestone are present up to 1.0mm. The matrix consists of anisotropic clay with inclusions of calcite, quartz and white mica up to 0.1mm.

### Typology, Dating and Frequency

The earliest stratified sherds are from a late 17th century deposit at Berrington Street but they become common in early 18th century contexts (Fig 55.18-20:M7.C14) where they form 15% of the sherds. They continue as a similar proportion in assemblages of late 18th century date.

Vessels found include cups, bowls, plates and saucers and were either plain glazed or decorated with painted designs, usually blue in colour.

Published Example

<u>FIG 49</u> (M7.B2)	SITE	PERIOD	CONTEXT	DESCRIPTION
7	Berrington St 4	6	651	A tin glazed cup with painted blue bands (p/m <u>Fig 70.10</u> )

Other Illustrated Examples

Fig 55.18-20:M7.C14

**G6-TUDOR GREEN WARE**

Fabric

The sherds examined contain angular quartz grains mainly 0.02mm to 0.1mm with a few fragments up to 0.2mm, together with small quantities of white mica, rounded iron ore and tourmaline up to 0.1mm in a matrix of anisotropic clay.

Typology

Wheelthrown cups are present, some with the rim pinched into lobes. The vessels have an oval-sectioned handle and a pedestal base (Fig 49.8-10:M7.B2). They are covered externally and internally with a green specked glaze. Small wheelthrown jugs are also found with semi-circular cross-sectioned handles. Some bases have an obtuse angle (Fig 49.12 and Fig 57.18-20:M7.D5) Most body sherds could not be assigned to a form.

### Dating and Frequency

Six sherds were stratified in Hereford. One, a sherd of lobed cup, was in a late 15th to early 16th century context (Bewell House, period 6) and the remainder mainly in one mid to late 16th century context at Berrington Street 4 (period 6, pit 730). A number of sherds came from later contexts, especially at Bewell House where 15th to 16th century residual pottery is common.

### Distribution

It is likely that these sherds come from the same source as the Hants-Surrey wares (E5) and in thin-section similar inclusions are present. Tudor Green wares are regularly found in 15th and 16th century contexts in the West of England and have been found at Worcester (Barton, 1966) Wallingstones (Bridgewater, 1970) and Gloucester.

### Published Examples

<u>FIG 49</u> (M7.B2)	<u>SITE</u>	<u>PERIOD</u>	<u>CONTEXT</u>	<u>DESCRIPTION</u>
8	(7230)	-	-	Part of a lobed cup with an oval-sectioned handle
9	(7230)	-	-	Base of a cup
10	Berrington St 3	6	P510	Base of a cup
11	(8834)	-	-	Part of the body and handle of a small jug
12	Bewell House	8	47	A base, probably of a jug

### Other Illustrated Examples

Fig 57.18-20:M7.D5

## G7 - LATE MEDIEVAL JUGS

### Fabric

The examples examined contain poorly sorted rounded quartz, from 0.1mm to 1.1mm, and a few rounded fragments of light brown or colourless flint or chert of the same size. Several rounded and angular iron ore fragments are present, being opaque in thin-section and black or red in reflected light. Other inclusions are small angular fragments of quartz, shreds of white mica and small rounded iron ore and clay pellets all up to 0.1mm in a matrix of anisotropic clay (p/m Fig 70.11).

### Typology

Wheelthrown jugs, usually of slender profile, are decorated with applied strips of self-coloured and brown-firing clay (Fig 54.22:M7.C12) A bridge spout is known (Fig 49.13:M7.B2) and a rod handle (Fig 49.14). Bases are usually flat with an acute angle (Fig 49.15). The vessels have an external green specked glaze. There is some overlap in the typology and the visual appearance of the fabric with Bristol Redcliffe wares (E2b).

### Dating and Frequency

These wares are found in Hereford from the late 13th to the early 15th centuries and form up to 3% of earlier groups increasing to 15% of later groups.

### Distribution

Thin-sectioning does not suggest a local origin for this fabric which is probably made from a carboniferous light firing clay. An identical ware has been found at Gloucester in late medieval contexts.

### Published Examples

<u>FIG 49</u> (M7.B2)	SITE	PERIOD	CONTEXT	DESCRIPTION
13	Berrington St 3	5	L508	Part of the bridge spout and rim of a jug with an applied strip
14	Berrington St 1	3	P6	Part of the body of a jug and handle with slashed decoration
15	Berrington St 1	-	u/s	Part of the base of a jug

### Other Illustrated Examples

Fig 54.18, 19, 20 (Fig 49.14 above), 21 (Fig 49.15 above),  
22 & 23:M7.C12

## G8 - BLACK GLAZED CUPS

### Fabric

The examples examined contain rounded quartz, and rarer sandstone and rounded iron ore fragments from 0.1mm to 0.6mm. The matrix, of isotropic clay, contains a large quantity of very fine quartz, mainly less than 0.02mm but including a few angular grains up to 0.4mm. Shreds of white mica up to 0.1mm also sometimes occur. In all samples of this fabric it was noticeable that the glaze contained minute crystals of red and opaque minerals (p/m Fig 70.12-14)

### Typology

Globular bodied cups are most common and are wheelthrown with foot ring bases and wide flaring rims (Fig 49.16 & 18:M7.B2) and Fig 57.21-28:M7.D5). The number of handles on the Hereford examples is uncertain but is likely to be either two

or three. Vessels are glazed inside and out, although the lower half of the exterior is sometimes poorly covered. They are high-fired which sometimes causes the iron ore fragments in the body to react with the glaze.

Wheelthrown cylindrical cups with a foot-ring at the base and a number of corrugations also occur (Fig 49.17). These vessels normally have two opposed handles and are glazed and fired in the same manner as the globular-bodied cups.

### Dating and Frequency

These cups are common in later 16th century groups, forming up to 30% of assemblages by sherd count (by weight this would be a much lower proportion). The globular-bodied vessels are most common. They still occur in early 17th century contexts but are much less common (up to 2% of assemblages).

### Distribution

The fabric of these cups is very similar to that used for Staffordshire redwares, but the late 16th and early 17th century black-glazed cups discovered in and around the Potteries are completely different in form (Greaves, 1976; Celoria and Kelly, 1973). Vessels of G8 fabric and similar form occur at Worcester, (Sidbury) and at Gloucester where they are present from the mid 16th century and form 32% of early 17th century assemblages. This higher proportion at Gloucester must be connected with the competition provided by the Herefordshire kilns (A7d) which supplied black-glazed cups to Hereford but only rarely to Gloucester.

Published Examples

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<u>FIG 49</u> (M7.B2)	SITE	PERIOD	CONTEXT	DESCRIPTION
16	Berrington St 4	6	730	Part of the rim of a cup
17	City Arms	-	u/s	A large part of a straight-sided ribbed cup with one of two handles present
18	Berrington St 4	6	730	Part of the base and body of a globular cup

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Other Illustrated Examples

Fig 57.21 (Fig 49.16 above), 22, 23, 24 (Fig 49.18 above)

25-28:M7.D5

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# POTTERY GROUPS

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## INTRODUCTION

In the previous section the results and conclusions from the study of the pottery found in Hereford has been presented. References have been made to pottery groups from sealed layers and pits on the various sites. These groups provide most of the evidence on which the type series and dating have been based and are presented in this section in site order. Only selected groups of pottery are illustrated and no attempt has been made to illustrate all the pottery found. A few of the sherd drawings, which are included in the main report because they happen to be good examples of a particular type, are duplicated in this section where they complete a closed group.

The evidence is presented in the same order as that of the excavated sites in Volume 2, rather than in chronological order. References are given, where appropriate, to the tables of sherd counts for each fabric according to period. These are included in the microfiche section of Volume 2.

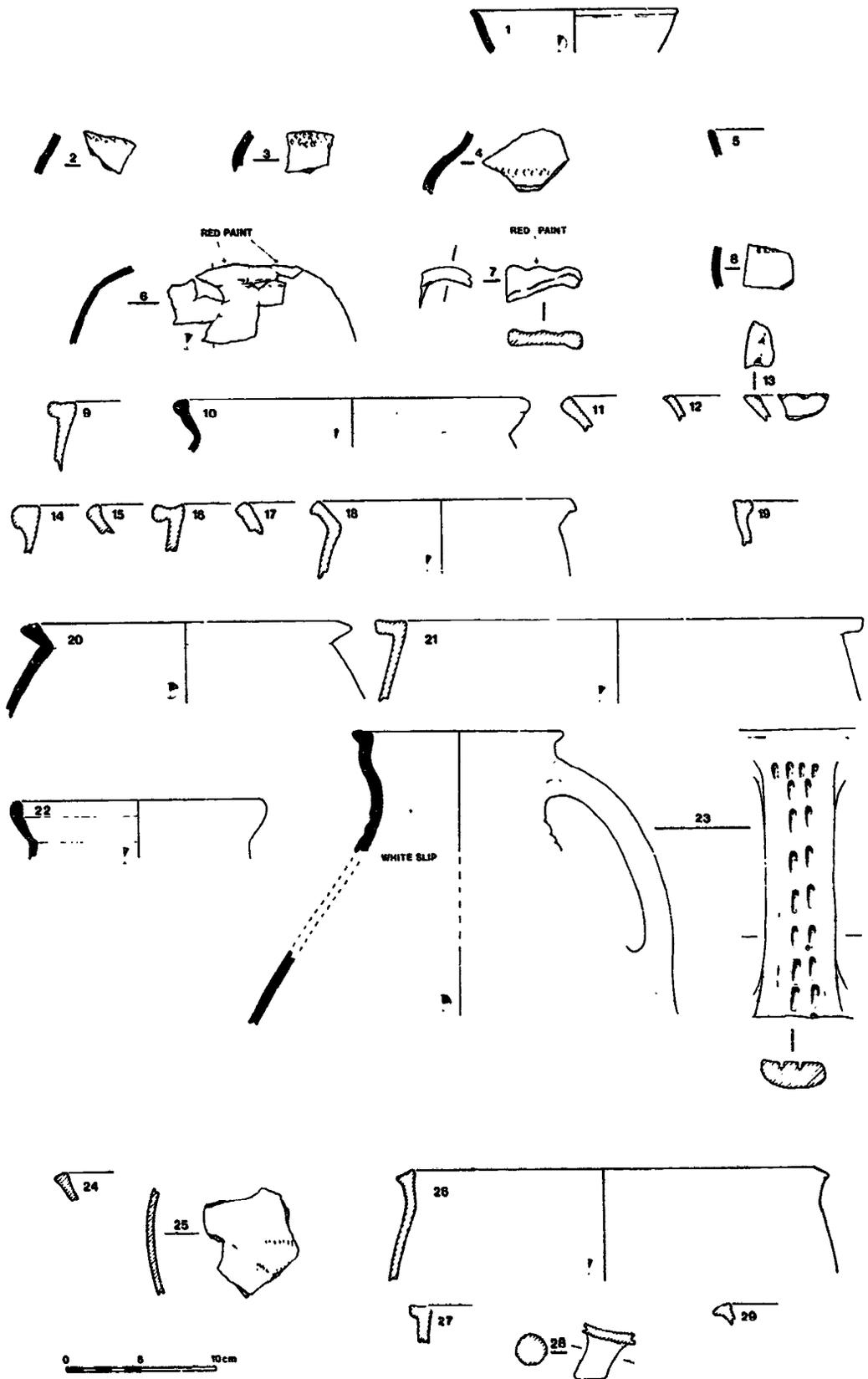
VICTORIA STREET, Periods 5a, 5c, and 8

Layers and features below and above the period 6 gravel rampart,  
considered to be of mid 11th century date

FIG 51 (M7.C3)	PERIOD	CONTEXT	FABRIC	DESCRIPTION
1	5a	20	A1	Rim from an unknown Roman vessel, possibly a tankard
2, 3, 4	5c	88	G1	Body sherds from the shoulders of cooking pots, all with traces of roller-stamped decoration
5	5c	87	A1	Rim sherd similar to Fig 51.1 above. Roman
6, 7	5c	87 & 22	E1a	Sherds of a red-painted pitcher
8	5c	22	G1	Body sherd with traces of a roller-stamped decoration
9	8	58	D2	Club rim from a straight-sided cooking pot
10	8	66	B1	Cooking pot rim
11-18	8	66	D2	Cooking pot rims, mainly everted. Two club rims (14 and 16)
19	8	76	B1	Cooking pot rim
20	8	40	D2	Everted cooking pot rim
21	8	*	D2	Straight-sided, club-rimmed cooking pot
22	8	*	B1	Wheelthrown cooking pot rim
23	8	*	A7b	Wheelthrown jug with a strap handle from the rim to the shoulder. There are two rows of stabbed impressions along the top of the rim. The vessel is covered in a white slip on the exterior and the inside of the rim, and is externally green glazed

(\* from the soil levels immediately above the period 6 gravel rampart)

Sherd counts: Period 5c: M1.D8 Period 8: M1.D13



AGV.R8

**Fig 51 Pottery from Victoria Street periods 5a, 5c and 8 (nos 1-23) and from the Subway sections periods 4/5 and 7 (nos 24-29)**

## Discussion

The first contemporary pottery is from period 5c, the disuse and collapse layers on the tail of the stage 2 turf and clay rampart. A total of 32 sherds were found stratified in layers 22, 80, 87, and 88 between the turf rampart of periods 5a and 5b and the possible gravel rampart of period 6. Of these, 12 sherds are from a single vessel, the red-painted pitcher of fabric E1a (Fig 51.6 & 7). These sherds were found in the lower part of layer 22 and on layer 87 at the junction of layers 22 and 88, and were thus probably deposited at some time after the initial weathering of the turf rampart, but before the final collapse when the stone-revetted defence reverted to a smooth bank. It is possible that these sherds were deposited shortly after the construction of the stone revetments of period 5b. The remaining few sherds, which are from layers 22 and 88, are either residual Roman or of fabrics D1 and G1. In the lower level, layer 88, sherds of G1 predominated and in the upper, layer 22, there were more sherds of D1. This sequence may suggest a significant difference in date between the deposition of the two layers but there is insufficient pottery to be certain.

The lack of the common 12th century pottery in layer 22 should be noted. Pits 58, 66, and 76, which cut into the period 6 gravel rampart, contain principally 12th and 13th century material as do the soil levels of period 8 on top of this rampart. A late 11th century date for the construction of the gravel rampart seems inescapable.

VICTORIA STREET - SUBWAY SECTIONS, Periods 4/5 and 7

Pottery from the early (period 4/5) and late (period 7) ditch fills.

FIG 51 (M7.C3)	PERIOD	CONTEXT	FABRIC	DESCRIPTION
24	4/5	153	B1	Cooking pot rim
25	4/5	153	B2	Tripod pitcher body sherd with faint traces of roller- stamped decoration
26	7	142	B1	Cooking pot rim
27	7	142	C1	Club rim of a cooking pot
28	4/5	114	A2	Tripod pitcher foot, spotted with glaze
29	4/5	114	B1	Cooking pot rim

Sherd counts: Early and late ditches: M1.E5

Discussion

The pottery from the subway sections was found in the various ditch fills as the sections were cleaned. The sherds are mainly of 12th century date although Fig 51.28 should be very late 12th or early 13th century. This indicates that the early ditch (period 4/5) remained open after the associated defences of stages 2 & 3 were abandoned, and was finally filled probably when the extended stage 5 defences were built.

BERRINGTON STREET - Sites 1-3: Period 2a

10th and early 11th century layers and features

FIG 52 (M7.C7)	SITE	CONTEXT	FABRIC	DESCRIPTION
1	1	P71	G1	Most of the profile of a cooking pot with roller-stamped decoration on the shoulder
2	1	L60 (Period 1)	-	Samian Ware. Drag 24/25 Claudian
3-8	1	L58	G1	Rim and body sherds, some with roller-stamped decoration
9-13	2	L201	G1	Rim and body sherds, some with roller-stamped decoration
14	2	F284*	G1	Roller-stamped body sherd (probably context 296)
15	2	F112	G1	Roller-stamped body sherd
16	2	L107	D1	Rim of cooking pot
17	2	L107	G1	Rim of cooking pot
18	2	L107	A1?	Jar rim, decorated with thumb-nail impressions, possibly Roman
19-39	2	L107	G1	Fragments of cooking pots, some with roller-stamped decoration
40 & 41	3	L107	D1	Everted rim of a cooking pot
42-50	3	L107	G1	Fragments of cooking pots, some with roller-stamped decoration

(\*The context is period 1, but the pottery is considered to be from the period 2 gully 296)

Sherds counts: Period 2a: M2.C9 (includes site 4)

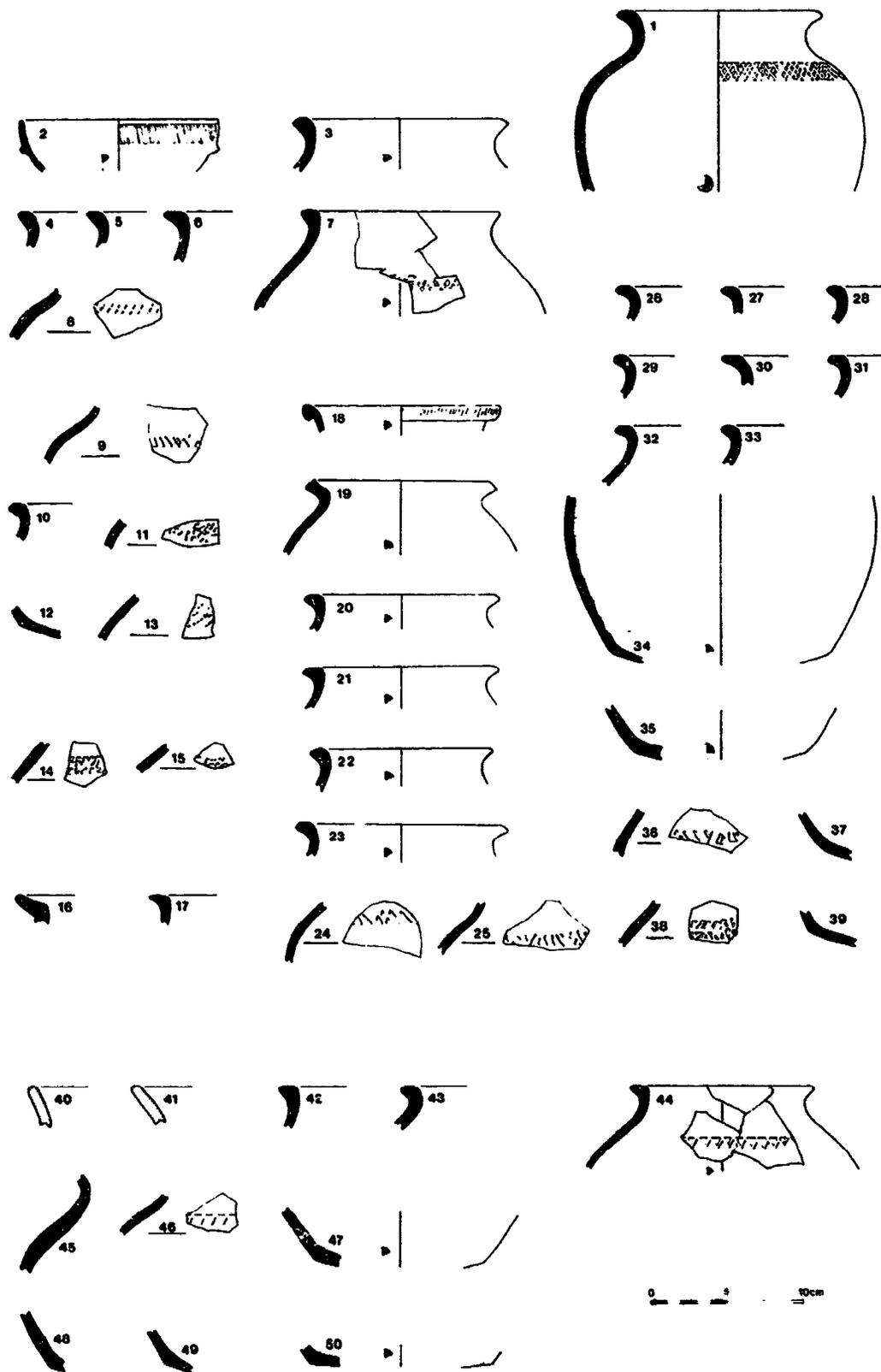


Fig 52 Pottery from Berrington Street period 2a  
 (site 1 - nos 1-8; site 2 - nos 9-39;  
 site 3 - nos 40-50)

M7.C7

### Discussion

The few Roman sherds (Fig 52.2 & 18:M7.C7) together with those from Victoria Street (Fig 51.1 & 5:M7.C3) and from the Brewery (Fig 58.1 & 2 :M7.D8) are the only examples from the scatter of Roman pottery found in Hereford which can be illustrated.

Layer 107 and the associated features are the earliest contexts in Berrington Street sites 1-3 which produced contemporary pottery. In the assemblage sherds of G1 predominate over those of fabric D1. The drawn examples illustrate the variety of rims and roller-stamped decoration used in fabric G1 whilst the bulbous rounded-bottomed form is indicated by Fig 52.1 & 34.

### BERRINGTON STREET, - Site 1: Period 3

Late 12th to early 13th century pits

All cooking pots are straight-sided, everted-rimmed and have sagging bases unless otherwise described. They are illustrated in type fabric order.

FIG 53 (M7.C9)	PIT	FABRIC	DESCRIPTION
1-4	P6	A2	Cooking pots. Fig 53.4 has a thumb-impressed lip and may be a storage jar
5	P3	A2	Tripod pitcher rim
6	P4	A2	Tripod pitcher foot
7	P13	A2	Tripod pitcher body sherd with wavy combing decoration
8	P6	A2	Tripod pitcher body sherd with a wavy groove
9	P6	A3	Tripod pitcher rim with part of a strap handle

(cont)

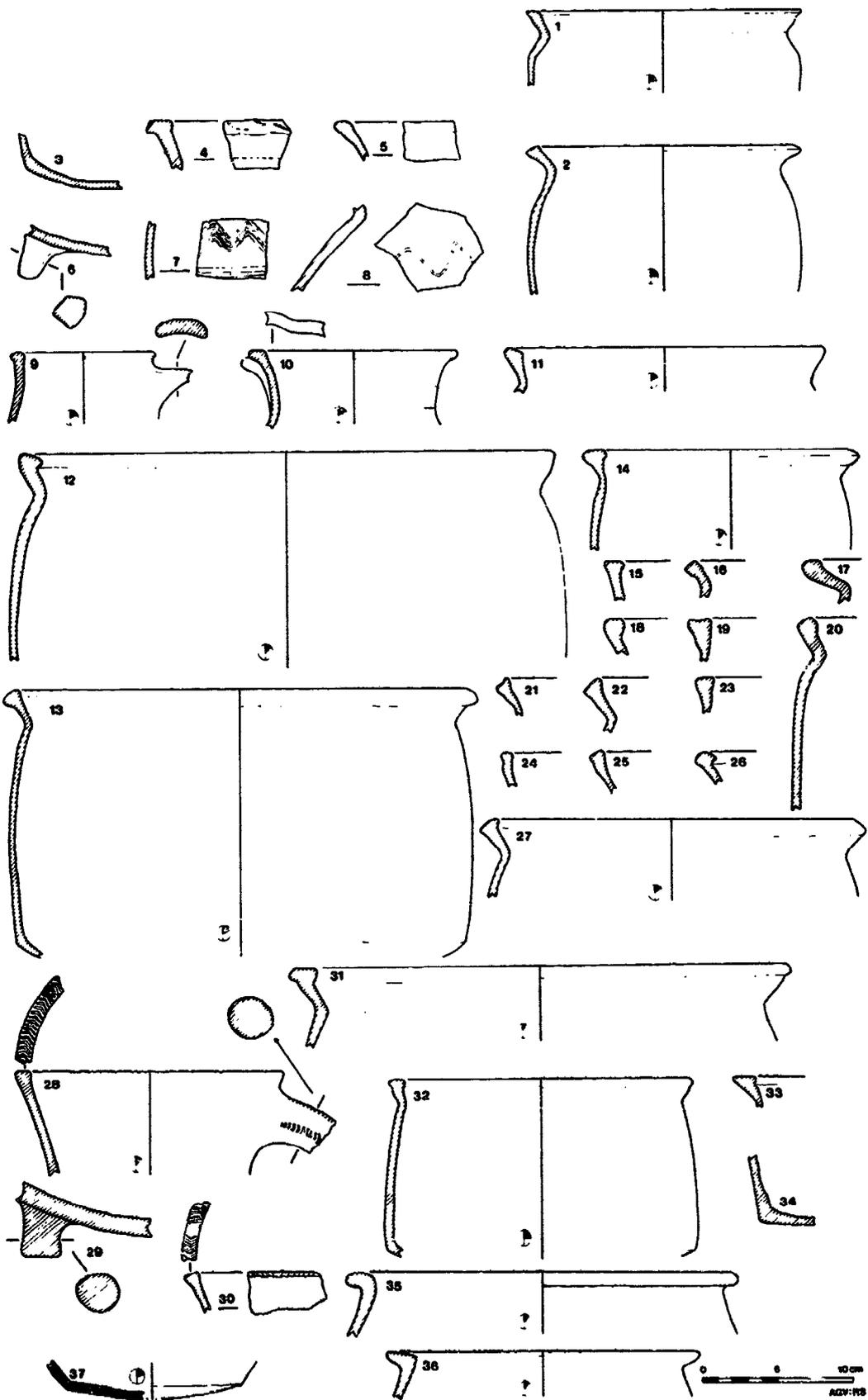


Fig 53 Pottery from Berrington Street 1, period 3.  
Late 12th to early 13th century pits.

(cont)

FIG 53 (M7.C9)	PIT	FABRIC	DESCRIPTION
10	P3	A3	Tripod pitcher rim with a pulled spout
11	P10	A8	Cooking pot rim
12	P3	B1	Cooking pot rim and body
13	P4	B1	Full profile of a cooking pot
14	P8	B1	Cooking pot rim
15-16	P6	B1	Cooking pot rims
17	P3	B1	Cooking pot rim
18	P13	B1	Cooking pot rim
19	P6	B1	Cooking pot rim
20	P21	B1	Cooking pot rim and body (radius 180mm)
21	P13	B1	Cooking pot rim
22	P8	B1	Cooking pot rim
23-25	P13	B1	Cooking pot rims
26	P3	B1	Cooking pot rim
27	P8	B1	Cooking pot rim
28	P6	B2	Tripod pitcher rim with circular-sectioned handle. The top of the rim and the handle are decorated with roller-stamping
29	P6	B2	Tripod pitcher foot
30	P6	B2	Tripod pitcher rim with roller-stamped decoration on top of the rim
31-32	P6	C1	Cooking pots: Fig 53.32 is a complete profile
33	P17	C1	Cooking pot rim
34	P6	C1	Cooking pot base
35	P4	D2	Globular-bodied cooking pot with clubbed rim
36	P20	D2	Globular-bodied cooking pot with clubbed rim
37	P13	G1	Cooking pot base

Sherd count: Period 3: M2.E1 (sites 1-4 inclusive)

## Discussion

Although the total area of site 1 which was undisturbed by modern intrusions was quite small it contained many pits most of which were of late 12th or early 13th century date. The examples illustrated demonstrate the range of forms and fabrics in use during this period as indicated by this group of pits.

### BERRINGTON STREET - Site 1: period 5

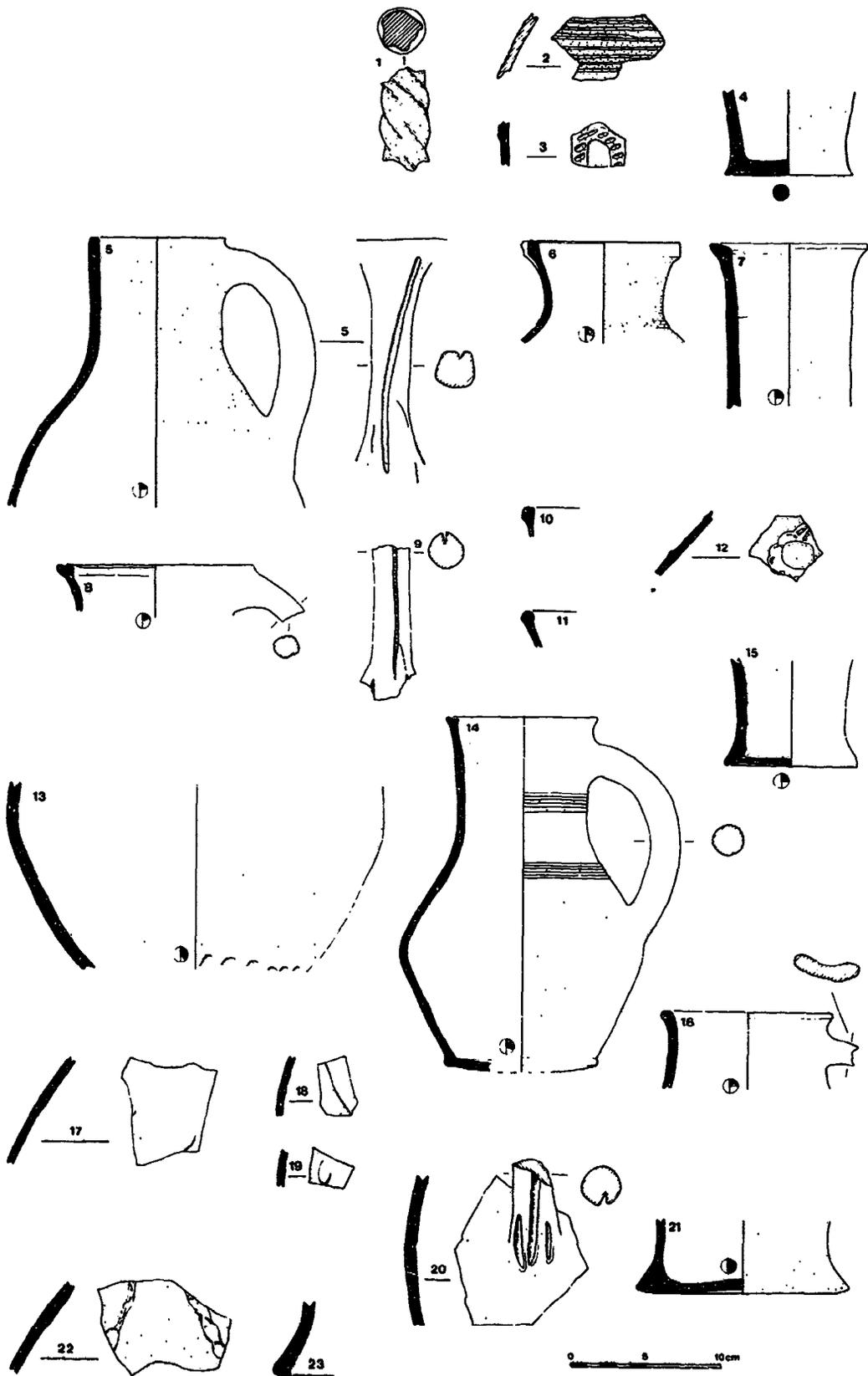
#### 14th and 15th century pits

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FIG 54 (M7.C12)	PIT	FABRIC	DESCRIPTION
1	P11	A2	Twisted handle
2	P11	A4	Tripod pitcher body sherd
3	P11	A6	Applied strip with an impressed decoration
4	P1	A7b	Flat jug base
5	P1	A7b	Jug with rod handle (p/m. Fig 66.11)
6	P11	A7b	Jug with pulled spout
7	P11	A7b	Jug rim and neck
8	P11	A7b	Jug rim with a rod handle
9	P11	A7b	Rod handle with single vertical knife slash
10	P18	A7b	Jug rim
11	P18	A7b	Jug rim
12	P18	A7b	Body sherd of jug with a white applied rosette
13	P15	A7b	Jug body sherd with traces of a thumbled base
14	P1	B4	Complete profile of a jug with a rod handle
15	P1	B4	Part of the flat base of a jug
16	P11	B4	Jug rim with a plain strap handle

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(cont)



AGV:RS

Fig 54 Pottery from Berrington Street 1, period 5. 14th and 15th century pits.

M7.C12

(cont)

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FIG 54 (M7.C12)	PIT	FABRIC	DESCRIPTION
17	P11	B4	Body sherd of a jug with a painted slip
18	P18	G7	Body sherd of a jug with an applied strip
19	P18	G7	Body sherd of a jug with an applied pellet
20	P18	G7	Body sherd of a jug with a rod handle with knife slashing
21	P11	G7	Part of a flat base of a jug
22	P15	G7	Body sherd of a jug with applied, red-firing strips
23	P15	G7	Part of the flat base of a jug

---

Sherd Count: Period 5: M2.E12 (sites 1-4 inclusive)

BERRINGTON STREET - Site 2: Period 6

Early 18th century pit, F407

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FIG 55 (M7.C14)	FABRIC	DESCRIPTION
1	A7e	Rim of a deep bowl
2	A7e	Rim of a small bowl
3	A7e	Rim of a small bowl
4	A7e	Rim of a large bowl; probably a two lug-handled vessel
5	A7e	Base of a small bowl
6	A7e	Base of a large bowl
7	E6	Black-glazed butter pot
8	E6	Black-glazed, globular-bodied vessel
9	E6	Mottled, iron-glazed, lobed cup
10	E6	Mottled, iron-glazed, globular bodied vessel
11	E6	Globular-bodied vessel covered with a brown slip and decorated with a trailing white slip; clear glazed

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(cont)

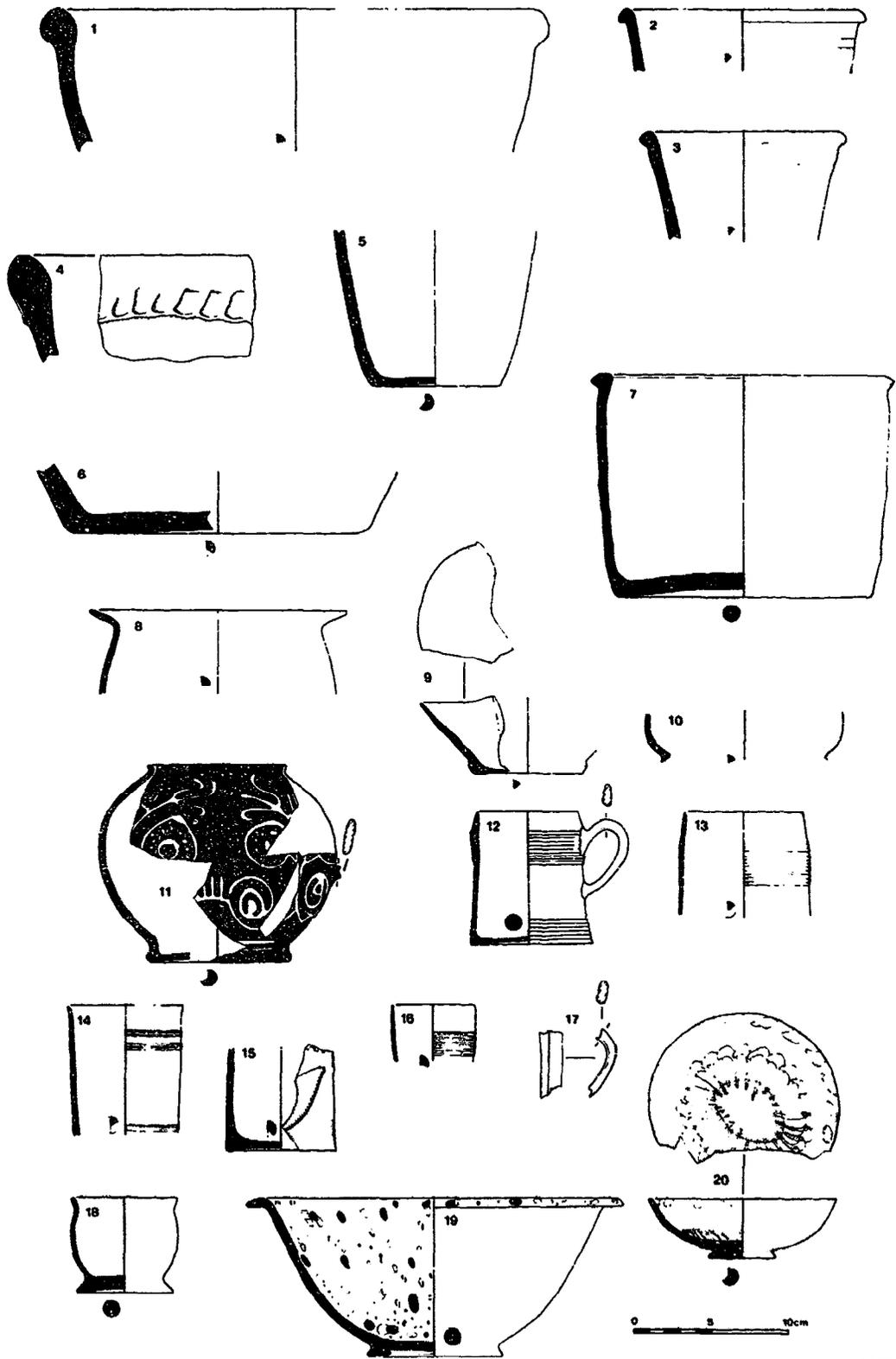


Fig 55 Early 18th century pottery from Berrington Street 2, period 6, pit 407.

M7.C14

(cont)

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FIG 55 (M7.C14)	FABRIC	DESCRIPTION
12-17	E6	Brown stoneware tankards. Fig 55.15 has traces of an imitation excise stamp of Queen Anne dating its manufacture to 1702-14
18	G5	Plain, tin-glazed cup
19	G5	Tin-glazed bowl with lead glaze on the underside, decorated with spots of blue, green, yellow, and purple paint
20	G5	Tin-glazed saucer, with a painted blue design. On the underside is a stacking mark, also with traces of a blue design, suggesting that it was fired without the use of trivets or saggars

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Sherd Count: Period 6: M2.F4 (site 1-4 inclusive)

BERRINGTON STREET - site 4: Periods 2a, 2b and 2c

10th and 11th century levels

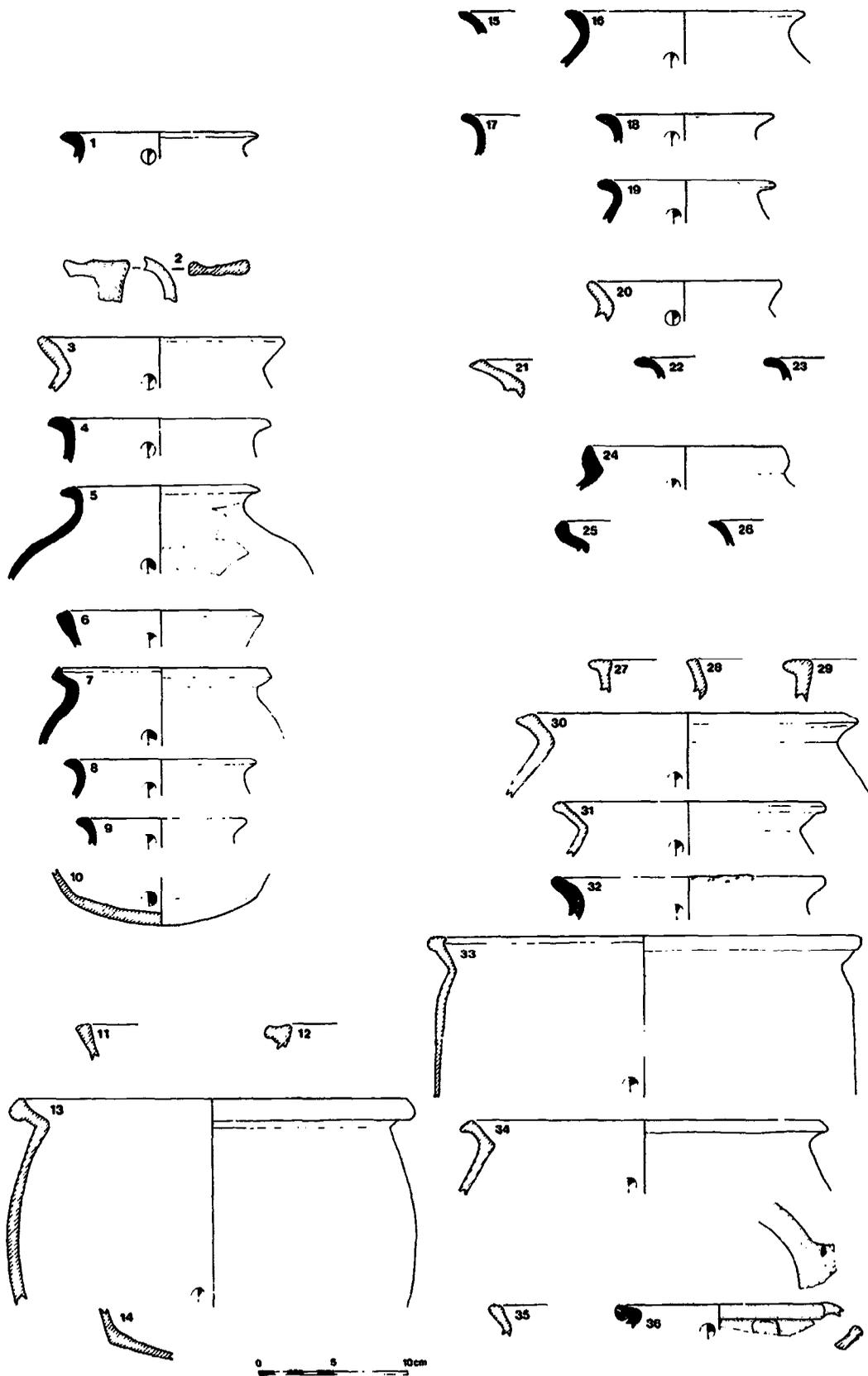
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FIG 56 (M7.D2)	PERIOD	CONTEXT	FABRIC	DESCRIPTION
1	2a*	880	G1	Cooking pot rim
2	2a	861	A7a	Handle of a pitcher .
3	2a	861	D1	Cooking pot rim
4	2a	861	G1	Cooking pot rim
5	2a	861	G1	Upper half of a cooking pot with a band of roller-stamped decoration on the shoulder
6	2a	853	G1	Cooking pot rim
7	2b	842	D1	Rim of a lid-seated cooking pot
8-10	2b	842	G1	Cooking pot rims and base
11	2c	792	B1	Cooking pot rim
12-14	2c	792	D2	Club and everted rimmed cooking pots and base

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(cont)

M7.D1



AGV, RS

Fig 56 Pottery from Berrington Street 4, periods 2a, 2b & 2c. 10th & 11th century levels.

M7.D2

(cont)

FIG 56 (M7.D2)	PERIOD	CONTEXT	FABRIC	DESCRIPTION
15	2b	841	G1	Cooking pot rim
16	2a	832	G1	Cooking pot rim
17	2a*	900	G1	Cooking pot rim
18	2a	832	G1	Cooking pot rim
19	2a*	900	G1	Cooking pot rim
20	2b	844	D1	Cooking pot rim
21	2b	874	D1	Cooking pot rim
22 & 23	2c	819	G1	Cooking pot rims
24	2b	898	D1	Rim of lid-seated cooking pot
25	2b	894	D1	Rim of lid-seated cooking pot
26	2b	894	G1	Cooking pot rim
27	2c	796	C1	Club rim of a straight-sided cooking pot
28	2c	796	D1	Everted rim of a cooking pot
29	2c	796	D2	Club rim of a cooking pot
30	2c	796	D2	Globular-bodied cooking pot with an everted rim
31	2c	851	D2	Everted rim of a cooking pot
32	2c	819	D1	Rolled-out cooking pot rim with thumb impressions round the rim
33	2c	816	B1	Straight-sided cooking pot with an everted rim
34	2c	816	D2	Everted rim of a globular-bodied cooking pot
35	2c	816	D2	Everted rim of a cooking pot
36	2c	816	E1b	Rim, possibly of a storage jar with a vertically-applied thumbed strip and traces of a roller-stamped diamond pattern on top of the strap handle. It has a clear glaze with some brown spots

(\*From a period 1 context but assumed to be an unseen period 2a feature (M2.C5))

Sherd Count: Period 2a: M2.C9 (sites 1-4 inclusive)  
Period 2b: M2.C12 (site 4 only)  
Period 2c: M2.D2 (site 4 only)

BERRINGTON STREET - site 4: Period 6

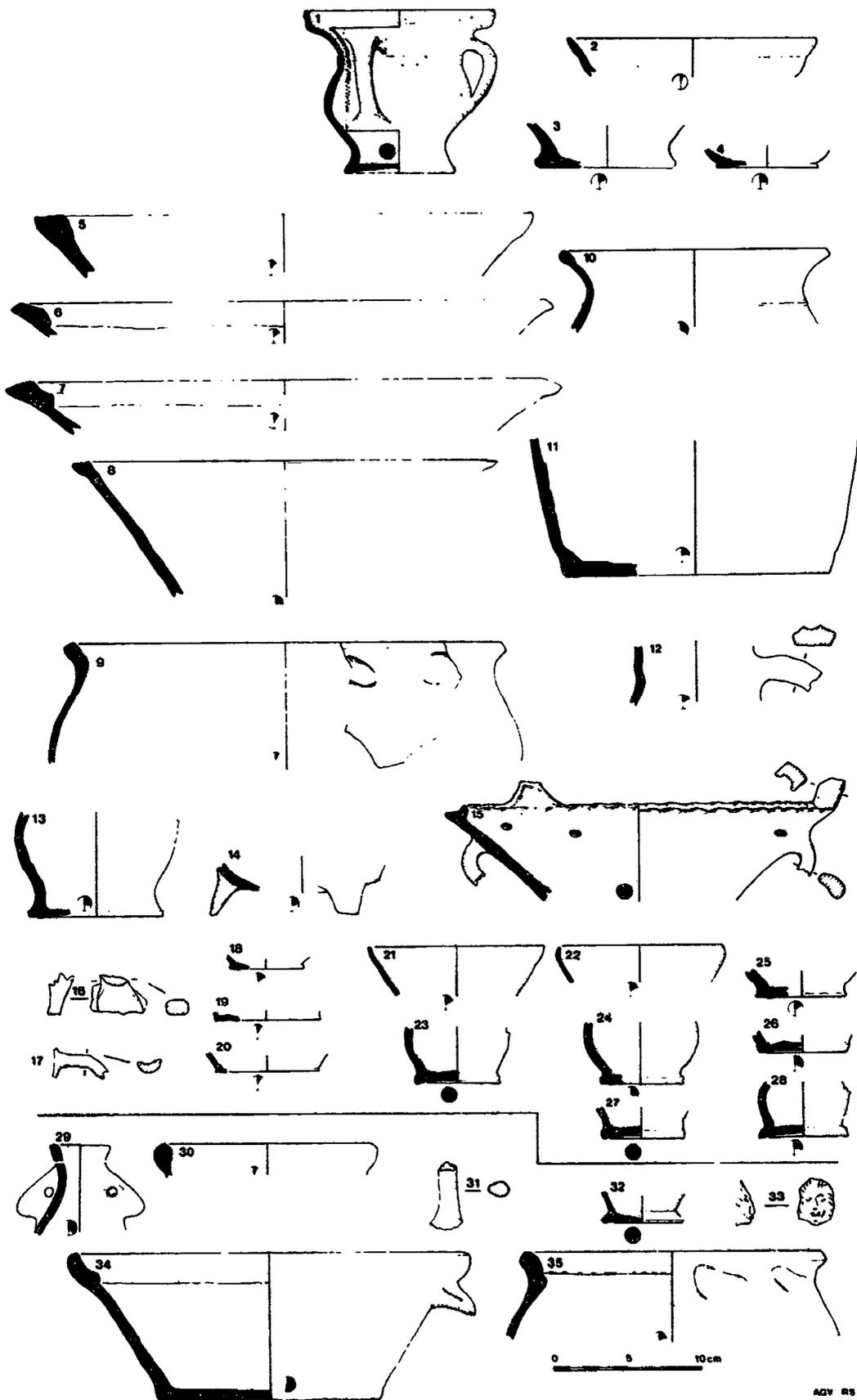
Early to mid 16th century features

PIT 730

FIG 57 (M7.D5)	FABRIC	DESCRIPTION
1	A7c	Almost complete three-handled cup, internally and externally copper-green glazed
2	A7c	Cup or bowl rim internally and externally copper-green glazed
3	A7c	Jug or cup base with foot ring. Internally clear brown glazed with drips of glaze on the exterior (p/m <u>Fig 66.12</u> )
4	A7c	Jug or cup base with foot ring. It is internally and externally clear brown glazed
5-8	B4	Conical bowl rims; Fig 57.8 is slightly warped
9 & 10	B4	Lid-seated jar rims; Fig 57.9 has an applied thumbled strip around the neck
11	B4	Jar base with spots of glaze on the interior
12	B4	Unglazed jug handle
13	B4	Lower half of a jug or cup with the stub of an oval-sectioned handle. There are spots of glaze both internally and externally
14	B4	Sooted pipkin base with an internal brown glaze
15	B4	Top half of a chafing dish. There are three supports, equally spaced around the rim and two opposed oval-sectioned handles. Two holes, 6mm in diameter, are on each side of the supports. The vessel has an internal dark green glaze
16	G4	Handle and part of the body of a wheelthrown jug of a fine white fabric with numerous small quartz inclusions. It has an internal and external green glaze
17	G6	Jug handle with a green glaze
18-20	G6	Jug bases; Fig 57.19 is externally and the others internally green-glazed
21-22	G8	Cup rims with internal and external brown coloured glaze
23-28	G8	Cup bases, all with foot rims and good internal brown coloured glaze. The external glaze is patchy with a better cover towards the top of the vessel

(cont)

M7.D4



**Fig 57** Early to mid 16th century pottery from Berrington Street 4, period 6. Pit 710 (nos 1-28); Layer 704 (nos 29-35)

M7.D5

## LAYER 704

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FIG 57 (M7.D5)	FABRIC	DESCRIPTION
29	A6	Costrel neck with two lug handles. It has an external clear glaze
30	A7d	Bowl rim with an internal clear brown glaze
31	A7d	Unglazed, oval-sectioned handle
32	A7c	Jug or cup base. The vessel is knife-trimmed and is internally and externally glazed
33	A7c	Moulded, applied face secured to body of vessel by fine knife stabbing. It has a clear brown glaze
34	B4	Conical bowl with a small lug handle. It was probably one of two handles
35	B4	Lid-seated jar rim with an applied, thumbled strip around the neck

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Sherd Count: Period 6: M2.F4 (sites 1-4 inclusive)

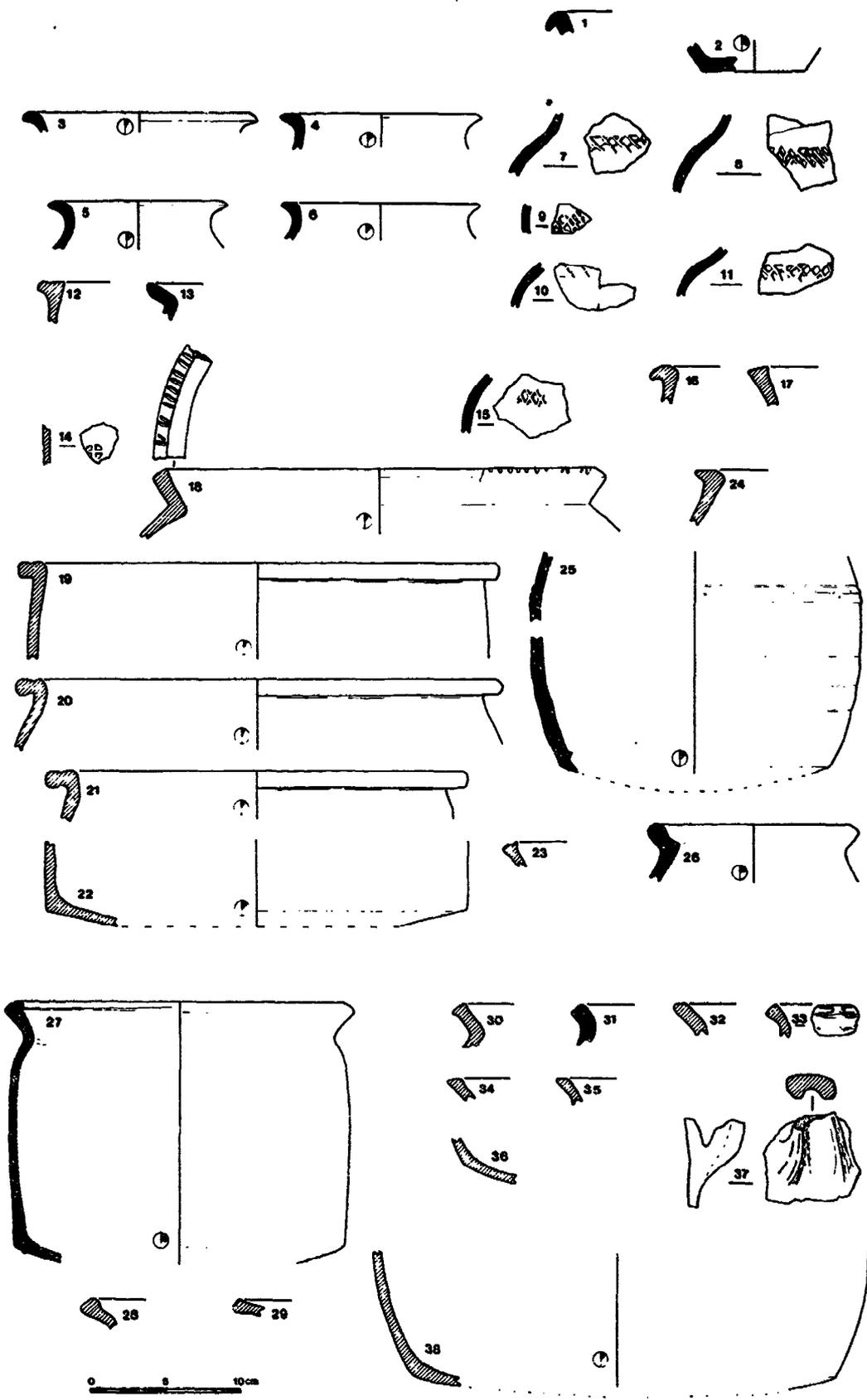
### Discussion

Pit 730 contained a homogenous fill which can be dated to the early or mid 16th century on the basis of Raeren Stoneware, a coin of Henry VII and the presence of G8 cups. Layer 704 sealed the pit contents and contained a slightly later group of pottery, with a higher proportion of local earthenwares (A7c and A7d), and three sherds of a Martincamp flask (F1).

**BREWERY - Periods 2a, 2b, and 2c****12th century features and layers**

<b>FIG 58 (M7.D8)</b>	<b>PERIOD</b>	<b>CONTEXT</b>	<b>FABRIC</b>	<b>DESCRIPTION</b>
1	2a	21	A1	Bowl rim - Roman
2	2a	21	A1	Base from a jar - Roman
3-6	2a	21	G1	Cooking pot rims
7-11	2a	21	G1	Fragments of cooking pots with roller-stamped decoration on the shoulder
12	2a	21	D2	Club rim of a cooking pot
13	2a	21	D1	Everted rim of a cooking pot
14	2a	129	D2	Body sherd from a pitcher with a small impressed stamp featuring a cross in a circle
15	2c	11	G1	Body sherd with roller-stamped decoration
16	2c	11	D2	Club rim of a cooking pot
17	2c	11	D2	Everted rim of a cooking pot
18	2c	11	D2	Everted-rimmed, globular-bodied cooking pot with thumb-nail impressions around the rim
19-21	2c	11	D2	Club-rimmed cooking pots
22	2c	11	C1	Base of a straight-sided cooking pot
23	2c	11	C1	Everted cooking pot rim
24	2c	11	D2	Club-rimmed globular-bodied cooking pot
25	2b	38	A7a	Two non-joining sherds of a glazed pitcher. The fabric is oxidized reddish yellow (5YR 6/6) with a light reddish brown glaze (2.5Y 5/4) in patches on both surfaces
26	2b	119	D1	Lid-seated cooking pot with a dark grey core and a dark brown (7.5YR 4/6) oxidized zone on the exterior surface
27	2b	169	C1	Everted-rimmed straight-sided cooking pot, probably wheel-thrown. The red oxidized colour (2.5YR 4/6) is probably due to refiring as it was found inside furnace 169

(cont)



AGV.RS

**Fig 58 Pottery from 12th century features at the Brewery. Period 2a (nos 1-14); Period 2b (nos 25-38); Period 2c (nos 15-24)**

M7.D8

(cont)

FIG 58 (M7.D8)	PERIOD	CONTEXT	FABRIC	DESCRIPTION
28	2b	169	C1	Everted rim of a cooking pot
29	2b	67	C1	Everted rim of a cooking pot, possibly refired in the furnace
30	2b	45	D2	Everted rim of a cooking pot
31	2b	45	D1	Rolled out rim of a cooking pot
32	2b	45	D1	Everted rim of a cooking pot
33	2b	45	D2	Everted rim of a cooking pot with thumb impressions around the rim
34-35	2b	45	D2	Everted rims of cooking pots
36	2b	45	D2	Globular-bodied cooking pot base
37	2b	45	D2	Body sherd of a pitcher with the stub of a handle
38	2b	45	D2	Globular-bodied cooking pot base

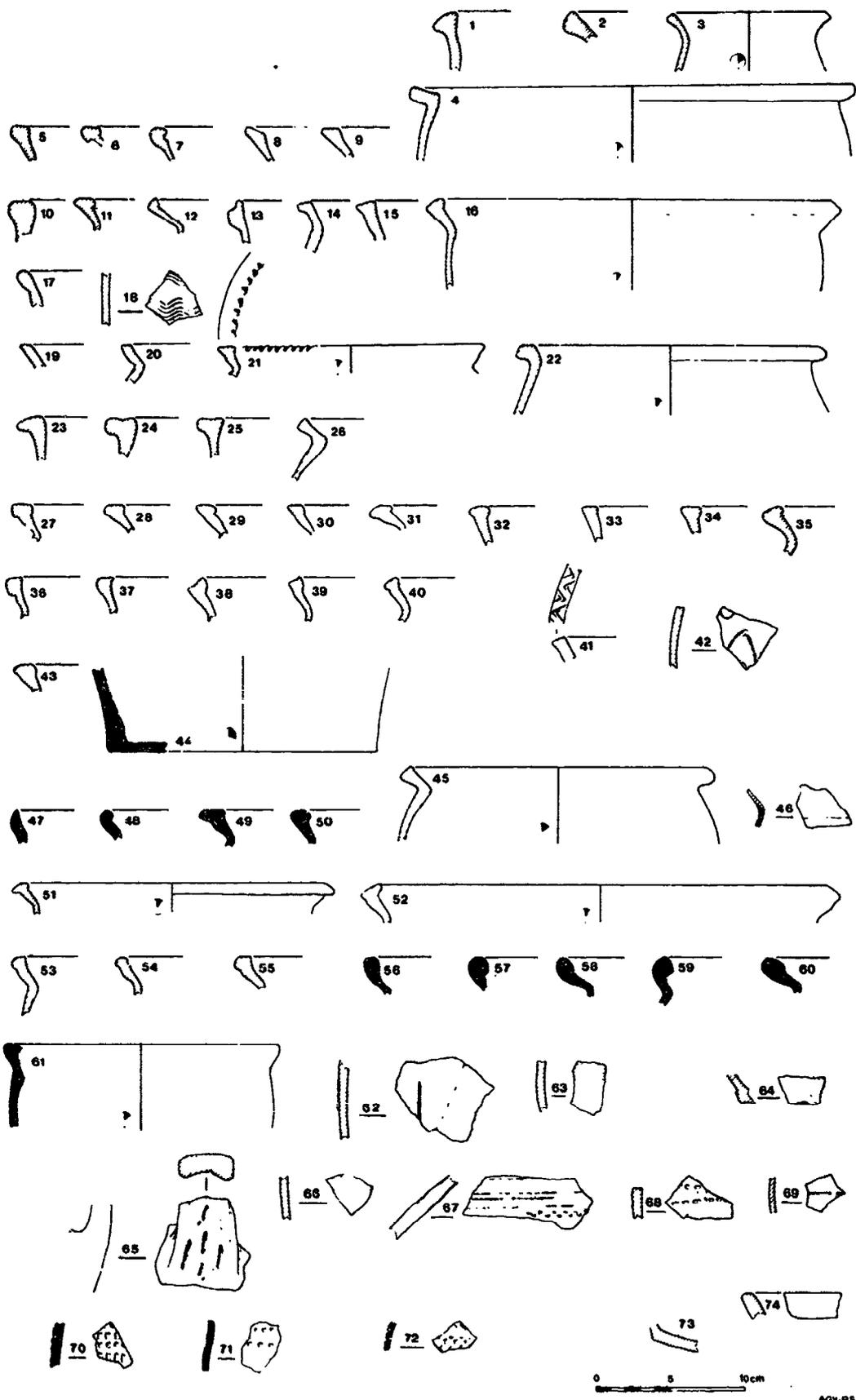
Sherd Count: Period 2a: M3.C9-C10  
Period 2b: M3.D2  
Period 2c: M3.D5

BREWERY - Periods 2a\*, 2c, 3, and 4a

Late 12th to mid 13th century features and layers

FIG 59 (M7.D10)	PERIOD	CONTEXT	FABRIC	DESCRIPTION
1	2c	7*	D2	Club rim of a cooking pot
2	2c	7*	D2	Everted rim of a cooking pot
3	2c	7*	D1	Everted rim of a cooking pot
4	2c	7*	D2	Club rim of a straight-sided cooking pot

(cont)



**Fig 59 Pottery from late 12th to mid 13th century, features and layers at the Brewery. Period 2c (nos 1-42); Period 3 (nos 43 & 44); Period 4a (nos 47-74)**

M7.D10

(cont)

FIG 59 (M7.D10)	PERIOD	CONTEXT	FABRIC	DESCRIPTION
5-9	2c	7*	C1	Everted rims of cooking pots
10-12	2c	7*	B1	Everted rims of straight-sided cooking pots
13	2c	7*	B1	Straight-sided cooking pot with a cordon around the rim
14-16	2c	7*	B1	Everted rims of straight-sided cooking pots
17	2c	7*	A2	Tripod pitcher rim
18	2c	7*	A2	Body sherd from a tripod pitcher with combed decoration
19-21	2c	15	D2	Everted rims of cooking pots. Fig 59.21 has thumb nail decoration on the inside edge of the rim
22-25	2c	15	D2	Club rims of cooking pots
26	2c	15	D2	Everted rim of a cooking pot
27-35	2c	15	C1	Everted rims of cooking pots
36-40	2c	15	B1	Everted rims of cooking pots
41	2c	15	B2	Tripod pitcher rim with roller-stamp decoration on the top of the rim
42	2c	15	A2	Tripod pitcher body sherd decorated with combing
43	3	228**	C1	Everted rim of a cooking pot
44	3	228**	B4	Hollow ware base
45	4a	8	D2	Everted-rimmed globular-bodied cooking pot
46	4a	8a	E1b	Bridge spout of a glazed pitcher
47	4a	36	A2	Lid-seated cooking pot rim
48	4a	36	A2	Everted rim of a cooking pot
49-50	4a	36	C1	Everted rims of cooking pots
51-61	4a	36	B1	Everted rims of cooking pots; Fig 59.56-60 are infolded and wheelthrown
62	4a	36	B1	Cooking pot body sherd with an applied strip
63	4a	36	B3	Tripod pitcher or jug body sherd with combed decoration

(cont)

(cont)

FIG 59 (M7.D10)	PERIOD	CONTEXT	FABRIC	DESCRIPTION
64	4a	36	B3	Thumbed jug base
65	4a	36	B3	Tripod pitcher or jug handle
66	4a	36	A2	Tripod pitcher body sherd with combed decoration
67	4a	36	A2	Tripod pitcher body sherd decorated with grooves
68	4a	36	A2	Tripod pitcher or jug body sherd with roller-stamped decoration
69	4a	36	A2	Tripod pitcher body sherd decorated with a linear groove
70	4a	36	A3	Tripod pitcher or jug body sherd with roller-stamped decoration
71 & 72	4a	36	C2	Jug body sherds with roller- stamped decoration
73	4a	36	G2a	Sagging base from 'St Neot's type jug'. The internal occlusions are leached
74	4a	36	D3	Tripod pitcher rim, internally and externally glazed

(\*Layer 7 had a confused upper level which included early 13th century pottery, possibly due to cultivation (M3.C2))

(\*\*Layer 228 was a band within the presumed period 3 rampart. Fig 59.44 (16th century) may have been impressed in this layer during the machine clearance of the site; it otherwise presumably indicates an unseen disturbance)

Sherd Count: Period 2c - Layer 7: M3.D5  
Period 2c - Layer 15: M3.D5  
Period 3: M3.D9  
Period 4a: M3.D14

# ROOF FURNITURE AND BUILDING MATERIALS

## INTRODUCTION

Ceramic ridge tiles are first found in Hereford in contexts dated to the mid 13th century and were in common use between the late 13th and early 15th centuries along with ceramic roof finials and louvers. By the mid 16th century flat ceramic roof tiles and brick were also being used and these various types continued throughout the 17th and early 18th centuries.

Five groups of ridge tiles have been recognised in Hereford on fabric criteria and one of these groups has been subdivided on form. One group was made in the Malvern Chase area but the others are from unknown local sources. The flat roof tiles and bricks all have the same fabric and probably came from one source within the county.

## A2 - RIDGE TILE

### Fabric

The one fragment found contains rounded limestone (0.2mm to 2.0mm), sandstone (0.1mm to 0.9mm) and quartz (0.2mm to 0.4mm) in a matrix of anisotropic clay containing angular quartz and white mica, mainly less than 0.04mm but up to 0.1mm. The fragment is oxidized with a grey core.

### Description and Frequency

A single fragment of a ridge tile was found at Bewell House. It has a thin glaze on the upper surface and a thick moulding along the bottom edge. The underside of the tile has traces of a sandstone and limestone gravel.

### Dating

The tile comes from a mid 13th century context and is the earliest dated ridge tile from the city.

### Distribution

No other tiles of this fabric have been found either in the city or at other sites in the county. The fabric is similar to that of the A2 pottery and to that of A9 floor tiles, and could have been produced in the vicinity of Hereford.

### Published Example

<u>FIG 60</u> (M7.E1)	SITE	PERIOD	CONTEXT	DESCRIPTION
1	Bewell House	4	346	Corner fragment of a tile with a thick moulding

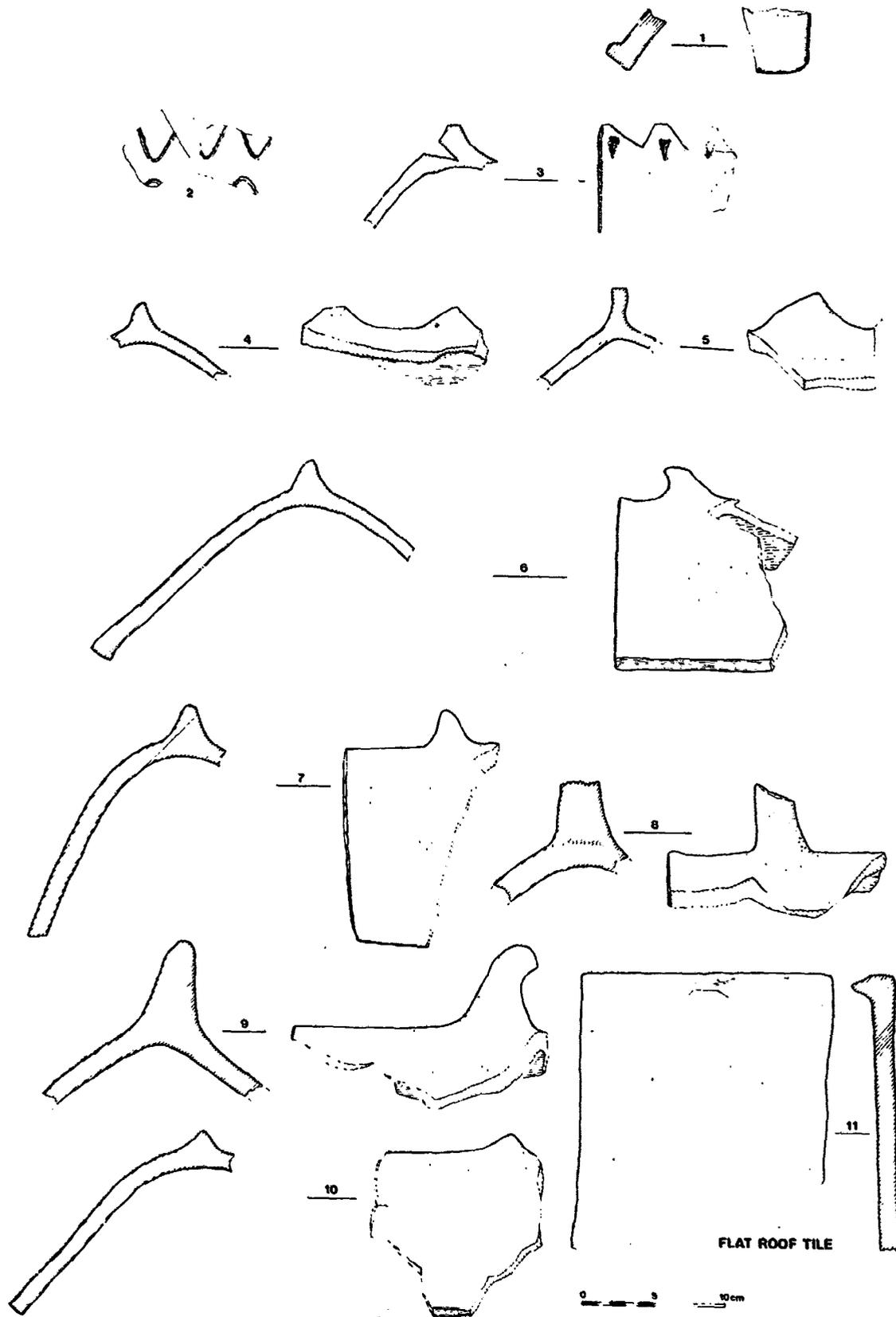
## A5 - RIDGE TILE

### Fabric

These tiles are identical in fabric to the A5 pottery (p/m Fig 68.11).

### Description

The ridge tiles are usually between 10mm and 17mm thick with an average of 15mm and have a thick green glaze, oxidized surfaces and a grey or black core. A few fragments have a wavy line decoration. A single example consists of a ridge tile with part of the base of a finial (similar to Fig 61.3:M7.E6) but no examples of decorated crests have been found. Most tiles are knife-trimmed at the edges and on parts of the underside.



AGV.R9

Fig 60 Ridge tiles. Fabric A2 (no 1); A5 (no 2);  
A7 (nos 3-6); A10 (no 11); B4 (nos 7-10)

M7.E1

### Dating and Frequency

The earliest contexts to produce these tiles are of late 13th century date. They are found in 14th century contexts but are not common.

### Distribution

No ridge tiles of this fabric have been found outside Hereford.

### Published Example

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<u>FIG 60</u> (M7.E1)	<u>SITE</u>	<u>DESCRIPTION</u>
2	(9400)	Fragment of a tile with a wavy line decoration

---

## **A6 - FINIAL**

### Fabric

The one fragment found is identical in fabric to A6 pottery.

### Description

A small fragment of a finial of uncertain shape was found at Blackfriars (Butler, 1960).

### Dating

The fragment was unstratified but is probably of late 13th or 14th century date.

### Distribution

No examples have been found outside Hereford.

Published Example

<u>FIG 61</u> (M7.E6)	SITE	DESCRIPTION
1	(7240)	Small fragment of a finial

**A7 - ROOF FURNITURE**

Fabric

The various types of roof furniture in this group have a fabric identical to that of the pottery groups A7b and A7d (p/m Fig 68.12 & 13).

Description

Three forms of ridge tile occur. The first is decorated with knife-cut crests, usually 25mm to 30mm apart and 20mm deep, with stabbing from a wedge-sectioned tool on one side only (Fig 60.3:M7.E1). This type is usually green-glazed and reduced with an oxidized underside. The second type has either knife-cut crests (Fig 60.4 & 5) or handmade knobs (Fig 60.6), is sparsely covered with a green specked glaze, and is oxidized. These tiles, which are often slightly thickened at the edges, are between 7mm and 15mm thick. Small fragments are found of a third type of ridge tile. This is thick with a clear glaze and oxidized fabric and is very similar to the products of the post-medieval Herefordshire kilns (A7d).

A roof finial and louver of fabric A7 have been found in the city. The roof finial (Fig 61.2 & 3:M7.E6 and Fig 62) was found in 1927 during road works on the site of the Templar Church of St Giles outside St Owen's Gate (Watkins, 1927). The ridge tile is similar to most of those of type 2 but has a wheelthrown

cylinder attached to it. The globular finial fits into this cylinder although there is no trace of mortar to hold it in place. The main body of the finial is wheelthrown but the spike was added using a strip of clay around the join. The top half of the finial and the ridge tile are covered with a green specked glaze. Parts of several similar finials have been found during excavation work in the city.

The louver (Fig 61.4:M 7.E6) was partially reconstructed from a number of small fragments found in 14th century soil levels and pits at Berrington Street. The reconstruction is conjectural but the overall size and shape are probably correct. It has two types of vent, one with a protective hood and the other simply cut out of the body. Both were knife-trimmed. A single knob was found but its position is conjectural. The louver appears to have been open-topped because although there is an added cylinder around the top, the inside surface of this and the top part of the body are both flaked and pitted, apparently due to exposure to the elements. The piece is covered externally with a clear glaze and is oxidized.

#### Dating and Frequency

Type 1 and type 2 tiles are first found in late 13th century contexts and are present throughout the 14th and 15th centuries. They are not very common, the published example (Fig 60.3:M being from the castle. Some type 2 tiles have been found in post-medieval contexts alongside type 3 tiles and may have still been in use although it is unlikely that they were still being produced. Type 3 tiles first occur in the mid 16th century and are present throughout 17th century contexts.

#### Distribution

The roof tiles in fabrics A7b and A7d have a similar distribution to the pottery of the same fabrics.

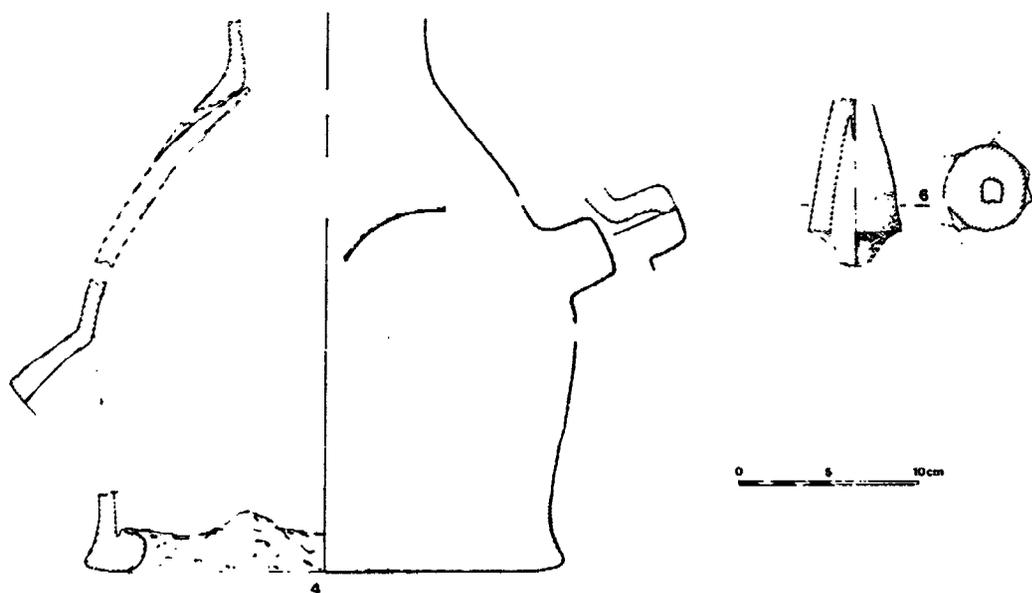
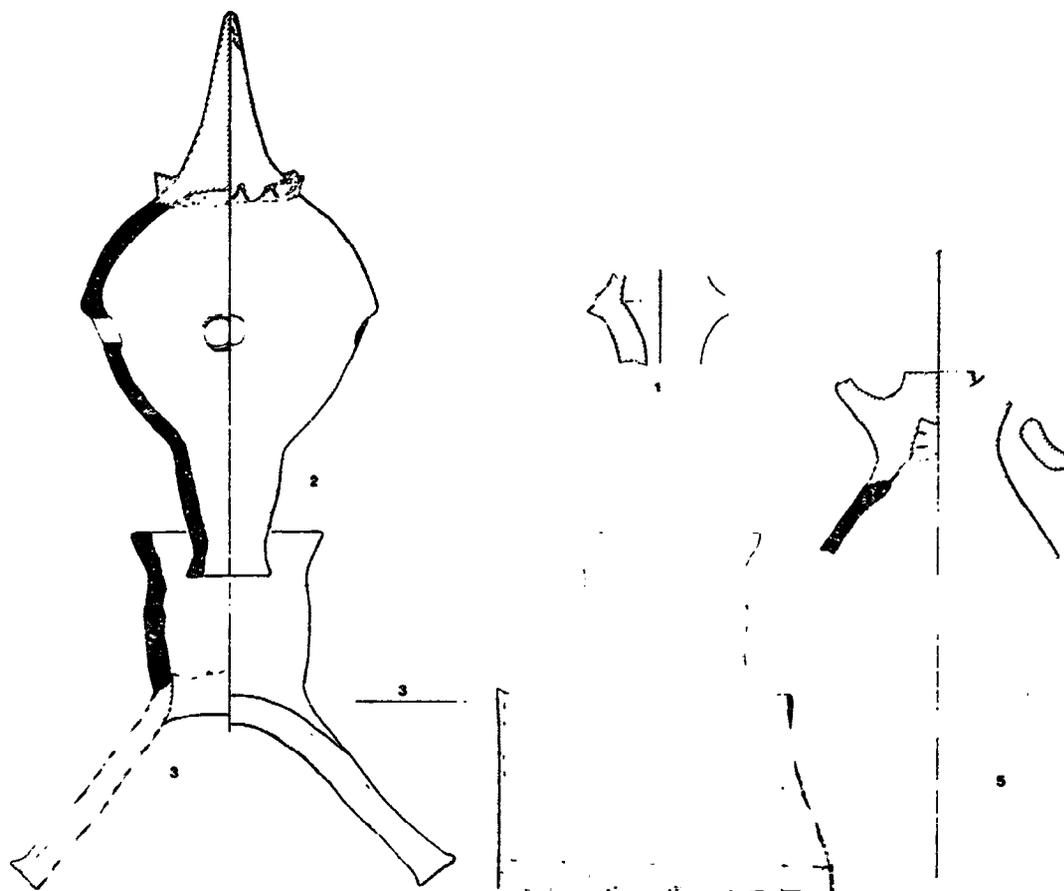
Published Examples (Figs 60:M7.E1 and Fig 61:M7.E6)

FIG	SITE	PERIOD	CONTEXT	DESCRIPTION
60.3	(9400)	-	-	Fragment of a tile with knife cut crests (Type 1)
60.4	Berrington St 4	4	812	Fragment of a tile with knife cut crests (Type 2)
60.5	Berrington St 4	-	u/s	Fragment of a tile with a knife cut crest (Type 2)
60.6	Berrington St 1	5	P1	Large fragment of a tile with a hand-made knob (Type 2)
61.2 & 3	(379)	-	-	Roof finial ( <u>Fig 62</u> ) (M7.E3)
61.4	Berrington St 4	5	714 738 & 784	Louver (M7.E4) (p/m <u>Fig 68.14</u> )

## A10 - FLAT ROOF TILES & BRICKS

### Fabric

Occasional large angular sandstone fragments and rounded clay pellets up to 7.0mm are found in a matrix of anisotropic clay containing a large quantity of angular quartz and white mica, mainly less than 0.1mm. A few rounded fragments of quartz, sandstone and felspar up to 0.1mm occur. The presence of the large sandstone and clay pellet inclusions make this fabric quite distinctive. Similar inclusions occur in samples of clay from several local areas. Both tiles and bricks are oxidized (p/m Fig 68.15).



AGV RS

Fig 61 Roof finials and louvre. Fabric A6 (no 1);  
A7 (nos 2-4); B4 (nos 5 & 6)

M7.E6

### Description

FLAT ROOF TILES - No complete examples have been found but the tiles are about 180mm wide and between 15mm and 18mm thick. There is a lug close to one end, about 20mm to 30mm wide.

BRICKS - Examples seen are between 110mm and 115mm wide and 46mm and 64mm thick. Some have impressions of grass on the top or bottom surfaces and of the grain of the wooden mould on the sides.

### Dating and Frequency

All the post-medieval flat roof tiles and bricks from Hereford are of this fabric. They first appear in the mid 16th century and are common in the 17th and early 18th centuries.

### Distribution

Brick and flat roof tiles are rare in excavated collections so details of the distribution of this fabric would be better if they were based on an examination of standing buildings.

### Published Example

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<u>FIG 60</u> (M7.E1)	SITE	PERIOD	CONTEXT	DESCRIPTION
11	Berrington St 4	6	651	A large part of a flat roof tile with a single small lug

---

## **B4-ROOF FURNITURE**

### Fabric

Although the fabric is broadly identical to the B4 pottery fabric, some ridge tiles have a higher quartz sand content than

the pottery and no attempt was apparently made to remove the large angular igneous rock fragments during manufacture (p/m Fig 68.16).

### Description

Ridge tiles are usually decorated with hand-formed knobs, normally 10mm to 20mm tall (Fig 60.7 & 10:M7.E1) but occasionally up to 50mm tall (Fig 60.8 & 9) and sometimes bent over. Most of the tiles have a sparse green-specked glaze and are usually oxidized, sometimes with a grey core. The tiles range from 8mm to 14mm thick. No examples with knife-cut crests have been found in Hereford.

A few thick tile fragments may be from flat roof tiles. They are more heavily tempered than the thinner tiles and are about 15mm thick.

Parts of finials with wheelthrown bodies have been found which appear to be similar in design to the complete A7 finial but have three added spikes instead of the applied thumbed strip (Fig 61.5 & 6:M7.E6). They have a green specked glaze and are oxidized.

### Dating and Frequency

Ridge tiles are found in late 14th and early 15th century contexts alongside A7 ridge tiles and became very common in the mid 16th and 17th centuries. The thick tiles are found in 17th century contexts but are not common.

### Distribution

Tiles of this Malvern Chase fabric are common on late and post-medieval sites in the county. Brick making was also an important industry in the Chase in the 16th century but no examples of such bricks have yet been found in Hereford although one fragment has come from Breinton.

Published Examples (Figs 60:M7.E1 and 61:M7.E6)

FIG	SITE	PERIOD	CONTEXT	DESCRIPTION
60.7	Berrington St 3	4	P502	Large fragment of a tile with a small handformed knob
60.8	Berrington St 4	-	u/s	Fragment of a tile with a large, broken, handformed knob standing vertically
60.9	Berrington St 2	6	P114	Fragment of a tile with a large, slanting, handformed knob
60.10	Berrington St 2	6	P114	Fragment of a tile with a small handformed knob
61.5	(6757)	-	-	Central fragment of a finial with spikes
61.6	Cantilupe St	-	u/s	Upper part of a finial

### COMMENT

The study of roof furniture and ceramic building materials differs from that of pottery in several aspects, particularly in terms of longevity. Ridge tiles would have been an infrequently purchased item and once obtained could remain in use throughout the life of a building, and still be fit for reuse. It follows that the fragments found during archaeological excavations could either have been broken and discarded when they arrived on the site or could have been disposed of several hundred years later. The date of first arrival of a type in the city is the most significant. In Gloucester, ridge tiles are found repeatedly in late 12th and early 13th century contexts, but they are absent in contexts of this period in Hereford. It could be that during this period ridge tiles were used on certain buildings

in the city but not near any of the excavated areas. The use of ridge tiles in the mid 13th century is attested at Bewell House by a single tile (A2), and at Berrington Street in the late 13th century again by a single tile (A5). The early A7 ridge tiles are probably also of late 13th century date. By the 14th century, ridge tiles (mainly of fabric A7) are common at all sites and by the early 15th century tiles of fabric B4 are also found. B4 ridge tiles are the predominant type during the 15th and 16th centuries, and it is during the 16th century that ridge tiles are first found in conjunction with flat roof tiles and bricks. The ridge tiles were apparently produced alongside pottery vessels, but the flat roof tiles and bricks were manufactured at separate centres.

# FLOOR TILES

## INTRODUCTION

Although fragments of inlaid and plain 14th and 15th century floor tiles have been found during the recent archaeological excavations in Hereford, all have been in post-medieval or modern contexts. Earlier excavations and observations have also produced tiles and there are three re-laid groups in Hereford churches. The distribution is as follows:

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SITE/BUILDING	DESCRIPTION	ILLUSTRATED FIG 63.M7.E13
Berrington Street	10 fragments, all in a modern drain trench on site 4	5-14
	2 fragments in post-medieval contexts on sites 1 & 2	-
Brewery	2 small fragments	-
Liberal Club	1 fragment	-
Hereford Castle	1 fragment (Leach, 1971)	-
Kings Ditch	1 fragment in the northern site (Heys and Norwood, 1958)	-
Greyfriars Monastery	Fragments found during allotment digging in 1918 (Watkins, 1918)	1-4
Blackfriars Monastery	Fragments found during archaeological excavations in 1958 - none were <u>in-situ</u> (Butler, 1960)	15-20
All Saints Church	Set in cement in the eastern pier of the north aisle	-
Hereford Cathedral	Re-laid in the Lady Chapel	-
Hereford Cathedral	Re-laid in the Booth Chapel over the north porch	-

---

The group of tiles from Berrington Street 4 could have come from a religious site and may well have come from another site in the city as part of the backfilling material used in the drainage trenches early in the 20th century. The tiles from Greyfriars monastery, founded by AD 1250 on land outside Friars' Gate (Vol 2, Fig 4 but mistakenly shown by Speede as Whitefriars) and those from the Blackfriars Monastery, which was re-established on a new site to the north of the city (Vol 2, Fig 4) between cAD 1319 and 1321 were doubtless originally used in the buildings on these sites. The same is most likely the case with the re-set tiles in All Saints Church and the Cathedral.

## **A9 - BREDON TYPE**

### **Fabric**

The tiles are hard and oxidized but often with a reduced core. Scattered rounded fragments of limestone, sandstone, and clay pellets up to 0.9mm across with rarer rounded quartz and iron ore fragments occur in a matrix containing angular quartz and white mica up to 0.1mm long.

### **Description**

Where measurable the Hereford examples are found in two sizes, 190mm square (found only at Berrington Street site 4) (Fig 63.8 & 12:M7.E13) and 150-160mm square (found at Berrington Street site 4, Blackfriars and Greyfriars) (Fig 63.3. 4, 11, 17).

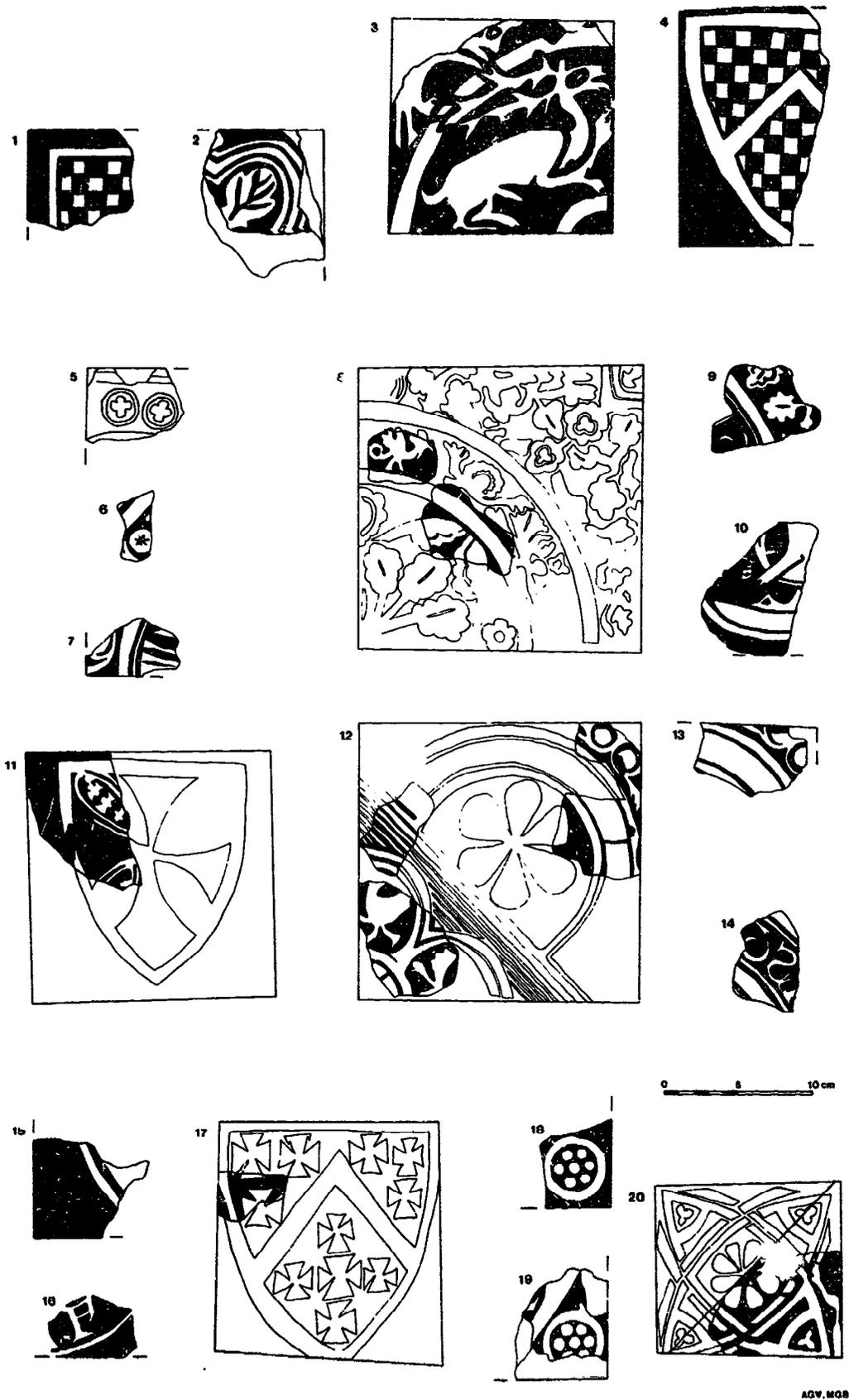


Fig 63 Floor tiles. Fabric A9 (nos 2-4 & 6-19);  
B4 (nos 1 & 20); C3 (no 5)

The designs are clearly inlaid and the base of the tiles usually knife-trimmed. One tile, from the Brewery, may be line-impressed. The larger tiles are paralleled only at Leominster Priory, where there are complete examples, but the smaller tiles have a wider distribution, notably Bredon Church and Abbey Dore Priory. The larger tiles average 33mm thick and the smaller ones, 25mm.

### Dating and Frequency

None of the Hereford tiles are securely stratified, although the occurrence at Blackfriars indicates that they were being produced after AD 1319. The Heraldry and stylistic affinities of the tiles suggest a mid 14th century inception date but the factory could still have been in operation in the late 14th century.

### Distribution

The majority of the tiles from the religious sites and the Berrington Street site 4 collection are in this fabric as are the two tiles from the Brewery, the one tile from the Liberal Club site and the one tile from the Castle 1968-9 site.

The petrology of the tiles suggests an origin in Herefordshire although none of the pottery or roof tile fabrics found in Hereford has exactly the same petrology.

Bredon type tiles have been found at St Oswalds Priory and Blackfriars - both in Gloucester, and at Tewkesbury. In the county of Hereford and Worcester they have been found at Abbey Dore Priory, Bredon Church, Leominster Priory and Little Malvern Priory, and in Shropshire at St Peter's Church, Ludlow.

### Published Examples

<u>FIG 63</u> (M7.E13)	SITE	NOTES
2-4	Greyfriars (1314)	
6-14	Berrington St 4	<u>Figs 63.8 &amp; 11:</u> The reconstructions are based on complete examples at Leominster Priory and Abbey Dore respectively
15-19	Blackfriars (7240)	<u>Fig 63.17:</u> The reconstruction is based on a complete example at Abbey Dore

### **B4 - MALVERN CHASE**

#### Fabric

Similar to that of the pottery (M6.E1-E12) but often with a higher quartz sand content.

#### Description

Only two tiles from Hereford could be examined, although some in the Booth Chapel may be of this fabric. One, from Greyfriars (Fig 63.1:M7.E13) is a copy of a small Bredon type heraldic design (compare with Fig 63.4) and the other, (Fig 63.20) a 120mm square tile with a repeating pattern, is also found at Little Malvern Priory.

#### Dating and Distribution

There is little to add to the distribution of the Malvern Chase tiles published in 1977 (Vince in Peacock, 1977, 278 and Fig 6) but the relative date of the industry is now clearer. Several tiles have now been found bearing designs made with a Bredon type tile stamp and in some instances it is clear that the Malvern Chase tiles must be later. Another group of tiles re-

uses stamps from the Great Malvern tilery and is therefore late 15th century or later in date. The tiles in All Saints Church use the Great Malvern designs but there were no samples available for fabric analysis.

#### Published Examples

<u>FIG 63</u> (M7.F13)	SITE	NOTES
1	Greyfriars (1314)	Copy of heraldic design in <u>Fig 63.4</u>
20	Blackfriars (7240)	The reconstruction is based on a complete example at Little Malvern Priory

### **C3-DROITWICH TYPE**

#### Fabric

The fabric is hard and oxidized with a reddish-yellow (5YR 6/6 to 2.5YR 5/6) core. There is a variable quantity of mainly rounded quartz sand and small quantities of brown chert, sandstones and siltstones. The sand is mainly poorly sorted with few grains larger than 0.6mm. The clay matrix contains angular and subangular quartz up to 0.2mm with some white mica up to 0.1mm.

#### Description

The Hereford examples are too fragmentary to measure, except for those in the Cathedral Lady Chapel which are some 120mm square and paralleled at Worcester Cathedral in the late 14th century (Keen, 1979).

From sites in the Severn Valley, Droitwich type tiles have been found ranging from 110mm square to 150mm square. The tiles have a distinct bevelled edge and the base is usually sanded. The designs are made using the stamp-on-slip method.

### Dating and Distribution

None of the Hereford examples are in datable medieval contexts. Some of the designs closely copy early 14th century tiles, for example those in Warwickshire, but these designs are found in a late 14th century pavement at Worcester Cathedral. There is probably some overlap in date with the Great Malvern tiliary, since both Great Malvern and this factory contribute designs to another factory, producing Canynges-type tiles (Eames, 1951).

Droitwich type tiles are named after the tile kiln found in AD 1833 at St Mary Witton, Droitwich and samples from sites throughout the Severn Valley and Hereford have the same range of petrology. The tiles have a wide distribution and in the borderland are found at Ludlow, Monkland Church, and Leominster Priory.

In Hereford tiles of this fabric have been found at Berrington Street sites 1, 2, and 4; Kings Ditch and the Cathedral Lady Chapel. Their distribution in the town suggests that they may have been laid in late medieval town houses. Of the eleven fragments found, four were decorated, two plain, and the remainder had worn surfaces.

### Published Example

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<u>FIG 63</u> (M7.E13)	SITE
5	Berrington St 4

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## **SUMMARY**

The earliest floor tiles found in Hereford are of fabric A9, Bredon type tiles. They were factory-made and have so far been found at seven sites outside Hereford. Petrology indicates a local source and all seven sites are within 30 km of Hereford.

These tiles are the earliest found in the area with the exception of a group of relief decorated tiles from Abbey Dore, which may be 13th century.

Bredon type tiles may have first been produced in the mid 14th century and tile production at Malvern Chase probably started soon afterwards, initially using Bredon-type tile stamps. The rarity of Malvern Chase tiles in Herefordshire probably indicates that they are broadly contemporary with the Bredon-type tiles, although some are definitely of 15th century date. In the late 14th century a third group occurs; Droitwich-type tiles. These tiles were probably mainly in use in the late 14th and early 15th centuries. They may have been supplied to secular as well as religious houses.

In the mid 15th century a tiler was set up at Great Malvern Priory and tiles from this tiler or a daughter tiler set up in the borderland supplied three sites in the county, Stretton Sugwas, Croft, and All Saints Church, Hereford. The available evidence suggests that these were the latest ceramic floor tiles to be used in the county.

# FIRED DAUB AND CLAY OBJECTS

## INTRODUCTION

The large quantity of burnt daub found associated with the grain drying ovens in period 1 of the Victoria Street site together with some fired clay objects used as post-packing material in period 2 were submitted for petrological analysis. Mould fragments in the city were also examined.

## FIRED DAUB - Victoria Street period 1

A large amount of fired daub was found in the earliest occupation levels on the Victoria Street site. Most of the material came from the destruction levels of the two grain drying ovens (89 and 309) of period 1 although some pieces were used as post-packing material in postholes 308 and 364 of period 2 and occasional fragments were found in later contexts.

The individual fragments usually have one flat face and one with impressions of wattle framing and vary between 10mm and 60mm in thickness although 30 to 40mm is normal. The wattle impressions vary from 10mm to 30mm in diameter. Fired daub from accidentally burnt buildings is rarely as highly fired as this material and usually includes more traces of organic debris. The similarity of the fragments in fabric, firing and form suggests that they all derive from the superstructures of the two grain drying ovens. No indication of the shape or form of these superstructures could be established from a study of the fragments.

The clay fabric (p/m Fig 66.14) contains rounded fragments of limestone, 0.2mm to 2.0mm across, rounded clay pellets of the same size, a few rounded fragments of sandstone up to 0.9mm across and a few rounded quartz grains up to 0.5mm.

The inclusions are in a matrix of anisotropic clay with angular quartz and mica normally up to 0.04mm but exceptionally up to 0.3mm.

FIRED CLAY SLABS - Victoria Street period 2 (Fig 64.16:M7.F9 and Fig 65)

A number of fragments of fired clay, of a different fabric to the oven daub and without wattle impressions, were found in period 2 levels. The larger pieces were found in postholes 103 and 361 but two other fragments were in the period 2 building destruction layer 73. The larger pieces from the postholes have been joined together to form parts of three slabs.

They are all roughly rectangular (200mm by 190mm; 250mm by 160mm and 240mm by 210mm) and have one flat and one uneven face, and a maximum thickness towards the centre of some 50 to 60mm. The edges of the objects are rough, as though they had been broken from a larger slab, but it is clear from the oxidation that they were fired as found. The flat surface has traces of wooden planking, possibly used to smooth off the face, but the other surface is uneven and appears to have large round pebble impressions. The flat face and edges of the objects are oxidized but the core and parts of the uneven faces are grey or black. It is apparent that air was restricted from the undulating surfaces during firing.

The fabric of these objects (p/m Fig 66.15) is similar to that of the fired daub from the ovens except that the rounded limestone inclusions are absent and quartz and sandstone inclusions are rare. They could have been made from the same clay as the daub if the latter material had been tempered with a predominantly limestone sand.

The objects were presumably reused as posthole packing and therefore pre-date the latest phase of the period 2 timber building. They could thus belong to period 1 or the early part of period 2. Their use is uncertain. The uneven oxidation suggests that they were fired with the flat side uppermost and the uneven surface supported on pebbles above the fire. They may have formed part of the oven structures although no fragments were found associated with the oven debris. It is perhaps more likely that they were used in domestic cooking as flat baking trays.

#### MOULD FRAGMENTS - (Fig 64.1-13:M7.F9)

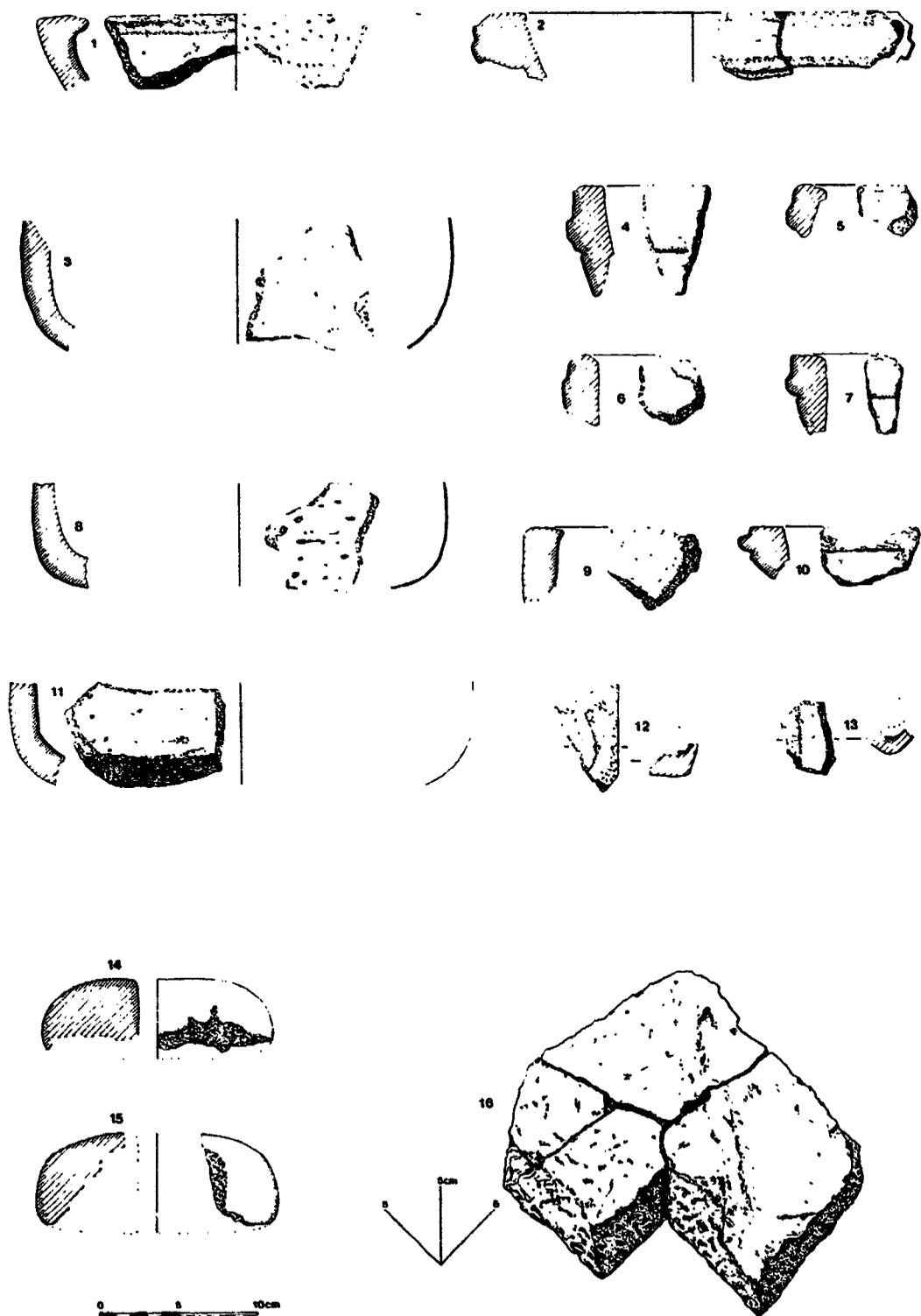
A few fragments of moulds were found in post-medieval contexts at Cantilupe Street and at Bewell House but the large majority are from two areas; the Brewery and Berrington Street site 4.

The majority of the pieces from the Brewery were from the fill of the period 2b furnace, 169 although a few fragments were found in the area of the period 4b feature 92. At Berrington Street, the fragments were mainly in the period 5 pits 760 and 762 associated with the working area 759. The stratified finds are all within the period from the mid 12th to the 16th century.

In all cases, the fabric is similar to that of the local clays with a high amount of fine quartz silt, numerous specks of white mica, and occasional rounded fragments of quartz and sandstone up to 1.00mm. The moulds contain numerous voids up to 10mm long and 1mm wide caused by the burning out of organic temper. They are soft and were fired at a low temperature.

It is probable that the Berrington Street area was associated with vessel manufacture and the Brewery with two periods of bell manufacture (M3.C10-D3 and D12-E2). Unfortunately all the fragments are small and mainly devoid of typological features. Attention is drawn, however, to Fig 64.12 which appears to be from a circular-sectioned handle mould and Fig 64.13 which may be from a foot mould.

<u>FIG 64</u> (M7.F9)	SITE	PERIOD	CONTEXT	DESCRIPTION
1	Bewell House	7a	99	Rim: outside part of mould
2	Berrington St 4	5	760	Rim: inside part of mould
3	Berrington St 4	5	760	Inside part of mould near base
4	Berrington St 4	5	760	Rim: inside part of mould
5	Berrington St 4	5	759	Rim: inside part of mould
6	Berrington St 4	5	759	Rim: inside part of mould
7	Berrington St 4	5	759	Rim: inside part of mould
8	Brewery	4c	204	Inside part of mould near base
9	Berrington St 4	5	759	Rim: outside part of mould
10	Brewery	4c	204	Rim: inside part of mould
11	Brewery	4c	204	Outside part of mould near base
12	Berrington St 4	5	760	Mould, possibly part of a handle
13	Berrington St 4	5	760	Mould, possibly part of a foot



MOS:RS

**Fig 64** Fired clay objects. Mould fragments (nos 1-13); loom weights (nos 14 & 15); Clay slab ( no 16)

LOOM WEIGHTS - (Fig 64.14 & 15:M7.F9)

Fragments of clay loom weights were found on several sites near the line of the western defences. The main accumulation was in the soil layers on the tail of the turf and clay rampart (Victoria Street period 5c; Berrington Street sites 1-3 period 2a), but fragments were found in the destruction levels of Berrington Street site 2, period 1 (layers 108 and 111).

All the fragments had been fired and were partially oxidized. Some fragments had split off the main body and looked very much like crude potsherds. However, in one case these could be stuck back on to the weight. The two reconstructable fragments are of the 'bun-shaped' type, probably formed as a lump rather than the 'doughnut-shaped' type which was formed as a sausage of clay.

The fabric contains a large quantity of fine angular quartz from 0.01mm to 0.1mm with a few larger inclusions. White mica shreds are common and scattered rounded grains of quartz, sandstone and felspar and a single grain of tourmaline are present. The clay matrix is anisotropic. The fabric is similar to that of pottery in group A suggesting that the weights were made from local clays.

Inventory

NUMBER	SITE	PERIOD	CONTEXT	DESCRIPTION	ILLUSTRATION
1	Victoria Street	5c	L22	Large fragment	Fig 64.15: M7.F9
2	Berrington St 1	2a	L58	1 fragment	
3	Berrington St 2	1	L108	1 fragment	
4	Berrington St 2	1	L111	4 fragments	
5	Berrington St 2	1	F289	1 fragment	
6	Berrington St 2	1	F349	2 fragments	
7	Berrington St 2	2a	L107	17 fragments	} Fig 64.14: M7.F9
8	Berrington St 2	2a	F296	13 fragments	
9	Berrington St 2	2a	F130	1 fragment	
10	Berrington St 2	-	u/s	1 fragment	
11	Berrington St 3	2a	L107	1 fragment	

## THE CERAMIC SEQUENCE

The chronology of the various fabrics and their frequency at any period, as set out in the previous sections, is based on the stratigraphy of the sites as recorded in volumes 1 and 2. The absolute dating is based on the association of the pottery with coins, with closely dated finds, and with material providing radiocarbon dates. The information obtained in this way has been arranged into a sequence which relates the changes in pottery fabrics and types from date to date. The absolute dating may well be altered by further work and will certainly be improved as more and better stratified groups are discovered. The relative sequence of pottery types and their changes with time is unlikely to be altered and can be used to give a broad picture of pottery usage in Hereford from the Roman period to the 19th century.

### ROMAN POTTERY

The excavations at the western side of the city produced a few sherds of pottery and some fragments of brick and tile which appear to be of Roman date. They were not found in the pre-Saxon soil levels and while it is probable that some sherds were deposited in the area in Roman times others may have been brought to the site along with defensive building materials at a much later date. The only closely dateable sherd (Fig 52.2:M7.C7) is a small fragment of Claudian Samian ware from Berrington Street but the others could be equally early.

## POST ROMAN TO 10TH CENTURY

The earliest phases of occupation in Hereford produced no pottery, although there was some evidence of clay exploitation. Underneath the Saxon western defences convincing evidence for occupation, including buildings, has been found. The Victoria Street site provides the clearest stratigraphy with two main periods of occupation sealed beneath the earliest defence. This area was excavated by hand in a wide cutting and no potsherds were found in the pre-defensive periods. However, clay was extensively used in the construction of the superstructures of the period 1 grain-drying ovens on this site (M7.F5) and clay slabs from period 2 may have been used for baking (M7.F6). One sherd was found in an otherwise aceramic period 1 layer, L60, at Berrington Street together with a coin of Alfred, probably lost by cAD 925. This sherd was of fabric D1, a type which has also been found in what could be 9th century contexts at Gloucester. Together with this single potsherd were over 200 food bone fragments and it is clear that pottery was not in common use at this time.

## THE 10TH TO 11TH CENTURIES

In several excavated sequences the earliest pottery found is of fabrics G1 (West Midlands early medieval ware) and D1 (Cotswold ware cooking pots, probably from a source in or near Gloucester). The stratigraphy suggests a sudden influx of pottery rather than a gradual introduction, although finds were mainly from soil levels which probably accumulated over a length of time. The excavations did not produce any firm stratigraphical evidence for the length of time during which West Midlands ware and Cotswold ware were in use. The earliest context containing West Midlands early medieval ware was deposited some time later

than the construction of the stage 2 turf and clay timber-faced rampart around the city. The soil levels immediately above the tail of this rampart contained only three fabrics G1, and D1, and sherds from a red-painted pitcher of E1a, (Stamford ware) dated to the early 10th century. West Midlands early medieval ware is the most common fabric during this period, and, where the soil layers can be divided into upper and lower levels, the same high proportion of this ware is found in both (10% fabric D1; 90% fabric G1).

In the period 2b building levels on Berrington Street site 4, fabric D1 accounts for about 23% of the total assemblage, and, although G1 still predominates, there are also two glazed fabrics, E1 and A7a. These building levels overlie a layer in which only a few sherds of fabric G1 occur and are sealed by the floor of a building of late 11th or early 12th century date.

Typological variations in fabric D1 and G1 are very slight throughout their whole period of use and cannot be used to help establish a more precise dating sequence. External evidence for the dating of these wares is also slight. The hoard found in Chester, and dated to about AD 970, was contained in a pot of West Midlands early medieval ware, but it may not be from the same source as the Hereford material and production dates may vary. West Midlands ware (G1) and Cotswold ware (D1) occur together in a pit at Sidbury, Worcester, from which a radiocarbon date centred on the late 9th century was obtained (information E Morris). The fabric sequence at Gloucester suggests a long life for fabric D1 from about the early 10th century to the early 11th century when it overlaps fabric D2. The red-painted Stamford ware vessel (E1a) from Hereford helps to confirm the suggested early 10th century starting point for both D1 and G1.

The distribution of fabrics D1 and G1 within Hereford is mainly restricted to sites within the line of the turf rampart. However, excavations outside these defences have produced a few examples. Most came from the earlier levels at the Brewery with only occasional sherds at Bewell House. Three sherds of fabric G1 were found in a small trial excavation at Drybridge House, to the south of the river (Vol 2, 69 and Shoesmith, 1975).

#### LATE 11TH TO EARLY 12TH CENTURIES

There seems to be an archaeological hiatus between the levels characterized by fabrics G1 and D1, and those where fabric D2 predominates. Only two contexts have been found in Hereford which are thought to date to the late 11th or early 12th centuries. The earlier of the two was the filling of a ditch found in a trial excavation at Commercial Street (Sawle, 1977). The assemblage contained only 35 sherds in the proportions C1 (6%), D1 (3%), D2 (74%), E1b (1%), G1 (14%). The second assemblage was from Berrington Street site 1 above the building levels containing West Midlands early medieval ware (period 2c). The proportions in the Berrington Street group are similar to those from Commercial Street and in both cases approximately 80% of the pottery is of new types. This suggests either that a sudden change in pottery supply occurred or that intermediate parts of the sequence are missing.

#### 12TH CENTURY

Three coins help to provide a dating sequence for the majority of the pottery in the 12th century. A single vessel (Fig 39) is dated, by association with a coin (no 7 - probably lost between AD 1170 and AD 1183) to the late 12th century. Two other 12th century coins were found in period 3 levels at Bewell House, one (no 6) was most likely lost before AD 1120, and the other, (no 8) was probably lost in the earlier part of the

bracket AD 1185-1205. These coins provide a dating sequence for the majority of the pottery in the 12th century.

From the excavations there are five stratified groups of 12th century pottery which have several features in common. They came from:

SITE	PERIOD(S)	OCCUPATION
Castle G. n	2a	The earliest castle occupation above the cemetery (Vol 1, 17-21)
Victoria St (subway)	4/5 and 7	The fills of ditches before the construction of the stage 6 medieval city wall
Berrington St	3	Pits
Bewell House	1	Ditches and gullies earlier than the stage 5 extended gravel rampart
Brewery	2b and 2c	Occupation levels earlier than the stage 5 extended gravel rampart

All the groups contain fabrics B1, C1 and D2 and fabrics A7a, B2, D1, E1, and G1 are sometimes present. The most notable differences between these assemblages and earlier ones are the higher proportions of fabrics B1 and C1 and the presence of fabric B2. Fabrics D1 and G1 are only present at the Brewery, and, in view of the quantity of these two fabrics throughout that sequence, they are likely to be residual.

#### LATE 12TH TO 13TH CENTURIES

The last quarter of the 12th century and first half of the 13th century was a period of great change in the pottery industry supplying Hereford. New types were produced at existing sources and new production centres were set up. The number of

fabrics is so great (over fifteen being recognised); and the vessel typology so diverse, that it is very difficult to be precise about the appearance of new fabrics and the decline of old ones. There are five excavated assemblages in Hereford of this period, all of which are individual pits or pit groups. In apparent chronological order these assemblages are:

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SITE	PERIOD	OCCUPATION
Berrington St 1	3	Pits (M2.D10-E2)
Bewell House	3	Pit 384 (M2.G7)
Commercial St trial excavation	-	Pit 1152 (Sawle, 1977)
Western rampart		Pits 1 and 2 (Shoesmith, 1967)
Minor sites (City Arms)	-	Trench 4, Pit F12 (M3.F12-G6)

---

Comparable material was also found in the period 2c soil levels at the Brewery (M3.D3-D8).

The earliest assemblages are very similar to the earlier 12th century groups with the addition of fabric A2. The introduction of fabrics A3, A8, and D3 was followed by fabrics B3 and E2, and towards the end of the period, fabrics A4, A6, and C2 appeared. The time scale for the appearance of these new fabrics is unknown, but fabrics C2 (Worcester type jugs) and E2 (Ham Green jugs) are considered, on external evidence, to have started in the early 13th century. With the increase in one type of fabric, a corresponding decline is found in others. Thus fabrics B2 and D2 tend to disappear with the introduction of Ham Green jugs. On present evidence D3 tripod pitchers have a very short life span in Hereford and have been found only in the middle years of this period. Fabric C1, although present throughout the period, accounts for some 26% of the earliest assemblages but only 1% of the latest where it may have been residual.

## LATE 13TH TO MID 15TH CENTURIES

The major difference between assemblages of late medieval date and those of the earlier 13th century is the presence of fabric A7b, which first appears in small quantities but rapidly becomes the most common fabric. Bewell House site has a sequence which covers this date range. It consists of period 3 (early 13th century) followed by period 4 (mid 13th century) and period 5 (late 13th century onwards). This is the only good vertical sequence covering the later medieval period so far excavated in the city. On other sites this period is represented by isolated pits and garden soil accumulations. Thus at Berrington Street 1-3 although there are many pits containing predominantly fabric A7b, they cannot be put into a stratigraphic order because the ground surfaces associated with them were removed in antiquity. On Berrington Street 4 the soil levels survived (periods 4 and 5) and two groups of pits can be used although most of the associated soil levels contained intrusive and residual sherds. Berrington Street 1 period 5 pits contained sherds of fabric B4 jugs and are probably the latest pits in this date range so far discovered. They could be of late 14th or 15th century date.

Seriatting the various groups, with Bewell House period 4 at the beginning and the Berrington Street site 1 period 5 pits at the end produces a logical progression of fabrics. Fabrics A2 to A6 are present in small quantities throughout, while fabric A7b accounts for a small percentage of the assemblages at the beginning, increasing to about 68% in the middle of the date range and decreasing to less than half at the end. Fabric B1 cooking pots are predominant at the beginning but fall steadily to about 12% at the end. Fabric B4 jugs are present as the occasional sherd throughout the date range but account for up to 12% of the pottery towards the end.

Worcester type jugs (C2) are relatively common in the late 13th century but are completely absent at the end of the date range. Occasional sherds of fabric E3 were present in the later assemblages and one single stratified context contained sherds of a Saintonge jug (Fabric F1)((Berrington St 4, period 5, 720). Fabric G7 jugs are absent or rare in the early assemblages but form 12% or more of the pottery in the later ones.

It is clear that the major fabrics occur throughout the sequence although their relative proportions alter, and as a result although it is impossible to give a close date bracket for individual sherds or small groups, larger groups can be fitted into the sequence and an approximate date range established. The excavations have produced no coins or other objects associated with this range of pottery to establish an absolute chronology. However, the excavations at Blackfriars (Butler, 1960) produced a group of pottery from the soil build up which was assumed to be a deliberate levelling of the site immediately before the Friary buildings were constructed, which, on documentary evidence, is dated to AD 1319 or later. The fabric breakdown of the pottery from this build up, excluding a contaminated layer, is of interest: A2a (3%), A2b (1%), A4 (1%), A7b (55%), B1 (13%), B4 (7%), C1 (1%), E2 (1%), E3 (1%), G7 (18%). This group fits very late in the postulated series, with a suggested date early in the 15th century rather than the late 13th to early 14th century date suggested by Butler. This implies either that the suggested chronology is too long and that the latest groups are actually of the 14th century, or that this part of the Friary was not constructed until a considerable time after the land grant had been received.

## THE LATE 15TH AND 16TH CENTURIES

There are no excavated stratified groups of pottery between the latest contexts of the previous period, which, as suggested above, are at the latest of the early 15th century, and the earliest post-medieval features, which are probably of mid 16th century date. This gap is in part due to machine removal of soil from many of the sites and although the period was examined at Bewell House (period 6), the contemporary pottery was found to be mixed with a large quantity of residual material. Two fabrics have, however, been recognised as being mainly of late 15th or early 16th century date. Fabric B4, which was present in small quantities in the 14th and early 15th centuries, rapidly becomes the most common. The other fabric, Tudor Green ware (G6), is most common at Bewell House but occurs elsewhere in the city. These two fabrics together form the majority of the pottery at Wallingstones, in period 4 (Bridgewater, 1970).

During the 16th century yet another fabric appears. This occurs in the form of black glazed cups (fabric G8). A few contexts contain mainly fabrics B4, G6 and G8, the largest group being from Berrington Street 4 (Period 6, context 730). This pit contained over 300 sherds of which about 50 were considered to be residual medieval fabrics. The proportions by sherd count of the remainder were A7c (1%), A7d (2%), B4 (66%), F2 (less than 1%), G4 (2%), G8 (29%). Roof tile and brick (of fabric A10) were also present. The one sherd of fabric F2 was Raeren Stoneware (current between about AD 1480 and 1550). A coin of Henry VII (coin 10) was found in the pit. It is of a type which was manufactured between about AD 1490 and 1500 but remained current into the mid 1540's. The evidence suggests an early to mid 16th century date for this group. The absence of clay pipes and the very small quantity of fabric A7d shows that the group is pre 17th century. Although local wares only

account for a small proportion of this assemblage there is a documentary reference to the village of Hope under Dinmore, north of Hereford, being called Potters Hope in AD 1557 (Cal Pat 3/4, Philip and Mary, 481).

In the late 16th century there are two important groups of pottery:

Bewell House, period 6, pit 240 (this contains a higher quantity of fabric A7d together with Frechen stoneware (F2) and is therefore post-AD 1550.

Berrington Street 3, period 6, pit 510 (also with a higher quantity of fabric A7d).

#### THE 17TH CENTURY

Large 17th century groups are rare from the excavations but those which do exist are distinguished from the later 16th century groups by the higher proportion of fabric A7d, the corresponding lower quantity of fabric B4, and the presence of clay pipes. The latter enable a more precise dating, especially for the last quarter of the century. Three groups, which can be compared, are, in probable chronological order:

- a A pit group (Berrington St 1, pit 5)
- b An unstratified but probably associated group found by workmen building the Telephone Exchange in Broad Street (City Museum Accession No 5604)
- c A group from the fill of a cellar (Berrington St 4, context 701).

The fabrics identified in these three groups are:

GROUP	A7c	A7d	A7e	B4	E6	E7	F2	F3	G5	G8
a	6%	33%	0	17%	0	6%	6%	6%	11%	17%
b	0	72%	0	23%	1%	0	3%	0	0	2%
c	0	0	72%	3%	22%	0	1%	0	1%	0

All three groups also contained clay pipes. These date group 'c' to the period AD 1670-1700 or a little later (M8.B7). A higher quantity of fabric A7 is found in the two later groups and in the latest group there is a change from fabric A7d to A7e, the Newent and Whitney kiln products. The Newent kilns are known to have been in operation in the 1670's (Vince, 1977). Fabric B4 is probably residual in the latest group and is much less common in both the earlier ones than in late 16th century groups. Staffordshire wares (E6) are only present in small quantities before the end of the 17th century, the sherd in group 'b' being an 'early Midlands yellow ware' vessel. Frechen stoneware (F2) is present in each group and tin glazed vessels (G5) are present throughout the century. Fabric G8 cups are only common in the earliest group where they are less common than in late 16th century assemblages.

#### THE 18TH AND 19TH CENTURIES

Two groups of early 18th century pottery were found close together in period 6 pits at Berrington Street: pit 407 (site 2) and pit 651 (site 4).

Fabric A7e is the only local fabric present in both groups, the majority of the pottery being of Staffordshire manufacture (E6), with a smaller quantity of tin-glazed wares (G5). A tankard of Westerwald stoneware with a Queen Anne stamp is from

pit 651 while a Staffordshire stoneware tankard also with a Queen Anne stamp is from pit 407. Both pits were probably filled in during the first quarter of the 18th century.

Features of periods 7 and 8 at Bewell House contain quantities of 18th and 19th century pottery which enable the presence or absence of certain types to be seen, but the material is not well stratified. The only large 18th century assemblage on the site, pit 99, also contains much material of earlier date. A group of pottery from a well at the City Arms (F4) contains only two fabrics, E6 (83%) and G5 (17%) and probably dates to the very late 18th or early 19th century.

It appears that fabric A7e is less common in the mid 18th century groups in Hereford than in Gloucester and conversely several Staffordshire wares, particularly those of types produced at Newent, are more common at Hereford. By the late 18th and early 19th centuries groups are dominated by non-local wares, in particular those of Staffordshire manufacture (E6) and those with tin glaze (G5).

# CONCLUSIONS

## FUNCTION

The majority of the early wares from Hereford were used as cooking pots and commonly have soot encrusting the exterior of the vessel. Such vessels were virtually the only type in use in the 10th century and comprised up to 85% of vessels well into the 13th century. By the 14th century only a quarter of the vessels found are cooking pots and by the end of the medieval period they are less than an eighth of the assemblages. This decline in the use of pottery cooking vessels is due to the appearance of cast bronze cooking vessels such as were probably manufactured at Berrington Street in the 14th century (M2.E13). In the late 16th century less than 1% of the vessels found were used for cooking but even so, occasional cooking vessels were still being produced in pottery throughout the 17th and 18th centuries. There is a distinct difference in the rim diameters of the 10th and early 11th century vessels and those of the later 11th and 12th centuries. The later pots also tend to be more cylindrical rather than bulbous in shape.

The second major pottery form is the jug or pitcher, usually externally glazed with a single handle and spout. Sherds of fabrics A2b, D3, and G2 contain inclusions which react with acid and most of the jugs and pitchers in these fabrics are internally leached, suggesting that the contents were sometimes acidic. Glazed jugs and pitchers occur first in small quantities in the 11th century and form less than 10% throughout the 12th century. By the end of the 13th century they form about 37% of the pottery found and in the 14th and 15th centuries jugs increase to between 69 and 84% of assemblages. There are some clear differences in size between the various glazed vessels.

The 12th century tripod pitchers (in fabrics B2 and A2b) are much larger than those in both Stamford ware (E1b) and A7a pitchers. They have a globular shape while the early 13th century pitchers are almost vertical on the lower part of the body. There is a vast range in size and shape in medieval jugs, probably reflecting differences in function as well as fashion.

By the post medieval period pewter and other metal became favoured for jug manufacture and pottery jugs are rare. The influence of metal prototypes on pottery forms is shown for example by chafing dishes. There are numerous other types of vessel but they never constitute more than a small proportion of medieval groups. Small bowls and shallow baking trays are the most common forms and occur between the 13th and 15th centuries. In the post-medieval period three new types of vessel are found, jars, conical bowls, and drinking vessels. These are all vessels which may have been derived from wooden prototypes. After the end of the 17th century the range of forms increases with a few common types and many variations which only occasionally occur.

The use of pottery ridge tiles starts about the mid 13th century but they are most common, together with finials and louvers, from the late 13th to the 15th centuries. However, they were still being produced in the post-medieval period. Flat roof tiles and bricks were used after the middle of the 16th century but are more common in 17th century assemblages and were made at different locations to the contemporary pottery.

## SOURCE

The distances of the various sources of pottery used in Hereford and the direction from which they came are of great interest as a reflection of trading patterns throughout the medieval and post-medieval periods (Vol 2, Fig 146). All pottery of group A is likely to have been made within 25km of Hereford, and most of it was probably manufactured much closer to the city. As a result one would expect that throughout the period group A wares would be the most common types found in the city, but this is not generally so and only occurs during the late medieval period and the late 17th and early 18th centuries.

The pottery used in Hereford in the 10th and early 11th centuries includes some 14% made close to Gloucester (38km) and the remainder, West Midlands early medieval ware (G1), probably produced outside the county. In the 12th century virtually all the pottery used was produced at Worcester (38km), Malvern Chase (29km) and in the Severn Valley near Gloucester (38km). As previously mentioned, during the 13th and 14th centuries local wares predominated although Malvern Chase wares continued to be used. The late 15th and early 16th century pottery, although not well represented in the excavations, is likely to have been mainly produced at Malvern Chase. In the second half of the 16th century some two-thirds of the pottery still came from Malvern Chase whilst the majority of the remainder (G8) came from an unknown but probably equally distant source. Nant and Whitney wares were predominant throughout the 17th century together with locally produced fabrics but by the late 18th century Stafford had taken over most of the local markets. Throughout the sequence, pottery from more distant sources in England (Group E) and from the continent (Group F) is rare until the end of the 17th century.

Hereford is situated at the centre of a road network, partly of Roman origin, and the pottery sources indicated above suggest that several of these routes were used for transportation in the medieval and post-medieval periods:

- from north Herefordshire or Shropshire - A4
- from Worcester - Group C
- from Malvern Chase - Group B
- from Newent and Gloucester - A7e and Group D
- from the south - A8

It is not as obvious from which direction the non-local and imported wares came, but the distribution outside the city suggests that they could have come up the River Wye or across country from Gloucester, for example Stamford ware (E1) and shell-tempered wares (G2). There is a strong bias in the sources of supply towards the east and south-east and a surprising lack of pottery from areas immediately to the south and to the north. Excavations in both these directions have shown that there are distinct local fabrics which are seldom found in Hereford.

#### SUMMARY

Closed groups of pottery in Hereford have been examined for most periods between the 10th and 18th centuries. Most of the pottery and ceramic building materials used in the city came either from unlocated sources within Herefordshire (Group A) or from three main areas to the east but still within 40km of the city (Groups B, C, and D). Pottery from more remote sources accounts for less than 5% of the total found (Groups E and F). Unknown external sources also account for some 5% of the pottery and some of these groups would repay a more detailed study. These include the West Midlands early medieval ware (G1), which accounts for up to 80% of 10th and 11th century pottery;

**fabric G7, which comprises about 15% of the late medieval pottery; and the black glazed cups of fabric G8 which form nearly one third of the late 16th century pottery.**

# PHOTOMICROGRAPHS

The following table relates the photomicrographs reproduced in the printed text (Figs 66-70) with the illustrated pottery. Sherds which have been used for photomicrographs but are not illustrated are not included.

PHOTOMICROGRAPH FIGURE	FABRIC	ILLUSTRATION FIGURE	TEXT REFERENCE
66.1	A2	29.10	M6.B7
66.2	A2	29.24	M6.B8
66.3	A3	31.1	M6.B11
66.4	A3	31.4	M6.B11
66.5	A4	31.16	M6.C1
66.6	A5	31.21	M6.C2
66.7	A6	31.22	M6.C3
66.8	A7a	31.26	M6.C5
66.9	A7a	31.27	M6.C5
66.10	A7b	33.1	M6.C10
66.11	A7b	54.5	M7.C11
66.12	A7c	57.3	M7.D4
67.1	B1	38.3	M6.D9
67.2	B1	38.4	M6.D9
67.3	B1	38.6	M6.D10
67.4	B2	38.8	M6.D12
67.5	B2	38.12	M6.D12
67.6	B2	38.14	M6.D12
67.7	B3	38.15	M6.D14
67.8	B3	38.16	M6.D14
67.9	B3	38.18	M6.D14
67.10	B3	38.20	M6.E1
67.11	B3	38.21	M6.E1

cont

(cont)

PHOTOMICROGRAPH FIGURE	FABRIC	ILLUSTRATION FIGURE	TEXT REFERENCE
67.12	B4	42.7	M6.E12
67.13	B4	42.12	M6.E12
67.14	B4	40.6	M6.E10
67.15	B4	40.9	M6.E10
67.16	B4	40.15	M6.E11
68.1	C1	43.1	M6.F2
68.2	C1	43.2	M6.F2
68.3	C1	43.5	M6.F2
68.4	C2	43.11	M6.F5
68.5	D1	45.4	M6.F9
68.6	D1	45.7	M6.F9
68.7	D1	45.6	M6.F9
68.8	D1	45.8	M6.F9
68.9	D2	45.10	M6.F12
68.10	D2	45.15	M6.F12
68.14	A7 - louver	61.4	M7.E5
69.3	E2b	46.10	M6.G10
69.15	E7	46.12	M7.A4
70.5	F3	48.2	M7.A12
70.9	G3	49.6	M7.B7
70.10	G5	49.7	M7.B9

In addition to the pottery photomicrographs there are the following:

- Fig 66.14            Victoria Street, period 1 -  
a sample of the fired clay used in the  
superstructure of the grain drying oven 309  
(M7.F5)
- Fig 66.15            Victoria Street, period 2 -  
a sample of the fired clay slabs which may  
have been baking trays (M7.F6)
- Fig 66.16 & 17      Clay samples from Newent Glasshouse -  
fabric A7e. No 16 - before levigation;  
No 17 - after levigation (M6.D1)
- Fig 67.17            Clay sample from Malvern Chase area  
(M6.D4)

# CLAY PIPES

by A A Peacey and R Shoesmith

Pipe smoking began in England in the 1570's and was widely practised by the end of the 16th century. By this time clay pipes were being made in moulds, originally in the London area but by the 1640's production had expanded to most parts of the country. The industry found local sources of clay wherever possible, making use of white clays which had been used for the production of glazed and unglazed white wares and for slip decoration (Oswald, 1975).

The manufacture of clay tobacco pipes in Herefordshire started in the second quarter of the 17th century and reached its peak, both in quantitative production and in the assertion of regional design characteristics, towards the end of the 17th century. Local products continued to be used in the early 18th century but were gradually superceded by Bristol pipes, which doubtless came as part of cargoes on barges travelling up the River Wye, and eventually by the wares from the Broseley, Shropshire kilns.

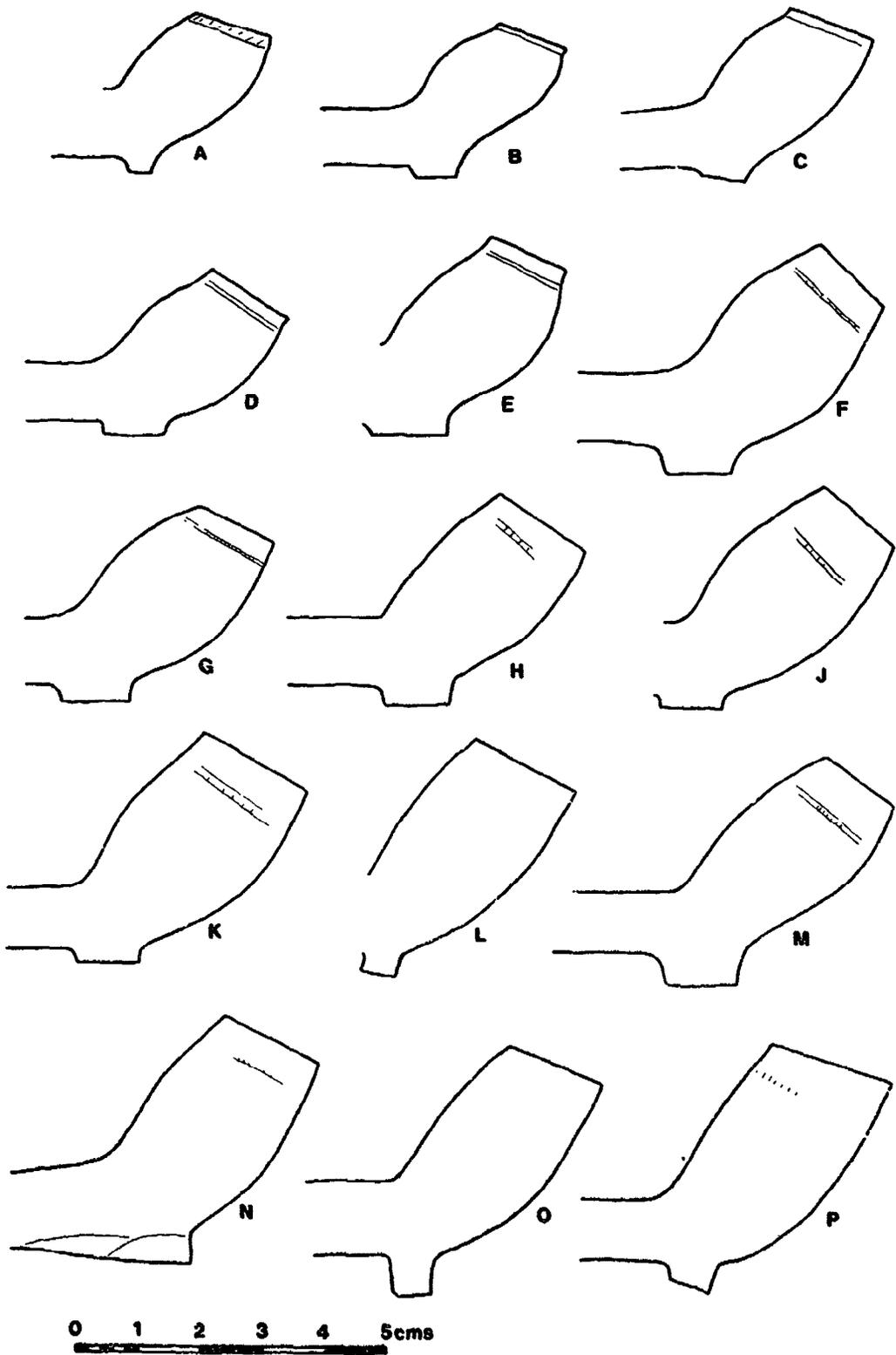
The following clay pipe manufacturers have been identified in the county:

NAME	PLACE	DETAILS AND DATE
Thomas Purton	St Nicholas parish, Hereford	Moved from London to Hereford between 1663 and 1669. Had Francis Jones as apprentice 1669-70

(cont)

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NAME	PLACE	DETAILS AND DATE
John Purton	Hereford	Probably operative between 1676 and 1714. His son, William, was apprenticed to a Bristol pipemaker in 1714 (Walker, 1972)
Francis Jones	Hereford	Apprentice to Thomas Purton 1669-70 and then to Richard Everton in 1670
Richard Overton	Birtley, N Herefordshire	Certainly operative between 1664 and 1670. Had Francis Jones as apprentice 1670. Kiln probably at Birtley Farm (Watkins, 1930, 133)
Thomas Overton	3 miles from Hereford	1660-1690 (Oswald, 1975, 174)
John Grub	Leominster	Married in 1666 (HRO)
Humphry Wall	Leominster	Died in 1678 (HRO)
William Caldewell	Leominster	Beneficiary of the will of H Wall (HRO)
Stephen Watkins	Kington	Bondsman at marriage in 1681 (HRO)
?	Pipe Aston	Kiln found at Pipe Aston (Watkins, 1930, 132)



AAP;RS

Fig 71 Clay pipe bowls - types A-P

A few clay pipes were stratified in period 6 at Berrington Street site 4 and in periods 7a, 7b, and 8 at Bewell House and these pipes have been used to date these later levels. Contexts are not given in the type series but the main groups from these sites are listed in the inventory.

The collection of some 250 makers' stamps gives an indication of the variety of manufacturers selling or making pipes locally during the 300 years they were common. The Herefordshire regional types are isolated and the increased imports into the area in the early 18th century can be seen.

**THE BOWL TYPES (Figs 71:M8.A8 and 72:M8.A12)**

Comparative bowl types are taken from the simplified general typology published by Oswald (1975, 37-41) and for the Broseley types by Atkinson (1975)

FIG	TYPE	PROBABLE DATE RANGE	COMMENTS
71	A	1600-40	This is similar to Oswald type 16, and examples are known to have been made in north Herefordshire at Pipe Aston and Lingen (personal observation)
71	B	1600-40	This is Oswald type 4, similar to A but with a well-formed heel on which the maker's mark is sometimes found
71	C	1620-60	A West Country variation of Oswald type 5, with a small overhung bowl
71	D	1620-60	This is another variation of Oswald type 5, with a squat barrel shape and flat heel

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FIG	TYPE	PROBABLE DATE RANGE	COMMENTS
71	E	1650-80	A variation of Oswald type 6. Some examples are from Bristol and others local. Wheel stamps first occur on this type
71	F	1650-80	A distinct Herefordshire variation of Oswald type 6 with a long barrel shape and projecting heel. Stamps, which occur both on the heel and back of the bowl, include a crowned rose and wheel marks
71	G	1670-1700	This is similar to F, but has a different angle at which the bowl rim is trimmed
71	H	1670-1700	This is another regional development of Oswald type 6, more open than the earlier types. Few pipes of this type have been found but K, of which this appears to be an embryonic form, became one of the mainstays of the period
71	J	1670-1700	One of the popular Herefordshire types at the end of the 17th century. It differs from F in that the broadest part of the bowl has moved up from the centre towards the rim but marks occur in similar positions
71	K	1680-1710	A very common local type, the rear bowl profile turning back to produce a wider mouth. This is reminiscent of the Broseley type 4 (Atkinson, 1975), but this type has a heel whereas the Broseley has a spur. Rouletting is still general on the rim

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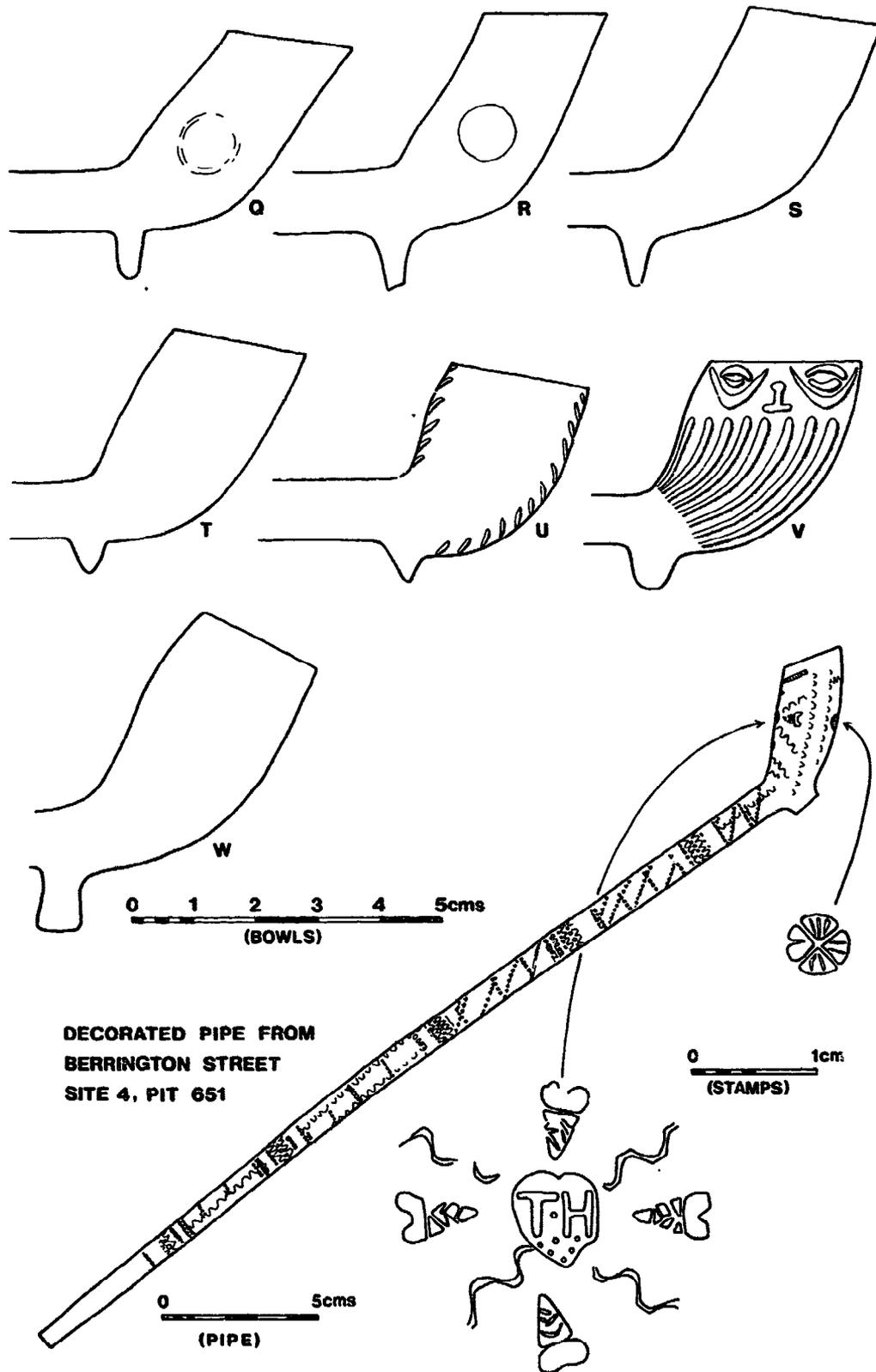
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FIG	TYPE	PROBABLE DATE RANGE	COMMENTS
71	L	1680-1720	A Herefordshire variety of Broseley type 4 (Atkinson, 1975), marks are impressed on the base of the spur
71	M	1660-80	Broseley type 2 (Atkinson, 1975). The occurrence of a mark not recorded from Broseley could indicate local production of this type
71	N	1680-1720	Broseley type 5 (Atkinson, 1975). This type was also made at Pipe Aston and Birtley in north Herefordshire (personal observation) The mark, often a full name, is on the heel
71	O	1690-1720	Broseley type 4 (Atkinson, 1975). Locally made examples are distinguished by the poorer quality of both form and fabric. Marks occur on the base of the spur
71	P	1690-1720	A local form derived from O. The marks occur on the shorter and enlarged spur
72	Q	1700-40	This type, embodying a mark on the bowl side, was favoured by Bristol (Oswald, 1975, 56) and Gloucester (Peacey, forthcoming) makers
72	R	1720-60	This is a later variant of Q, with the bowl form more upright
72	S	1725-1800	This is a long lasting 18th century type, but there is insufficient local data to date it more accurately

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(cont)



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Fig 72 Clay pipe bowls - types Q-W, and a decorated pipe from Berrington Street

(cont)

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FIG	TYPE	PROBABLE DATE RANGE	COMMENTS
72	T	1750-1850	An undistinguished bowl form which survived alongside other types for a long period
72	U	1830-1870	A plain bowl, similar in shape to V but with a chevron decoration of clay pellets on the seams
72	V	1820-70	A small upright bowl with a slightly flattened cross-section and spur, decorated with relief motifs
72	W	1850-1900	An elegant round bowl with a dominating round spur. Similar pipes were made by William Pardoe at Nantgarw, Glamorgan (personal observation)

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MAKERS' STAMPS - GENERAL (Figs 73:M8.A14 and 74:M8.B5)

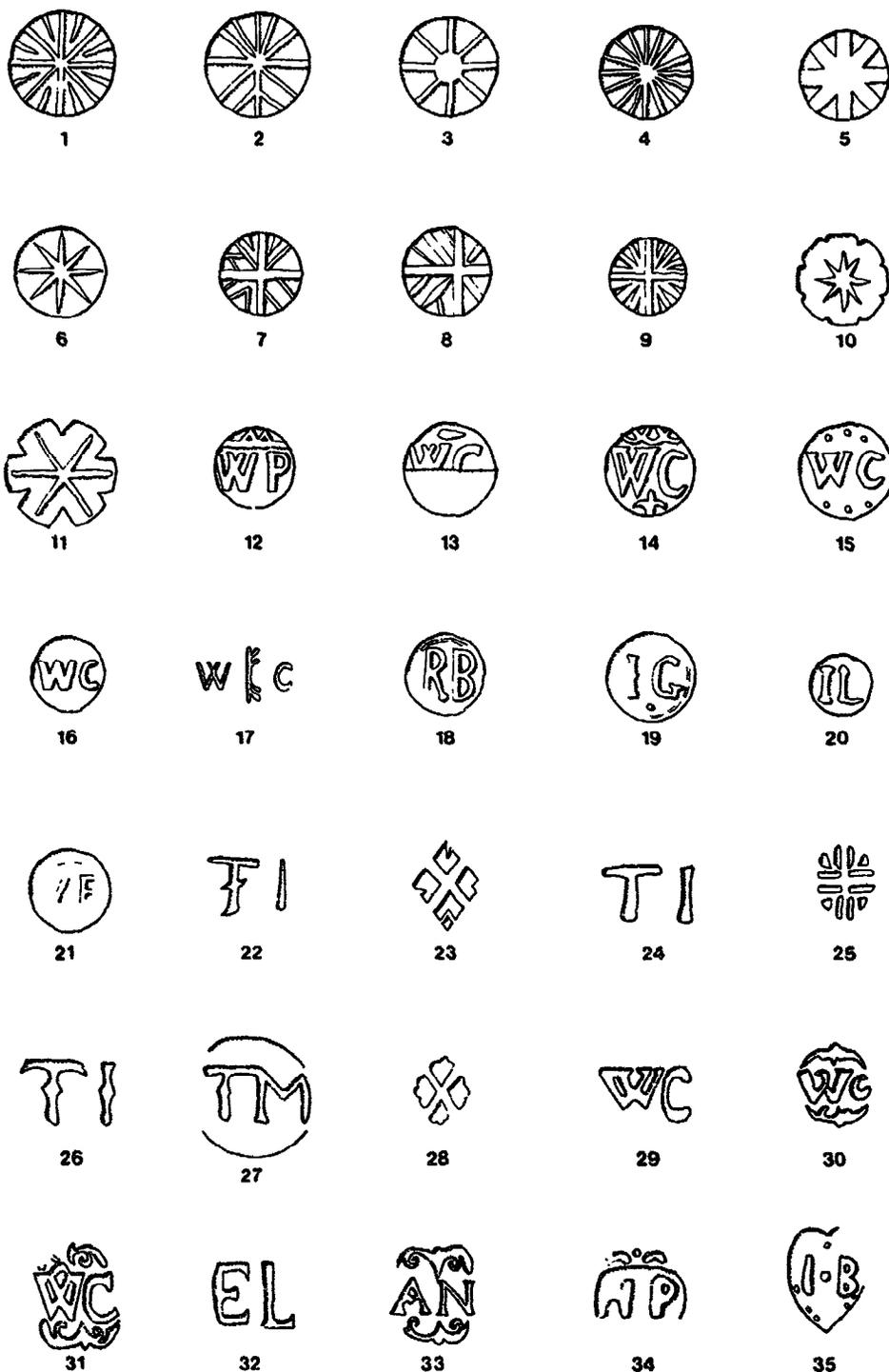
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FIG	TYPE	DATE RANGE	INITIALS	COMMENTS
73	1-11	1650-1710	-	Various wheel or star derived stamps, which are exceedingly common in this area and are found on the heel or back of the bowl. It first appears on type E and also on F, G, H, J, and K. Marks of this type are known from the kilns at Pipe Aston (personal observation) and Broseley (Thursfield, 1907) but their

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(cont)

# CLAY PIPE STAMPS



0 1 2cms

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Fig 73 Clay pipe stamps - nos 1-35

(cont)

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FIG	TYPE	DATE RANGE	INITIALS	COMMENTS
73	1-11 (cont)			numbers and variety speak for several local sources.
73	12	1620-60	WP	One example on the heel of type C
73	13	1620-60	WC	One example on the heel of type C
73	14	1620-60	WC	One example on the heel of type D
73	15	1670-1710	WC	Thirteen examples on heels of types J and K. This type is also common at Ross-on-Wye (J Parry collection), and Leominster (personal observation) and together with nos 13, 14, 16, and 17 could be products of William Caldewell of Leominster
73	16	1690-1720	WC	One example on the spur of type O
73	17	1650-80	WC	Three examples on heels of type E
73	18	1670-1700	RB	One example on the heel of type J

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(cont)

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FIG	TYPE	DATE RANGE	INITIALS	COMMENTS
73	19	1670-1700	IG	One example on the heel of type J which could be the work of John Grub of Leominster
73	20	1600-40	IL	One example on the heel of type B
73	21	1620-60	-	Damaged stamp on the heel of type D
73	22-26	1620-80	TI	Six examples on the heels of types D and E. The initial heel mark is accompanied by a quartered design on the top of the stem (23 and 25). This pipe is also recorded from Ross-on-Wye (J Parry collection), Gloucester and Stroud (personal observation) and a connection could exist between this and the next stamp
73	27-28	1620-60	TM	One example on the heel of type D. Variations of this mark with a similar quartered design to 23 and 25 are recorded from Ross (J Parry collection), Gloucester, Stroud, Wooton-under-Edge (personal observation) and

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(cont)

Ms.B2

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FIG	TYPE	DATE RANGE	INITIALS	COMMENTS
73	27-28 (cont)			Marlborough (Atkinson, 1965)
73	29	1620-60	WC	One example on the heel of type D
73	30	1620-60	WC	One example on the heel of type D. This is definitely a product of the Bristol kilns (Jackson and Price, 1974)
73	31	1620-60	WC	One example on the heel of type D; as with 30, a Bristol pipe
73	32	1631-52	EL	One example on the heel of type D; made by Edward Lewis of Bristol (Jackson and Price, 1974)
73	33	1620-60	AN	One example on the heel of type D, also recorded from Stroud (personal observation), Cirencester (Museum collection), and Bristol (Jackson and Price, 1974)
73	34	1620-60	HP	One example on the heel of type D
73	35	1650-80	IB	One example on the heel of type E

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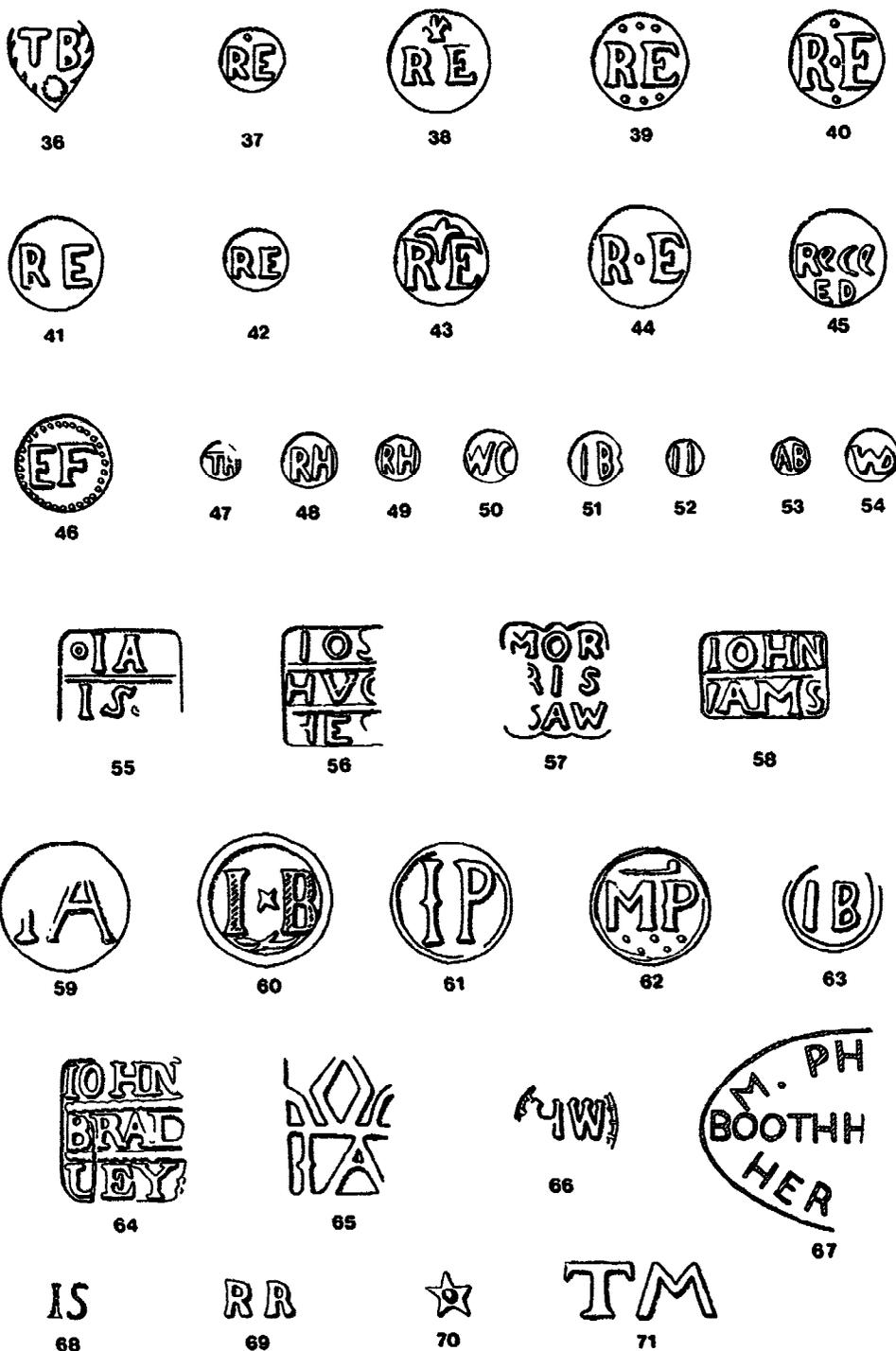
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FIG	TYPE	DATE RANGE	INITIALS	COMMENTS
74	36	pre-1700	TB	One example on a heel fragment
74	37-41 & 43-44	1670-1710	RE	34 examples on the heels of type J and K. Common also at Ross-on-Wye (J Parry collection) and certainly the work of a local pipe maker
74	42	1690-1720	RE	Two examples on the spurs of types L and O
74	45	1680-1710	ReCe ED	One example on the heel of type K
74	46	1660-80	EF	One example on the heel of type M
74	47	1690-1720	TH	One example on the spur of type O; this is also recorded from Broseley from whence this probably came
74	48-49	1690-1720	RH	Three examples on spurs of type O; probably a Broseley product
74	50	1690-1720	WC	One example on the spur of type O, not known from Broseley and probably a local product

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(cont)

# CLAY PIPE STAMPS



0 1 2cms

AAP:RS

Fig 74 Clay pipe stamps - nos 36-71

(cont)

FIG	TYPE	DATE RANGE	INITIALS	COMMENTS
74	51	1690-1720	IB	One example on the spur of type O; not recorded from Broseley
74	52	1690-1720	II	One example on the spur of type O; also recorded from Broseley (Thursfield, 1907)
74	53	1690-1720	AB	Two examples on the spurs of type O; also recorded from Broseley (Thursfield, 1907)
74	54	1690-1720	WD	One example on the spur of type O; also recorded from Broseley (Thursfield, 1907)
74	55-58	1680-1720	various	One example of each on the heels of type N. All except 55 are of Broseley manufacture (Thursfield, 1907)
74	59	1700-60	?A	One example on the side of a damaged bowl of type Q or R, which is indicative of origin or influence from the south-east
74	60	1700-40	IB	One example on the side of a bowl of type Q

(cont)

(cont)

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FIG	TYPE	DATE RANGE	INITIALS	COMMENTS
74	61	1700-60	IP	One example on the side of a bowl of type Q or R. This is also recorded from Welsh Newton (J Parry collection) and Bristol Jackson and Price, 1974)
74	62	1720-60	MP	One example on the side of a bowl of type R
74	63	1700-40	IB	One example on the side of a bowl of type Q. This is also recorded from Stroud (personal observation), Gloucester (Museum collection), Cirencester (Museum collection), and Hailes Abbey (personal observation) and could be a product of either Gloucester or Bristol
74	64	1740-60	IOHN BRADLEY	One example on a stem fragment
74	65	-	-	Incomplete stem mark of unusual style
74	66	1670-1700	HW	One example on the back of a bowl type J which may be a product of Humphry Wall of Leominster

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(cont)

(cont)

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FIG	TYPE	DATE RANGE	INITIALS	COMMENTS
74	67	c1890	M. PH... BOOTHH.. HER..	One example on the back of a bowl fragment. This is an indelible ink stamp and refers to the pipe purchaser not the maker. Mary Phillips was the proprietor of the Booth Hall, Hereford in 1890 (Jakes and Carver, 1890). The directories for 1885 and 1895 show the Booth Hall in different hands and the pipe must have been made between these dates. A collection of similar pipes, unearthed in Gloucester (Museum collection) shows that the method was still in use up to 1910
74	68	1700-40	IS	One example incuse on the back of a bowl similar to type Q but without side roundel
74	69	1830-70	RR	One example on the side of a spur, common all over south-west England (personal observation) and probably a Bristol product
74	70	1750-1850	-	A five pointed star on the sides of the spur on type T

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(cont)

(cont)

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FIG	TYPE	DATE RANGE	INITIALS	COMMENTS
74	71	post-1750	TM	One example in relief on the sides of a spur fragment

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#### MAKERS' STAMPS - ROSE AND CROWN (Fig 75:M8.B10)

Rose and crown designs of various styles are exceedingly common in Herefordshire. 53 examples were found with marks on the heel and the back of the bowl and often both. They occur only rarely on bowl types E and F but commonly on types J and K. Nos 14, 25-28, and 30 are the work of Richard Overton of Birtley in north Herefordshire (Watkins, 1930, 133). He is recorded in the parish registers from 1664 to 1667 and also in the sherriff's court records for 1669 in connection with an apprentice who was transferred to him from Thomas Purton. Nos 7, 11, and 13 may be the work of this Thomas Purton who was working in the parish of St Nicholas in the city of Hereford in 1676. No 22 could be the work of John Grub of Leominster. The remaining marks are certainly products of this region.

#### A DECORATED PIPE FROM BERRINGTON STREET (Fig 72:M8.A12)

Pit 651 on site 4, which contained an important collection of wine bottles and much environmental material, also included an unusually fine pipe and parts of a second which are unlike any previously recorded from Hereford. Though reminiscent of certain Dutch pipes in the all-over decoration, the form and intricate rouletting suggest an English source. The manner in which different wheels were used in combination to produce the intricate patterning along the stem is also found on pipes of this period from Gloucester (Peacey, forthcoming), but never on so lavish a scale, being normally limited to 5-8cm of the stem behind an undecorated bowl. The use of simple rouletting as an



embellishment to the stem is also recorded from Plymouth (Oswald, 1969), Taunton (Oswald, 1975), Broseley (Thursfield, 1907), and London (Oswald, 1975). The form of this fine pipe is similar to one from Clerkenwell, London dating to c1720, suggesting that it may be the product of a London maker (Oswald, 1975, 100). The other pipes from this pit are typical of those used in Hereford at the end of the 17th and beginning of the 18th centuries and comprise bowl types J, K, O, P, and Q.

#### WIG CURLERS

Four pipe clay wig curlers found at Bewell House date from the late 17th century. Three are marked on the end with an incuse WB, a mark common in Bristol and Gloucester. There is evidence for the manufacture of unmarked wig curlers at the Birtley pipe kilns (personal observation).

#### INVENTORY OF MAIN GROUPS

SITE/PERIOD	CONTEXT	QUANTITY	TYPE	STAMP	PROBABLE DATE RANGE
Berrington Street 4 Period 6	Cellar 701 (Filled before AD 1700)	5	1-11	Wheel & star	1650-1710
		1	17	WC	1650-80
		1	23	TI	1620-80
		1	24	TI	1620-80
		1	29	WC	1620-60
		1	32	EL	1631-52
		1	33	AN	1620-60
Bewell House Period 7a	Pit 99 (Filled by cAD 1720)	7	1-11	Wheel & star	1650-1710
		1	14	WC	1620-60
		1	15	WC	1670-1710

(cont)

(cont)

SITE/PERIOD	CONTEXT	QUANTITY	TYPE	STAMP	PROBABLE DATE RANGE
Bewell House	Pit 99	1	21	-	1620-60
Period 7a	(Filled by	1	22	TI	1620-80
	<u>c</u> AD 1720	1	23	TI	1620-80
		1	37	RE	1670-1710
		1	49	RH	1690-1720
		1	52	II	1690-1720
		1	53	AB	1690-1720
		1	57	Morris	1680-1720
				Shaw	
		1	59	IA	1700-60
		1	RC1	-	1660-1710
		1	RC2	-	1660-1710
		1	RC3	-	1660-1710
		1	RC4	-W	1660-1710
		1	RC5	IB	1660-1710
		1	RC6	WC	1660-1710
		1	RC7	-P	1660-1710
		1	RC14	RO	1660-1700
Bewell House	Soil levels	9	1-11	Wheel & star	1650-1710
Period 7b/8	15 and 22*	1	19	IG	1670-1700
		2	37	RE	1670-1710
		1	39	RE	1670-1710
		4	40	RE	1670-1710
		1	41	RE	1670-1710
		1	53	AB	1690-1720
		1	54	John James	1680-1720
		1	66	HW	1670-1720
		1	RC6	WC	1660-1700
		1	RC18	-	1660-1710
		1	RC19	-	1660-1710
		1	RC22	IG	1660-1710

\*The clay pipes from these two soil levels are taken together as there do not appear to be any significant differences. There was no firm sealing layer but the associated finds suggest that the main use should be during the first half of the 18th century.

It may be significant that the earliest group in cellar 701, which was filled at some date before 1700 and possibly before 1670, did not contain any pipes with Rose and Crown stamps. However there is some indication that pipe users had a preference for pipes from a particular maker as the Bewell House soil levels (L15 and L22) contained no less than eight pipes with RE stamps out of a total of fourteen pipes with initial stamps.

The earliest pipes found in Hereford are probably imports from the London area but it is evident that this trade was superseded in the second half of the 17th century by a flourishing local industry with several centres of production including several in the city. By the middle of the 18th century, at the latest, imports from Bristol and Broseley had effectively taken over from the local products.

# **PART THREE**

## **THE ENVIRONMENTAL EVIDENCE**

# PART THREE

## THE ENVIRONMENTAL EVIDENCE

### INTRODUCTION

The increased use of scientific techniques and sampling procedures during excavations has been one of the most important advances in archaeology, especially during the middle and late 1970's. The rich potential of the deposits underlying many historic towns was soon established by archaeologists who found that the ground conditions on many urban sites were particularly favourable for the preservation of a wide range of evidence. This is usually due to alterations in the water-table, often caused by man's activities, which in turn may result in the waterlogging of deposits and the production of anaerobic conditions. Deposits of this nature contain not only organic artifacts but also biological remains from which it is possible to reconstruct aspects of the environmental conditions at the time of deposit. As the evidence is accumulated it may be possible to establish the effect of urban settlement on the natural environment and the changes in settlement caused from time to time by variations in the environmental conditions (Addyman et al, 1976).

The preservation of environmental remains varies from place to place and from period to period in every urban centre and this has been very apparent during the twelve years of archaeological work in Hereford. Although the situation of the Saxon and medieval city, on a well-drained gravel terrace overlooking the river Wye, was well suited for residential use, it did not normally provide conditions where waterlogging would occur and where anaerobic layers would be developed during the first stages of occupation. Thus, during the Saxon period, in the areas

excavated, environmental material such as seeds and wood was only preserved where it had been partly burnt or charred.

As the city expanded and the population increased, several factors gave rise to improved organic preservation. In the first case, the construction of the defences, and particularly the excavation of a large and deep ditch encircling the town and fed by a diverted stream (Vol 2, 87-8), probably had an important effect on the water table. As a result, samples from the various ditch fills, especially those parts which were deposited when the ditches were no longer fulfilling their primary functions, have produced valuable environmental evidence. Secondly, from the 12th century onwards, there was an increasing use of pits both for rubbish and as latrines. Both types have provided a valuable store of environmental evidence, particularly in the 17th and 18th centuries.

Collecting and sampling practices have improved during the series of excavations in Hereford and much more material with a potential for environmental analysis was kept and has since been examined from the latest of the Berrington Street sites as compared with, for example, the Brewery.

The sections which follow commence with a report on the animal remains with sections on the animal, bird, and fish bones, mollusca and the insect fauna. This is followed by reports on the vegetable remains including wood, seeds, grasses, and grain and is concluded with a section on mineral samples including metalworking residues. Human bone, found only at Castle Green, was included in volume 1 as part of the complete report of the excavations of the late Saxon burial ground.

# THE ANIMAL BONES

## INTRODUCTION

by R Shoesmith and B A Noddle

Animal bones were examined from the Victoria Street and the Brewery sites by R Harcourt and from the Berrington Street sites 1-3 and Bewell House by B Noddle. The assemblages from other sites in the city were considered too small to provide useful statistics with the exception of those from Berrington Street site 4 which have not yet been analysed. Bones were sent for examination on a site by site basis and at the time were assumed to be the whole sample available for study.

Practices in the collection and analysis of bone remains from archaeological sites have changed during the many years of excavation in Hereford. A few selected bones were kept from the city walls excavations of 1965-7 but the sampling technique was not random and these bones have now been discarded. Bones were kept on a selected basis by the excavators at the Victoria Street and Brewery sites. At Victoria Street bones were only kept from the earlier occupation layers (periods 1-5) covering the period of Saxon occupation. At the Brewery bones were kept only if they came from pits. All the bones were kept from the Berrington Street sites 1-3 and Bewell House excavations and these two sites provide the bulk of the material considered. The small quantity of animal bones from Cantilupe Street were insufficient for statistical analysis, and are therefore not considered in this report.

The four sites considered in this report include a total of some 14,000 identified bone fragments. However, it must be realised that though this total is quite formidable from the point of view of time spent in evaluation, it probably represents only a very small proportion of the bones originally discarded on these sites. Estimations carried out in 1968 with the aid of Mr Robertson, a retail butcher of Anderston Cross, a poor district of Glasgow, suggested that, had he been doing his own slaughtering, he and his customers would have been discarding bone at the rate of 25,000 whole identifiable bones per acre each year. Some of the variations considered as significant in this report can thus be due to selective retrieval procedures and to chance differences in survival rather than real changes in input.

To enable comparisons to be made between the different sites, the material has been collected together in three groups, Saxon, Medieval and post-Medieval. The date range for each group can vary slightly from site to site and is shown in each section of the report. However, the large proportion of bone in each group should be representative of the following date ranges.

<b>SAXON</b>	<b>8th to mid 11th centuries</b>
<b>MEDIEVAL</b>	<b>Late 11th to late 13th centuries</b>
<b>POST-MEDIEVAL</b>	<b>14th to 19th centuries</b>

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## VICTORIA STREET & THE BREWERY

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by R Harcourt

The bones from the two sites are reported together as there is no overlap in periods. Victoria Street comprises the Saxon material and the Brewery the medieval and post-medieval groups. Apart from the medieval, the groups are quite small and the post-medieval group has been omitted from the analysis of the age structure. The groups used are:

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GROUP	SITE	PERIOD(S)	DATE RANGE
Saxon	Victoria Street	1-5	Up to the late 11th century
Medieval	Brewery	2 & 4a*	Late 11th to mid 13th centuries
Post-Medieval	Brewery	4c	15th and 16th centuries

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(\*material from pit 36, period 4a was included in the post-medieval group.)

Any assessment of the relative importance of the various species is based on the minimum number of individuals represented rather than the number of bone fragments.

## THE COMPLETE ASSEMBLAGE

A total of 1,691 fragments were examined of which 294 were Saxon, 1,280 medieval, and 117 post-medieval.

The minimum number of individuals present in each period gives an indication of the proportions of the various species present but the small sizes of the groups should be noted.

SPECIES	SAXON	MEDIEVAL	POST-MEDIEVAL
Cattle	6	25	3
Sheep	4	10	4
Goat	1	12	2
Pig	6	17	2
Horse	3	3	-
Dog	1	5	1
Cat	1	4	1

## INDIVIDUAL SPECIES

### CATTLE

The remains of cattle much exceeded those of other species. All parts of the skeleton were about equally represented including skulls, jaws, and the lower leg bones.

The measurements are shown in histogram form (Fig 70:Ms.C14) and in the following tables from which it can be seen that the cattle represented on these sites were small beasts, about 0.98 to 1.16m in height. The narrow range of variation suggests that, in terms of size, there was only one type of cattle present. The relationship of metacarpal length to breadth suggests that castration was probably practised, the metapodials of cows being shorter than those of steers, but of equal slenderness, while, in the bull, they are relatively short and thick.

### CATTLE BONES - MEASUREMENTS (mm)

	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT WIDTH
Humerus	-	-	59-73 (16)	-
Radius	242	58	51	32
		52-76 (18)	51-67 (12)	-
Tibia	-	-	42-51 (13)	-
Astragalus	52-63 (12)	-	-	-
1st phalanx	-	21-30 (40)	-	-

Horn cores Basal circumference 97-200 (20)

(The figures in brackets indicate the number of specimens)

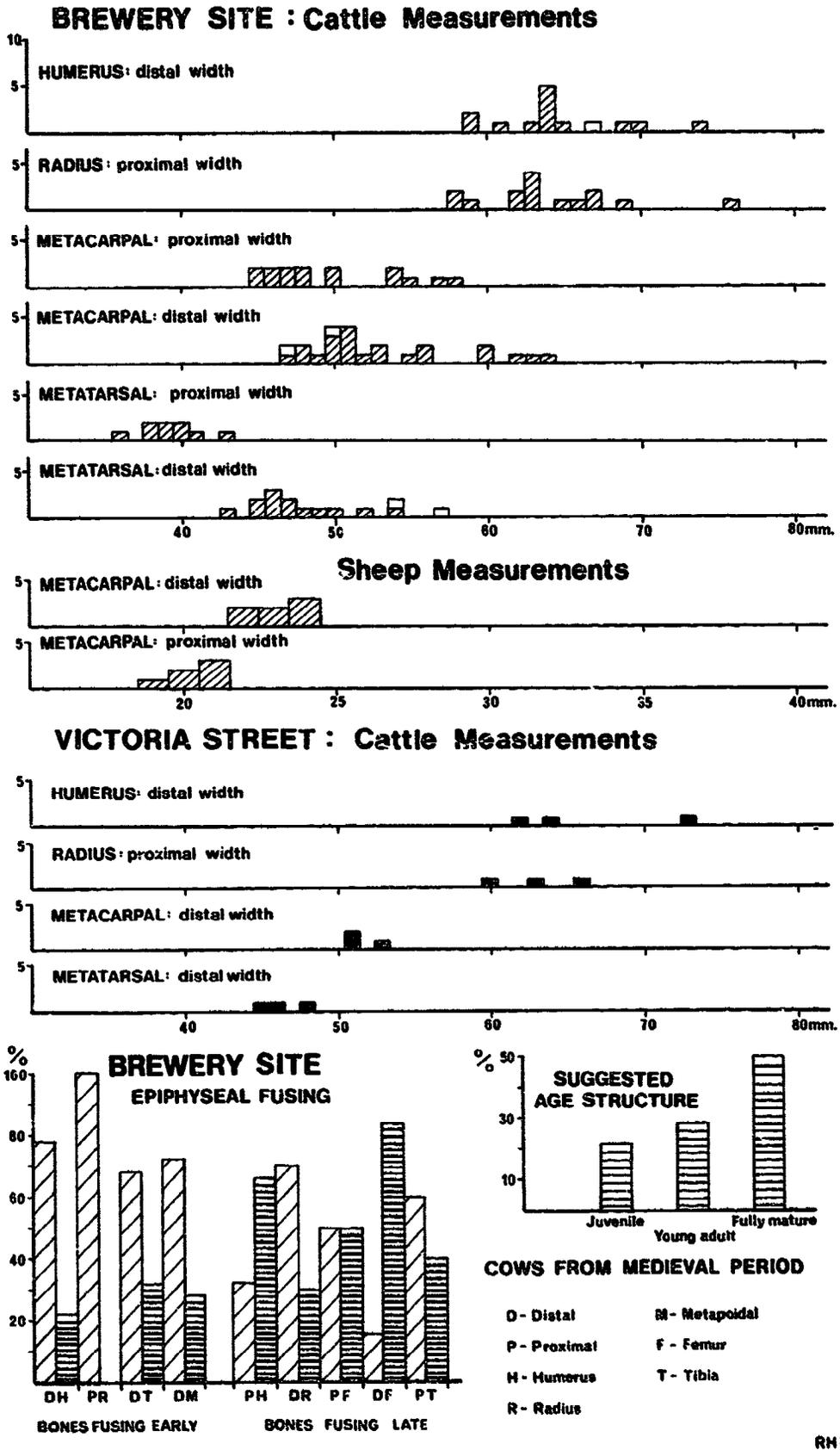


Fig 76 Animal bone measurements - Victoria Street and the Brewery

**CATTLE BONES - MEASUREMENTS (mm)**  
**METACARPALS**

<b>LENGTH</b>	<b>PROXIMAL WIDTH</b>	<b>DISTAL WIDTH</b>	<b>MIDSHAFT WIDTH</b>	<b><u>BREADTH</u> <u>LENGTH</u> %</b>	<b>SUGGESTED SEX</b>	<b>CALCULATED HEIGHT (m)</b>
159	55	60	32	20.1	bull	1.00
163	47	52	28	17.2	cow	0.98
164	-	55	28	17.0	cow	0.98
168	45	47	25	15.2	cow	1.01
170	46	51	26	15.3	cow	1.02
173	48	48	25	14.4	cow	1.04
173	48	50	26	15.0	cow	1.04
175	45	49	26	14.9	cow	1.05
177	54	56	29	16.4	cow	1.06
178	58	64	35	19.7	bull	1.12
179	46	51	26	14.5	cow	1.08
179	50	50	27	15.0	cow	1.08
182	47	51	27	14.8	cow	1.10
183	54	63	33	18.0	steer	1.12
189	50	53	28	14.8	steer	1.16
189	57	62	33	17.4	steer	1.16

$$\frac{\text{Breadth}}{\text{Length}} \% = \frac{\text{Midshaft width}}{\text{Length}} \times 100$$

Height calculation: Bull = length x 6.25  
Steer = length x 6.12  
Cow = length x 6.0

CATTLE BONES - MEASUREMENTS (mm)

METATARSALS

LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT WIDTH	$\frac{\text{BREADTH}}{\text{LENGTH}}\%$	SUGGESTED SEX	CALCULATED HEIGHT (m)
183	-	45	21	11.4	cow	0.98
186	-	49	23	12.4	cow	1.00
191	38	48	21	11.0	cow	1.02
192	-	47	24	12.5	cow	1.02
194	39	43	22	11.4	cow	1.04
196	36	46	22	11.2	cow	1.04
196	38	46	22	11.2	cow	1.04
202	40	46	22	10.9	cow	1.08
203	-	46	23	11.4	cow	1.08
204	43	54	27	13.2	steer	1.11
205	41	52	24	11.7	cow	1.10
207	40	50	25	12.0	cow	1.11
210	39	47	23	10.9	cow	1.12

$$\frac{\text{Breadth}}{\text{Length}}\% = \frac{\text{Midshaft width}}{\text{Length}} \times 100$$

Height calculation: Steer = length x 5.45  
 Cow = length x 5.35

The absolute ageing of excavated animal remains is very difficult and is best avoided because it is, and may well remain, unknown at what age the various teeth erupted and the various epiphyses fused. It seems reasonable to assume, however, that the sequence of these events has remained unaltered. Accordingly, the long bone extremities have been grouped into early and late fusing moities (Fig 76:M8.C14) so that in the early group, unfused epiphyses indicate young animals and in the late group fused epiphyses must be from fully mature or even old animals. From the calculated percentages in each of these two groups an age structure can be suggested:

AGE	PERCENTAGE
Juvenile	22
Young adult	28
Mature	50

Although the number of specimens is small, the evidence from the mandibles is very similar. In four (19%) only the first molar is in wear, in seven (33%) the second is as well, and in ten (48%) all three molars are in wear. In three of this last group all three cusps are well worn.

A bovine interphalangeal joint, first and second phalanx, from the medieval period, has severe lesions of osteoarthritis with much exostosis. The angle at which the two phalanges fitted together and the complete absence of eburnation shows that the joint was fixed in partial flexion and as a result the animal must have been almost crippled.

## SHEEP

The cranial portions of ten skulls were found in ditch 11 (Brewery: Period 2c) all with horn cores broken or cut off at the base. The horn cores differed so much in size that there must have been horned animals amongst both ewes and rams. No hornless skulls were found in the excavations. The measurements, all from medieval levels, show these sheep to have been the small slender type similar to the Soay. (Fig 76:M8.C14 and below)

### SHEEP BONES - MEASUREMENTS (mm)

	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT WIDTH	<u>BREADTH</u> <u>LENGTH</u> %
Humerus	-	-	25-30 (11)	-	-
Radius	132	26	22	15	-
Metacarpal	112	20	22	12	10.7
	114	21	24	12	10.5
	115	21	24	12	10.4
	117	19	22	12	10.2
	118	-	24	12	10.2
	120	20	23	12	10.0
	120	21	23	14	11.6
Metatarsal	130	19	11	24	8.5
	133	19	11	23	8.3

(The figure in brackets indicates the number of specimens)

$$\frac{\text{Breadth}}{\text{Length}} \% = \frac{\text{Midshaft width}}{\text{Length}} \times 100$$

The relative age structure of the sheep was found to be similar to that of the cattle. In 14 (66%) of the mandibles the third molars are well worn, in 2 (10%) only two cusps are worn and in 5 (24%) the third molar is unerupted but the second molar is well worn.

#### GOAT

Horn cores were more numerous than any other part of the skeleton. All were similarly shaped, curving slightly backwards with a flattened cross-section. The biggest was 240mm along the outer edge. All had been broken off from the skull or were attached to a small portion. The dimensions of the three complete bones show how much broader, relative to length, goat metapodials are than those of sheep.

#### GOAT MEASUREMENTS (mm)

	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT WIDTH	<u>BREADTH</u> <u>LENGTH</u> %	PERIOD
Metacarpal	124	22	25	13	10.4	Post- medieval
Metatarsal	114	19	24	13	11.4	Medieval
	124	19	24	13	10.5	Post- medieval

## PIG

The total amount of pig bone from both sites was small. The large number of animals represented at the Brewery in the medieval period is due to the presence of the symphyseal portion of 17 mandibles. Very few bones were measureable but the distal widths of three humeri ranged from 28-31mm and of four tibiae from 20-22mm.

## HORSE

There were few specimens but all measurements indicate ponies of 12-13 hands (1.22 to 1.32mm) in height.

### HORSE MEASUREMENTS (mm)

	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT WIDTH	PERIOD
Radius	312	-	57	37	Saxon
	333	72	60	36	Medieval
Tibia	321	78	49	36	Medieval
Metatarsal	255	-	47	30	Medieval

## DOG

Except for two bones, all were from the medieval period and included four adults and one half grown puppy. The specimens fit in well with the normal, medium to large animals recorded from other sites.

### DOG MEASUREMENTS (mm)

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	LENGTH	MIDSHAFT WIDTH	ESTIMATED HEIGHT (m)	PERIOD
Humerus	191	14	0.65	Medieval
Ulna	185	10	0.50	Medieval
Femur	141	10	0.43	Medieval
	172	12	0.52	Medieval
	173	11	0.52	Medieval
Tibia	169	10	0.51	Post-medieval

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There was one fairly complete skull, the measurements being:

occipital protuberance to anterior margin of incisor  
alveoli - 172mm

junction of nasal bones to anterior margin of incisor  
alveoli - 84mm

bizygomatic breadth - 80mm

palatal length - 82mm: breadth - 51mm

length of maxillary tooth row - 60mm

snout width across the canines at the alveolar margins -  
34mm

**CAT**

All specimens seem to have been from animals of about the same size as a modern farm cat.

The lengths of the long bones were:

Femur - 88.6mm; 104.7mm

Tibia - 93.5mm; 96.5mm; 97.5mm; 105.5mm; 111.7mm.

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## **BERRINGTON STREET SITES 1, 2 & 3**

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by B A Noddle

The animal bones were in an excellent state of preservation, but were very fragmentary, as is often the case with urban remains. Trial samples were weighed from both Saxon and medieval periods to determine the proportions identifiable, and a figure of 79% for the Saxon and 81% for the medieval obtained. On casual inspection there appeared to be no difference in size of fragment, but a far higher proportion of the Saxon material turned out to have complete ends from which meaningful measurements could be obtained.

The bones were analysed in three groups:

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<b>GROUP</b>	<b>PERIOD(S)</b>	<b>DATE RANGE</b>
Saxon	1 & 2a	Up to the early 11th century
Medieval	3 & 4	Late 12th to late 13th centuries
Post-medieval	5 & 6	14th to 18th centuries

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(The late 11th and early 12th centuries were poorly represented on sites 1-3)

From the identified fragments the following analyses were made: proportions of identified fragments according to species; anatomical analysis of main bones within the major species (ribs were excluded from the identification); minimum number of individuals; and where possible the age of the individuals. The validity of these statistics is discussed elsewhere (Chaplin, 1971 and Uerpman, 1973). Complete bones and ends of bones were also measured.

THE COMPLETE ASSEMBLAGE

A total of 5,073 fragments from mammalian species was identified, comprising 2,838 from the Saxon period, 1,689 from the medieval period, and 546 from the post-medieval period. This last figure is probably too low for any firm deductions to be made. The proportions of the various

species are tabulated including the number of fragments for each species, the percentage of the total, the minimum number of individuals, and the number of bone fragments per minimum individual. This last is an artificial concept, but a useful method of comparison.

PROPORTIONS OF SPECIES

PERIOD		TOTAL NUMBER OF FRAGMENTS	CATTLE	SHEEP	PIG	HORSE	GOAT	DEER*	DOG	CAT		PERIOD
SAXON	Number of fragments	2838	1648 (57%)	433 (15%)	492 (18%)	76 (3%)	63 (2%)	84.9.3 (4%)	25 (0.8%)	5 (0.2%)	Number of fragments	SAXON
	Minimum number of individuals		50	31	33	12	14	13.6.1	8	3	Minimum number of individuals	
	Number of fragments per individual		33	14	15	-	-	-	-	-	Number of fragments per individual	
MEDIEVAL	Number of fragments	1689	1006 (59%)	310 (18%)	185 (11%)	54 (3%)	77 (3%)	20.4.2 (1.5%)	21 (1.3%)	10 (0.6%)	Number of fragments	MEDIEVAL
	Minimum number of individuals		132	66	57	27	30	9.4.2	12	7	Minimum number of individuals	
	Number of fragments per individual		8	5	3	-	-	-	-	-	Number of fragments per individual	
POST-MEDIEVAL	Number of fragments	546	276 (50%)	133 (23%)	92 (17%)	4 (1%)	20 (4%)	16.-.1 (3%)	3	1	Number of fragments	POST-MEDIEVAL
	Minimum number of individuals		48	30	25	2	8	3.-.1	2	1	Minimum number of individuals	
	Number of fragments per individual		6	4	4	-	-	-	-	-	Number of fragments per individual	

(\* -The three separate numbers for deer refer to red, roe and fallow deer respectively)

During all periods, cattle bones form at least 50% of the total, and therefore beef formed a very high proportion of the meat consumed. The proportion of sheep bones rises with the passage of time, from 15% in the Saxon period to 23% in the post-medieval. Pig falls slightly in the medieval period but otherwise remains constant at about 18%. All the other species form a very small proportion of the total, being less than 10% overall. This includes horse, goat, and all species of deer. The goat is probably underestimated, as bones which could not be positively identified as goat were classed as sheep, and it is possible that some small fragments of roe deer bone were also classified as sheep. There were very few dog and cat bones, and neither lagomorph nor rodent were found.

The minimum number of individuals is calculated from the number of the most frequently occurring fragments, with a few more added because they obviously do not belong to any of these specimens (juveniles, extra large specimens, etc). It is assumed that each archaeological layer contains different individuals, but this is not necessarily so. Thus an area with many small archaeological layers is bound to contain more individuals than a large midden. If the number of fragments is divided by the number of individuals, a useful comparative figure is obtained. The number of fragments per individual drops sharply from the Saxon to the medieval periods for all species, but is most marked in the case of cattle. This could be due to eating and cooking habits changing from dining groups and large kitchens to family eating. Alternatively the same result might be obtained by the introduction of retail butcheries selling small portions. If modern retail butchery is any guide, beef is sold boned out, the bones remaining with the butcher; however, beef carcasses are much larger nowadays than the medieval beast.

ANATOMICAL ANALYSIS OF THE MAIN SPECIES IN PERCENTAGES

	CATTLE			SHEEP			PIG			
	SAXON	MEDIEVAL	POST-MEDIEVAL	SAXON	MEDIEVAL	POST-MEDIEVAL	SAXON	MEDIEVAL	POST-MEDIEVAL	
Horn Core	3	11	10	6	4	4	-	-	-	Horn Core
Mandible	6	5	13	11	7	7	14	12	10	Mandible
Vertebrae	13	12	6	8	12	10	10	15	21	Vertebrae
Scapula	5	4	8	7	3	6	7	6	8	Scapula
Humerus	8	6	6	6	6	4	14	15	10	Humerus
Radius	5	4	7	9	10	13	7	7	9	Radius
Femur	6	6	7	4	6	3	4	7	8	Femur
Tibia	7	3	4	12	15	14	9	9	8	Tibia
Metapodials	13	14	14	13	19	16	4	9	4	Metapodials
Phalanges	9	11	13	2	2	2	2	3	2	Phalanges
Loose Teeth	14	14	9	20	12	10	24	17	2	Loose Teeth

The above analysis shows the proportions of the most commonly occurring bones expressed as a percentage of the total. The animal body does not, of course, contain equal numbers of each bone; there are 24 phalanges, 40 vertebrae and only 2 tibiae, for instance. The causes for the loss and preservation of different bones in a group is not fully understood (Uerpmann, 1973) but it seems likely that the main variations are due to differences in input, although cancellous bone in vertebrae and at the ends of some long bones is less durable than compact bone, and skulls, as opposed to mandibles, are easily shattered. Some bones are lost because they are eaten by other animals or are small and become trodden into the floor and are not cleared away to the midden. Other bones are preferentially removed for industrial processes - horn cores to the hornworker, phalanges to the tanner along with the hide, metapodials to the boneworker, and their exclusive presence indicates these activities. Thus it is the changes of the proportions of

different bones with time which is probably more instructive than the absolute values. Bearing this in mind, the following deductions can be made from the table. Amongst cattle there is a rise in the proportion of horn cores in the medieval period, and a rise of mandibles together with a drop in vertebrae in the post-medieval period. These latter two are a durable and a fragile bone respectively and suggest an increased "wear and tear" on the deposits at this time. Other changes are insignificant apart from the large number of pigs' teeth found in the Saxon period. When Berrington Street is compared with other sites in the country proportions of both metapodials and phalanges are high. This might indicate a lack of industry to take up these raw materials.

When the minimum number of individuals is determined, an attempt is also made to age those individuals. This is not done in chronological years and months, because the application of modern ages is not valid, but rather as age stages, which also makes the data easier to present. The age stages employed are juvenile, with few permanent teeth erupted and only the earliest maturing bone epiphyses closed; immature, with permanent dentition not complete and the latest maturing epiphyses not closed; and mature with complete dentition and all epiphyses not closed, and mature with complete dentition and all epiphyses closed. In modern terms this would represent animals under about eighteen months of age, between eighteen months and four years, and over four years old. Though suckling pig was known to be a delicacy and parchment production requires the skins of young calves it is likely that most juvenile animals were casualties or killed because of food shortage. Such animals would have produced neither labour, wool, nor offspring and would have given a minimum economic return. Only an affluent society and a high standard of animal husbandry can produce such animals deliberately. Immature animals may have reproduced once or given a couple of wool clips, but they are unlikely to have been slaughtered for purely economic reasons unless there was a strong meat market influencing the local agriculture, or the principal return on these animals was from their hides. It is known that cattle destined for butchery were mainly in the hands of tanners in the 18th century, at least in East Anglia, and were carefully slaughtered to avoid saturating a small meat market (Carter, personal communication). The percentage of individuals in the different age groups is set out in the table on the next page.

AGE RANGE OF PRINCIPAL SPECIES EXPRESSED AS A PERCENTAGE

PERIOD	CATTLE			SHEEP			PIG		
	JUVENILE	IMMATURE	MATURE	JUVENILE	IMMATURE	MATURE	JUVENILE	IMMATURE	MATURE
SAXON	16	43	40	8	40	52	22	49	29
MEDIEVAL	23	32	43	18	25	57	16	42	42
POST-MEDIEVAL	25	31	44	5	33	62	13	61	26

The proportions of mature cattle in each period remain fairly constant throughout, but the proportion of juveniles rises, perhaps reflecting a deteriorating standard of husbandry. The proportion of mature sheep rises with the passage of time probably indicating an increase in importance of wool production. Medieval Herefordshire sheep, forerunners of the present day Ryeland breed, were famed for their fine wool (Trow-Smith, 1957). The finest wool is obtained from animals on a low standard of nutrition (Short *et al*, 1958) which might result in an increase of juvenile casualty animals, though the same result may be obtained by using

the ewe as a dairy animal and weaning the lambs prematurely. The proportion of mature pigs is greatest in the medieval period. As pigs have no other economic function than the provision of meat and hides, this may be due to changes in husbandry practices to obtain a faster growing animal. It is tentatively suggested that this may be the result of sty husbandry as opposed to extensive husbandry on pannage. The same changes have been observed at other sites (Noddle and Bramwell, 1975) but at Bewell House (M8.F6-F7) there was no increase in mature pigs during the medieval period.

INDIVIDUAL SPECIES

CATTLE

The dimensions of the complete bones of cattle are shown below.

PERIOD	BONE	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT WIDTH	
Saxon	Radius	273	76	66	40	
	Metacarpal	175	-	-	30	
		175	52	49	29	
		170	48	49	30	
		190	44	-	28	
	Metatarsal	192	38	42	23	
		200	45.5	50	26*	
		200	40	42	23	
		205	40	42	23	
		213	45	50.5	26	
	Medieval	Metacarpal	165	53	51	28
			165	46	45	26
			170	-	44	26
			180	52.5	-	31
Metatarsal		200	42	46	23	
		190	40	45	24	
		202	43	48	24	
		205	41.5	47	25	
Post-medieval		Radius	233	-	58.5	33
		Metacarpal	167	46	44	25
	175		57	52	32	
	Metatarsal	200	38	43	23	
		206	39	48	26	

(\* pathological)

There were few complete bones as compared with the Victoria Street and Brewery sites where there were far more metapodials (M6.D1 & D2). However the same range of measurements is covered in both groups. The dimensions of frequently occurring ends of mature bones and an estimate of live weight, calculated from the astragalus (Noddle, 1973) (Figs 77:M8.E6 and 78:M8.E7) are both shown in histogram form.

Though the metapodials seem to get shorter with the passage of time, indicating a decrease in stature, there are no clear cut indications of size change from the other data. In the Saxon and medieval periods horns are of medium size in both length and circumference, and are curved upwards and forwards, at least in the cow (Fig 80.3 & 4). The Saxon cattle of East Anglia had more formidable horns, as do the modern breeds of red cattle, supposed to be of Saxon descent (Wilson, 1919). A scatter diagram of horn basal circumference against length along outer curvature for cattle from both Berrington Street and Bewell House sites (Fig 79:M8.E8) shows little difference in the relationship of these two dimensions and no clear cut period differentiation. In summary, then, these animals would appear to be average medieval stock in size, weight and horn formation.

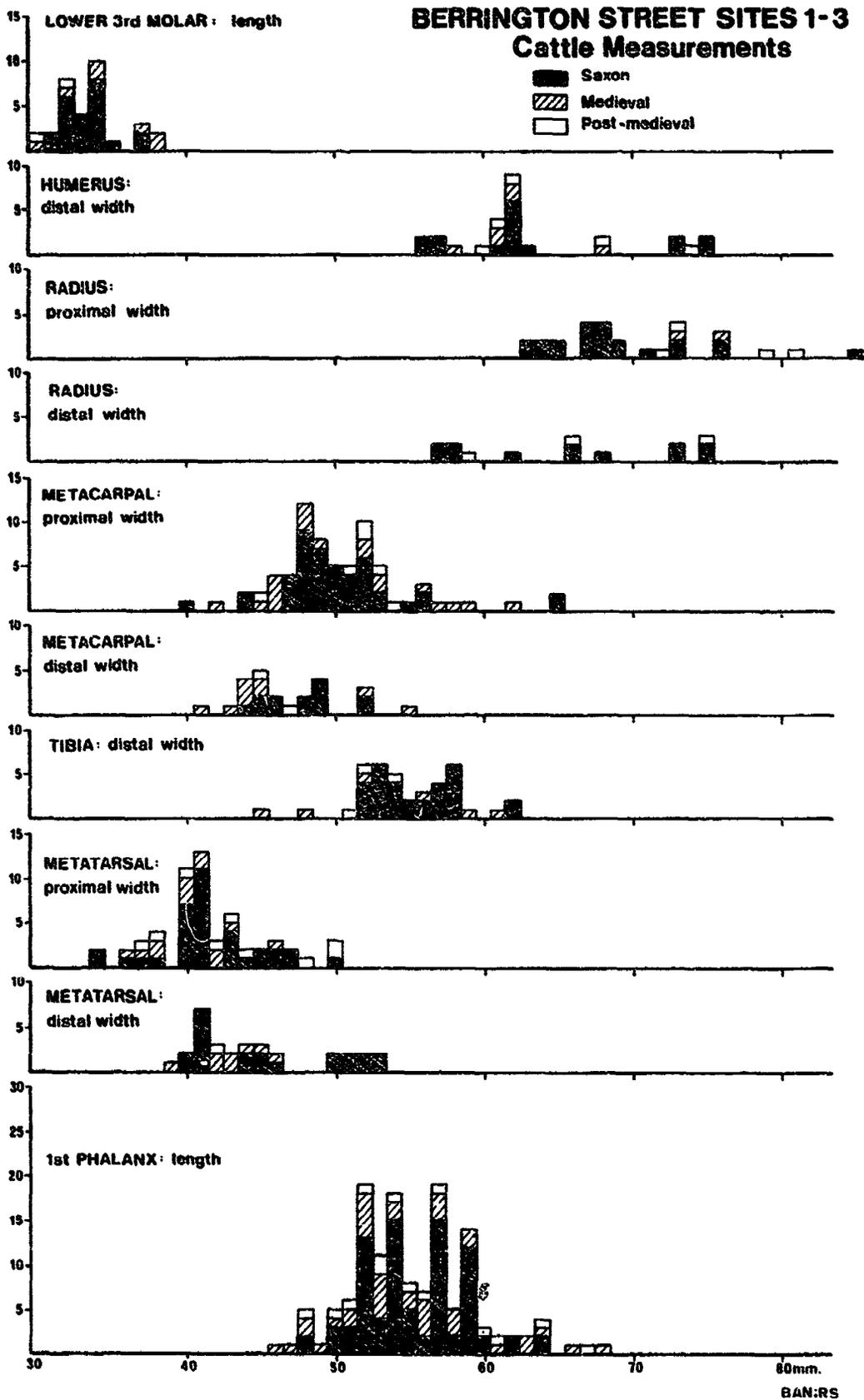


Fig 77 Cattle measurements - Berrington Street 1-3

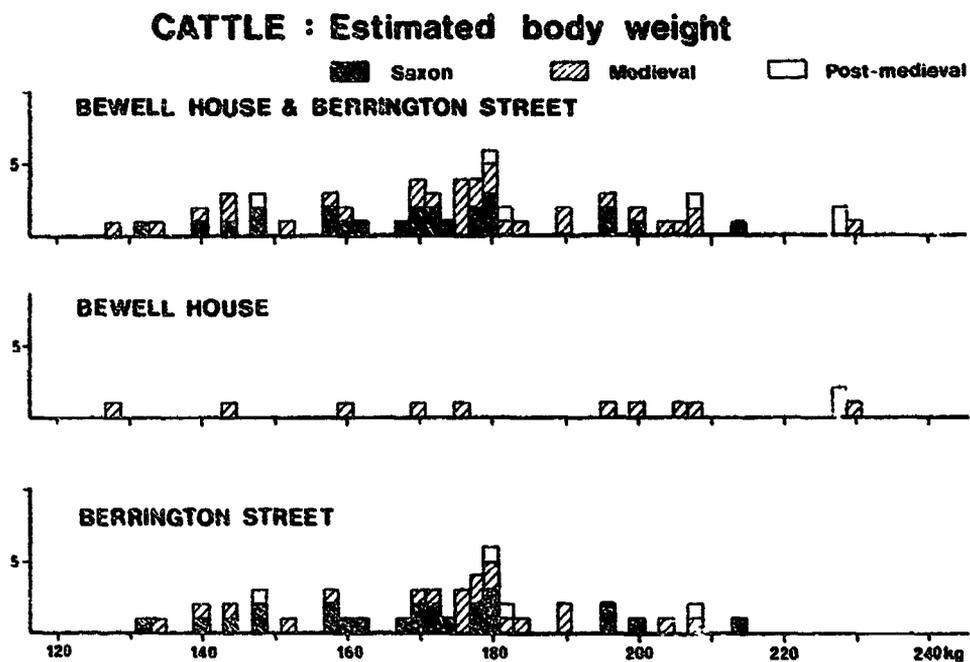
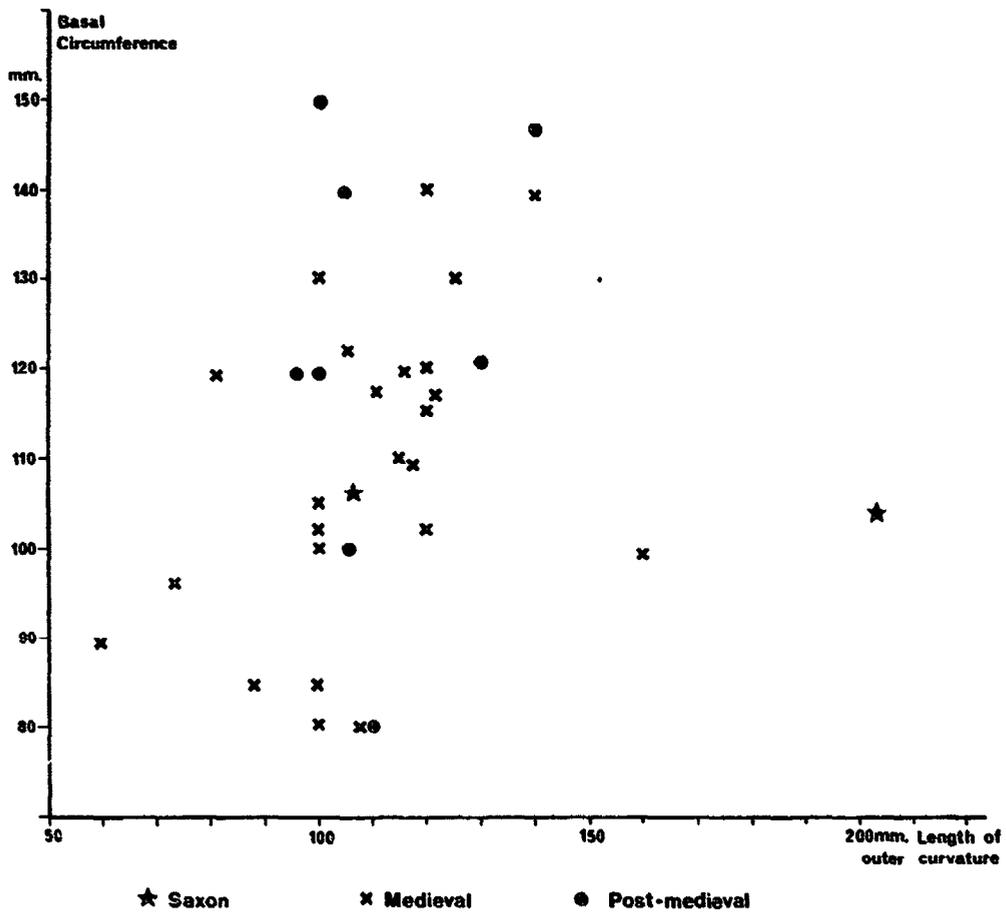


Fig 78 Cattle: esimated body weight - Berrington Street 1-3 and Bewell House



BAN:RS

Fig 79 Cattle: dimensions of horn - Berrington Street 1-3 and Bewell House

**SHERP**

The complete bones have been measured and are shown below and the distribution of bone end measurements has been set out in histogram form ( Fig 81:M8.E10).

PERIOD	BONE	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT WIDTH	
Saxon	Radius	145	28	27	17	
		152	31	29	18.5	
	Metacarpal	120	24	26	15	
		123	22	23	12.5	
		123	22	26	15	
	Metatarsal	135	20	22	13	
117		18.5	21.5	11.5		
Medieval	Radius	132	28	25	17	
		145	29	26	16	
	Metacarpal	109	20	22	13	
		112	20	-	12	
		116	21	22	13	
		118	21	26	14.5	
	Metatarsal	110	18	20	10	
		119	19	24	13	
		120	18.5	21	10	
		127	19	22	12	
	Post-medieval	Radius	135	26	25	15
			150	-	-	19

# BERRINGTON STREET SITES 1-3

## Sheep Measurements

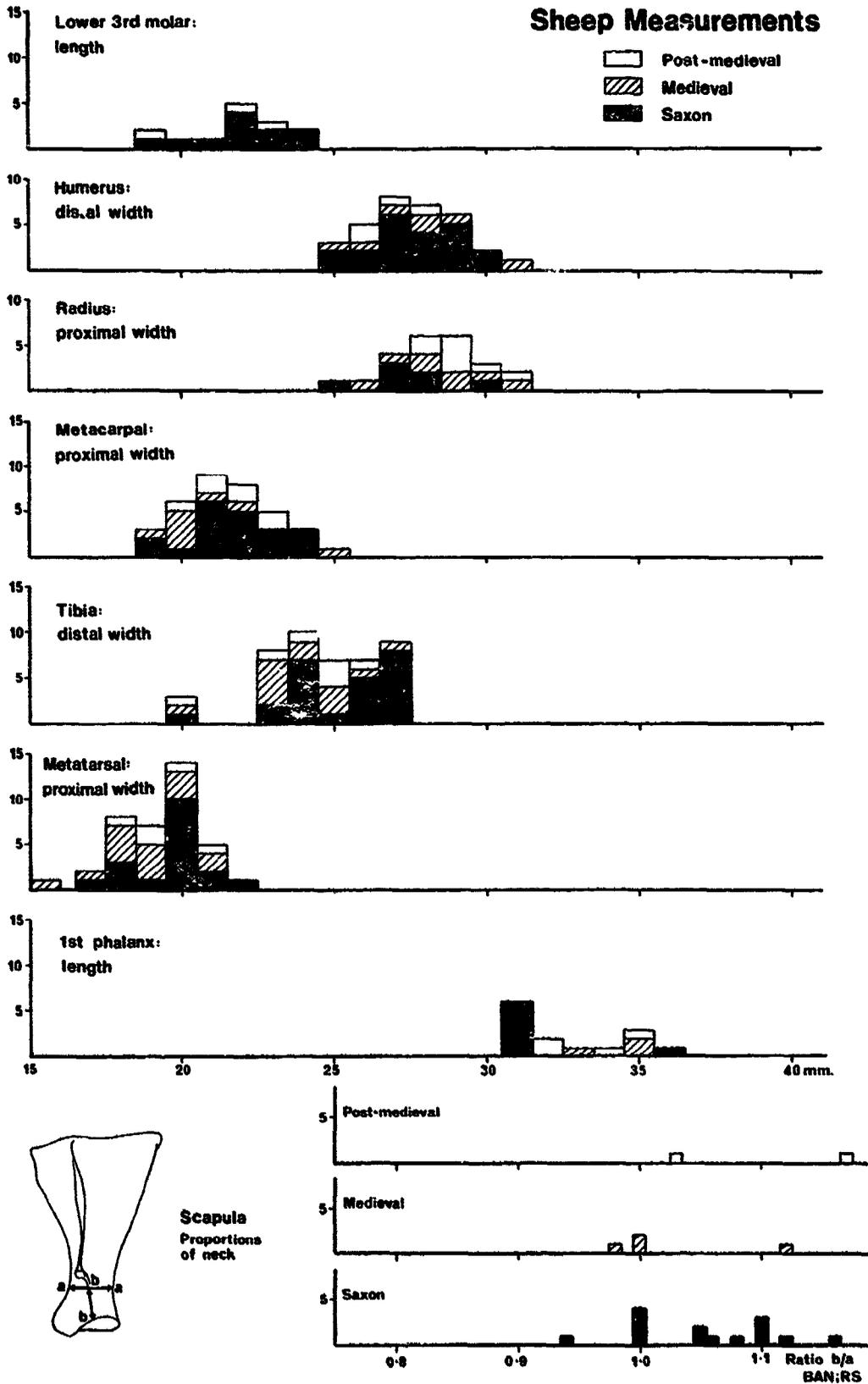


Fig 81 Sheep measurements - Berrington Street 1-3

The measurements may be confused by the inclusion of the occasional goat bone, but in general there is no clear differentiation between the dimensions of the bones of the different periods, although the medieval animals seem to be rather shorter in stature than the Saxon ones. During the Saxon and medieval eras the sheep of both sexes seem to have been horned (Fig 82.1, 2, 4, 5, & 6), the male sheep very heavily so, but there is a post-medieval polled skull (Fig 82.3). The horns of the rams were grooved longitudinally, a feature seen on other Saxon sites, and in at least one case the horn core had split into two, which may have resulted in a four horned condition in life (Fig 82.7). The Saxon sheep is supposed to have been black faced, and the Norfolk Horn, now extinct, carries the horn groove already referred to. Rams' skulls from the massively horned whitefaced breeds, the Exmoor Horn and the exotic Merino, have no such groove. No groove is found in the primitive sheep of the northern short-tailed races, where the multihorned condition is common, or in the present day Welsh Mountain. In the hills near Lampeter in the 18th century there was a massively horned black-faced breed, the Llanllwni, which gave rise to the present day polled Llanwenog. An attempt has been made to illustrate whether the sheep were of the long tailed or short tailed variety (Fig 81:M8.E10). The histogram shows the ratios of the length of the scapula neck divided by its minimum width. In short tailed sheep this ratio is well over unity and in the modern meat producing breeds 0.9 or less. The few specimens available are not sufficient to give a firm diagnosis, but it would appear that a mixture of forms and possible cross breeds were present at all periods. The low winter nutrition of these animals may to some extent invalidate the data obtained from well fed modern animals.

## GOAT

The goat is most easily identified by its horn core (Fig 80.1 & 2) and, as at other medieval urban sites, they are quite common. The medieval animal was more heavily horned than its modern counterpart, and the type of animal is preserved in the Welsh feral goat (Crook, 1969). Large numbers of goats were maintained in the hills of the Marches in the post-medieval period (Thirsk, 1965) and by the 18th century it seems likely that some of these were supplying the glove trade of Hereford, Leominster, and Kidderminster. The meat of these animals would no doubt, have been an acceptable by-product.

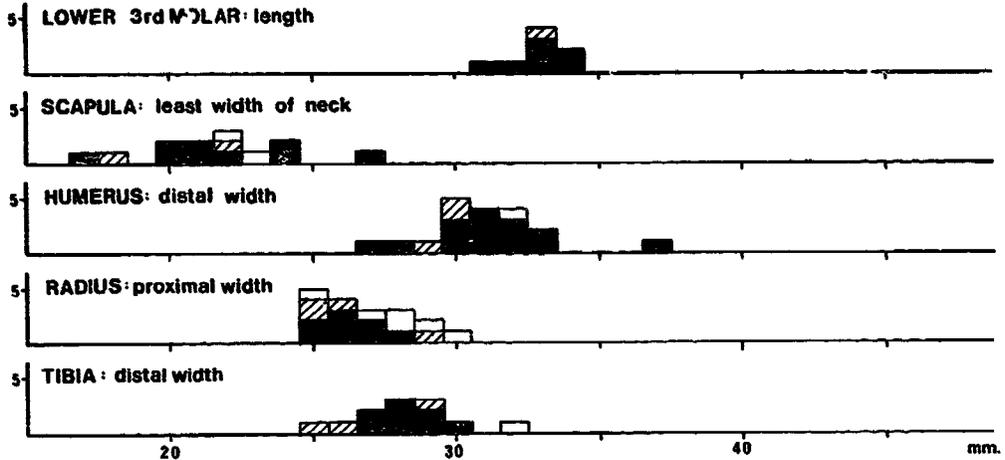
## PIG

It is always difficult to give much account of the pig of the medieval period. The bones are usually fewer than those of the other major species (Noddle and Bramwell, 1975) and the majority of them are from immature animals from which the size of the adult animal cannot be calculated. It can be stated, however, that all the bones found came from domestic animals. The majority of the bone measurements (Fig 83.M8.E13 and below) are from the Saxon period, but where there are sufficient medieval ones for a comparison to be made the Saxon animals are rather larger. However, the animals were in any case much smaller than the modern animal, and probably resembled the small, hairy, slender-limbed animals portrayed in medieval illuminations.

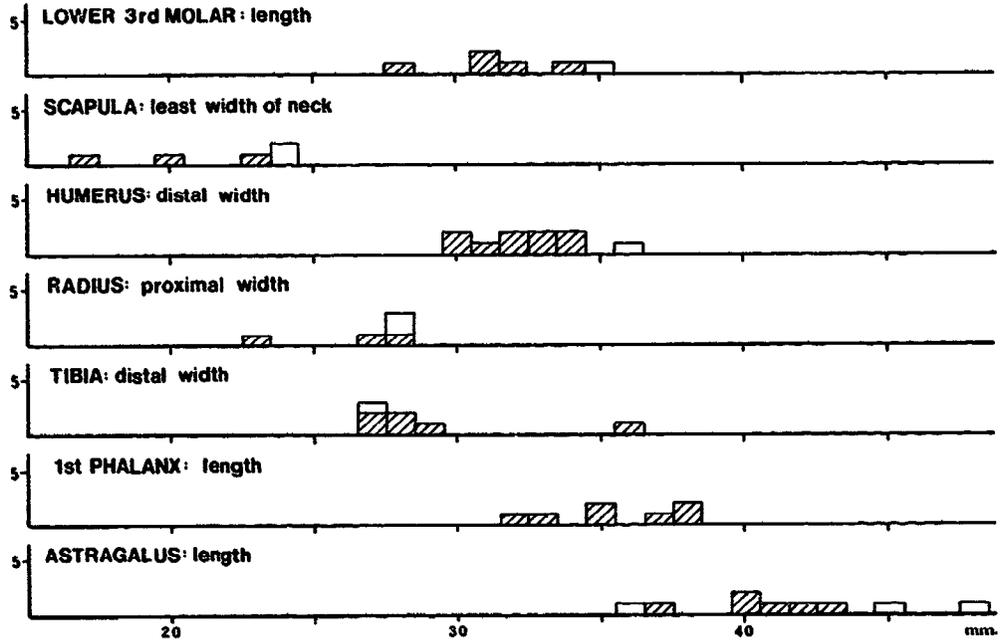
### PIG BONES - MEASUREMENTS (mm)

PERIOD	BONE	LENGTH
Saxon	Metacarpal	65
	Metatarsal	79, 80, 88
Medieval	Metatarsal	94

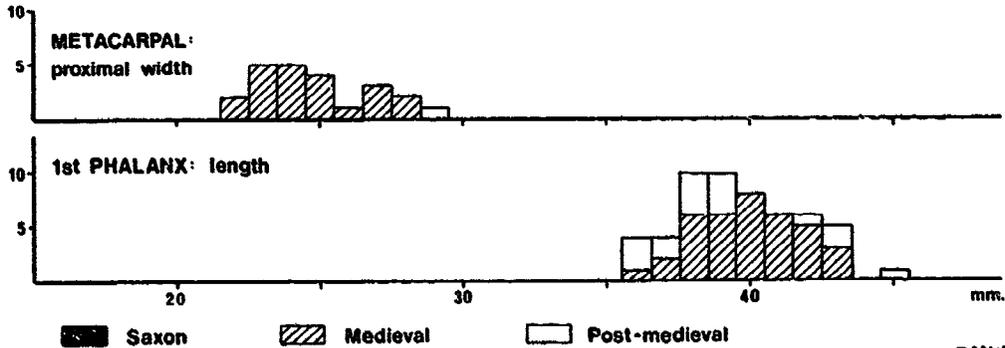
# BERRINGTON STREET SITES 1-3 : Pig Measurements



# BEWELL HOUSE : Pig Measurements



# BEWELL HOUSE : Goat Measurements



BAN:RS

Fig 83 Pig measurements - Berrington Street 1-3 and Bewell House. Goat measurements - Bewell House

## PATHOLOGY

There were few cases of pathology or abnormality observed. Fig 80 .5, 6, and 7 shows three arthritic bovine phalanges from the same animal. This is a fairly common condition and might well have resulted from an infected penetrating wound. The condition is not so advanced as is sometimes the case (Harcourt, 1971) so perhaps the people of Hereford were less optimistic about self cures than those of other areas, or the meat prices were better! One other abnormality was conspicuous by its absence; cattle, and less frequently sheep, of all periods may lack a posterior pillar on the lower third molar. Not one of the 30 specimens of bovine tooth from this collection had the defect, nor did any of the sheep.

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# BEWELL HOUSE

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by B A Noddle

A total of some 7,000 animal bones was identified from this site. The methods used in the Berrington Street report were repeated with a few modifications made in the light of experience. The bones were analysed within the various excavation periods but these have been accumulated in this report for comparative purposes into two broad groups, medieval and post-medieval.

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GROUP	PERIOD(S)	DATE RANGE
Medieval	1-5	11th to mid 14th century (there were very few bones from periods 1 and 2)
Post-medieval	6-8	late 14th century to 19th century (there were few bones from periods 7 and 8)

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(Individual periods are noted where a significant variation occurs)

## THE COMPLETE ASSEMBLAGE

The proportions of the various species present are assessed in three different ways: by weight, by the number of identifiable fragments and by the minimum number of individuals.

PROPORTIONS OF SPECIES

PERIOD		TOTAL IDENTIFIED	CATTLE	SHEEP	GOAT	PIG	OTHER	NOT IDENTIFIED		PERIOD
MEDIEVAL	Weight	70.5kgm	48.3kgm (68%)	13.2kgm (19%)	(included in sheep)	3.9kgm (6%)	5.1kgm (7%)	25.3kgm (26% of total)	Weight	MEDIEVAL
	Number of fragments	5886	2968 (51%)	1821 (31%)	258 (4%)	541 (9%)	298 (5%)		Number of fragments	
	Minimum number of individuals		286 (37%)	233 (30%)	102 (13%)	144 (20%)			Minimum number of individuals	
	Number of fragments per individual		10	8	3	4			Number of fragments per individual	
POST-MEDIEVAL	Weight	19.8kgm	11.8kgm (59%)	5.2kgm (26%)	(included in sheep)	1.1kgm (6%)	1.7kgm (9%)	7.3kgm (27% of total)	Weight	POST-MEDIEVAL
	Number of fragments	1826	720 (39%)	836 (46%)	96 (5%)	106 (6%)	68 (4%)		Number of fragments	
	Minimum number of individuals		120 (38%)	110 (35%)	42 (13%)	45 (14%)			Minimum number of individuals	
	Number of fragments per individual		6	8	2	2			Number of fragments per individual	

(The percentages for individual species are based on the total of identified bone)

Approximately 75% by weight of the material was identified, sheep and goat bones being weighed together. The use of bone weight allows a comparison of weight of meat consumed to be estimated in that bone weight is considered to be 14% of the total (Kubasiewicz, 1956). It can be seen that beef consumption is paramount, being 68% in the medieval period and dropping to 59% thereafter. The opposite situation occurs with mutton, which increases in the post-medieval period whilst the proportions of pig and other animals

(mainly horse) remain roughly constant throughout. The number of bone fragments produces similar information although the percentages differ. The minimum number of individuals is again similar and may give a fairer assessment in the case of pig, and particularly with goat, since many bone fragments of this latter species will have been identified as sheep. The number of fragments per individual is a similar distribution to that found in the medieval and post-medieval levels in Berrington Street (M8.D10-D11).

ANATOMICAL ANALYSIS OF THE MAIN SPECIES IN PERCENTAGES

	CATTLE		SHEEP AND GOAT		PIG		
	MEDIEVAL	POST-MEDIEVAL	MEDIEVAL	POST-MEDIEVAL	MEDIEVAL	POST-MEDIEVAL	
Skull fragments	13	3	9	4	7	7	Skull fragments
Mandible	5	3	8	2	3	1	Mandible
Vertebrae	11	8	10	4	8	4	Vertebrae
Upper fore limb	10	9	12	12	16	13	Upper fore limb
Upper hind limb	7	8	9	13	14	14	Upper hind limb
Carpals and tarsals	9	10	5	3	6	6	Carpals and tarsals
Metapodials	12	10	23	18	11	4	Metapodials
Phalanges	17	15	14	26	8	2	Phalanges
Loose teeth	18	33	10	18	25	50	Loose teeth

The anatomical analysis shows the percentage remains of the principal parts of the body

The high proportion of loose teeth combined with the low numbers found associated with skull and mandible fragments indicates considerable damage to the bones in antiquity. The quantity of foot bones (carpal and tarsal downwards) suggests that the waste could be from butchering rather than from kitchens and the high proportion of hock bones, from which the carcass may be suspended for fleshing may indicate boning out on site.

There is a very high percentage of sheep phalanges in the post-medieval period (mainly period 7a, pit 99, cAD 1710-30) which may indicate tannery waste, assuming that the feet were discarded. There is little sign of material being deliberately removed for bone working, so meat consumption would appear to have been sufficiently great so as to have provided an excess of material for this use. There were few large horn cores from cattle though a reasonable number from goats, but this may be due to fragmentation.

AGE RANGE OF PRINCIPAL SPECIES

PERIOD	CATTLE				SHEEP				PIG				PERIOD
	NEONATAL	JUVENILE	IMMATURE	MATURE	NEONATAL	JUVENILE	IMMATURE	MATURE	NEONATAL	JUVENILE	IMMATURE	MATURE	
MEDIEVAL	23 6%	82 20%	155 38%	153 37%	31 9%	82 21%	178 46%	92 24%	14 3%	62 16%	239 60%	83 21%	MEDIEVAL
POST-MEDIEVAL	63 21%	45 15%	96 32%	94 32%	9 3%	50 17%	92 31%	149 30%	-	46 14%	197 58%	95 28%	POST-MEDIEVAL

Mature cattle drop slightly from 37% to 32% from the medieval to the post-medieval period but this is largely because of the increase in neonatal deaths. With sheep there is a significant increase in mature animals in the post-medieval period, there being a particularly large proportion of lamb (in the butcher's sense) in period 3

(early 13th century) and a high proportion of mature sheep in period 6. Pig, as usual, includes a high proportion of immature animals. Much of the pork may have been cured even if it was home slaughtered.

LESS COMMON SPECIES

PERIOD		HORSE	DOG	CAT	RED DEER	ROE DEER	RABBIT	RAT	FROG	HEDGEHOG	FOX	HARE	PERIOD	
		MEDIEVAL	Total	100	71	63	17	10	13	1	2	1		-
	Number of individuals	28	40	38	12	8	5	1	2	1	-	-	Number of individuals	
POST-MEDIEVAL	Total	13	6	29	11	5	-	-	-	-	1	5	Total	POST-MEDIEVAL
	Number of individuals	7	5	6	8	3	-	-	-	-	1	2	Number of individuals	

The less commonly occurring species were dominated by the horse, dog, and cat. There was very little deer and hare was almost absent. There was one example of wild boar in period 3 which is included in the pig total. It is obvious that hunting contributed little to the meat

supply on this particular site. There were a few rabbit bones, but since this animal burrows, it may not be contemporary. There were scattered dog and cat bones, including two complete burials, one dog from period 7b and a modern cat in period 8.

## INDIVIDUAL SPECIES

### CATTLE

The dimensions of the whole bones are tabulated below and the common measurements have been arranged in histogram form (Fig 84:M8.F9).

#### CATTLE BONES - MEASUREMENTS (mm)

PERIOD	BONE	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT DIAMETER
Medieval	Metacarpal	165	52	48	30
		160	-	-	-
		180	51	48	30
		173	55	53	35
		175	51	45	26
		173	53	50	30
	Metatarsal	205	44	49	24
Post-medieval	Metatarsal	240	56	-	32
		198	41	43	24

Apart from two individual bones there is no great increase in size for the post-medieval group, even with the most modern specimens. The modern Hereford, which is not a large-sized breed, is a possible model. There is no great difference in type as judged from the horn cores although there are considerable sex differences. A scatter diagram of basal circumference against outer curvature of the Bewell House and Berrington Street specimens (Fig 79:M8.E8) is roughly linear with the exception of two large thin specimens. A frequent medieval type, judged to be female, was round, pointed and forward curving (Fig 85.1 - a young animal; Fig 85.2 - an adult).

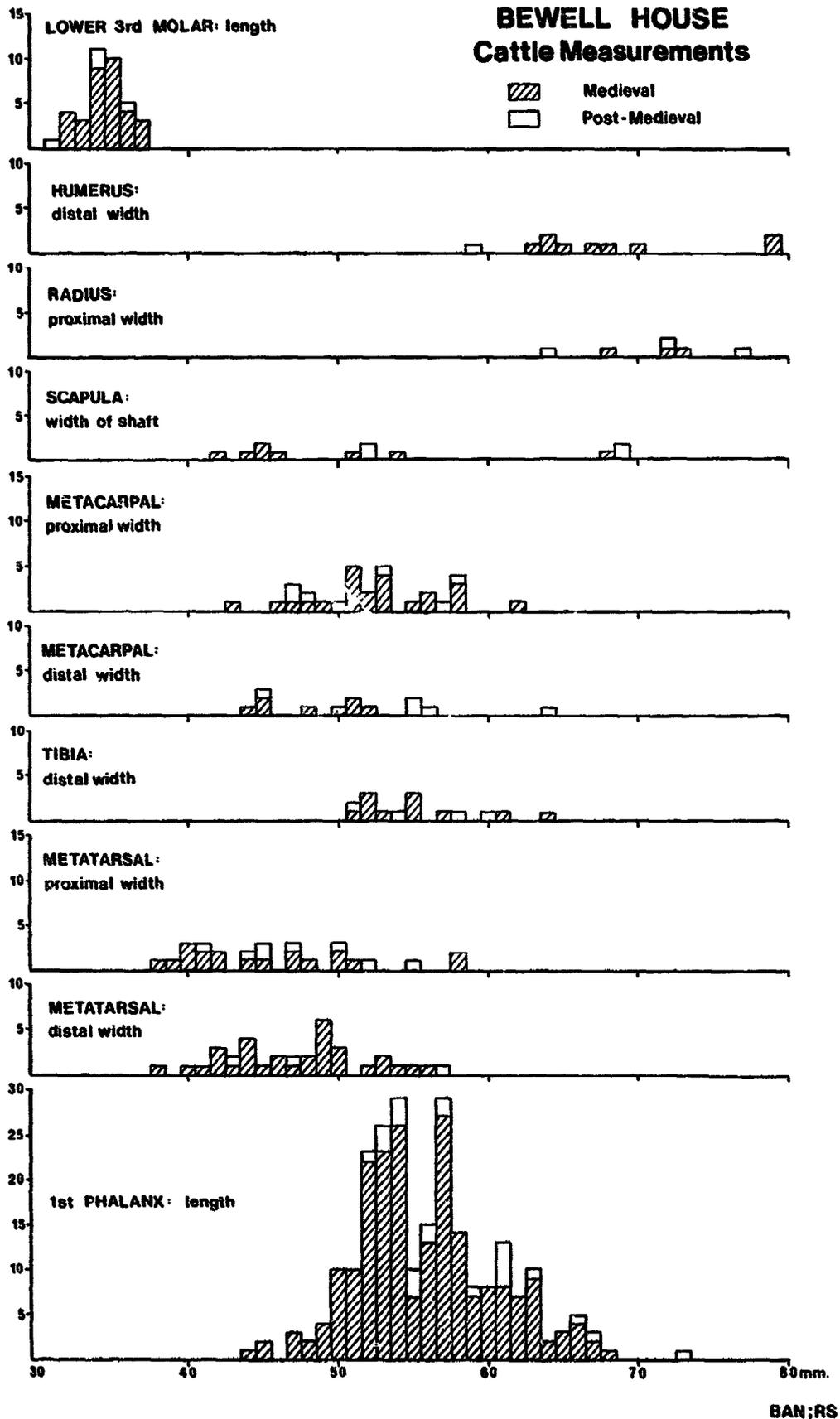


Fig 84 Cattle measurements - Bewell House

One of this type, (Fig 85.3) appears to be artificially pointed but this could be post-mortem. A specimen from period 4 was heavily grooved (Fig 85.5), a fairly frequent but unexplained phenomenon. Period 4 also contained a naturally or artificially polished specimen (Fig 85.4). In period 3 there was a backwards pointing specimen (Fig 85.6), a form illustrated in the 13th century Lutterel Psalter and other medieval manuscripts. Also in period 3 a specimen with a marked groove surrounding the base (Fig 86.1) may be the result of a horn tether or yoke. Other signs of draught cattle include distally splayed metatarsals attributed to the results of traction (Von den Driesch, 1975) which occurred in both medieval and post-medieval contexts.

Other abnormalities included a premolar set at right angles to the normal and an arthritic mandibular condyle (both period 1), and an arthritic distal metatarsal (Fig 86.4) (period 4). Small erosions of phalanges were observed (Fig 86.2) in periods 5 and 7, a common occurrence in rapidly growing, intensively kept animals. Diagonal wear of the lower third molar, not noticed on other sites, was quite frequent (Fig 86.3). Two out of the total of 56 lower third molars, from periods 3 and 7, lacked a posterior pillar. A fragment of bull's frontal bone bore a spectacular axe mark alongside the eye (Fig 86.5).

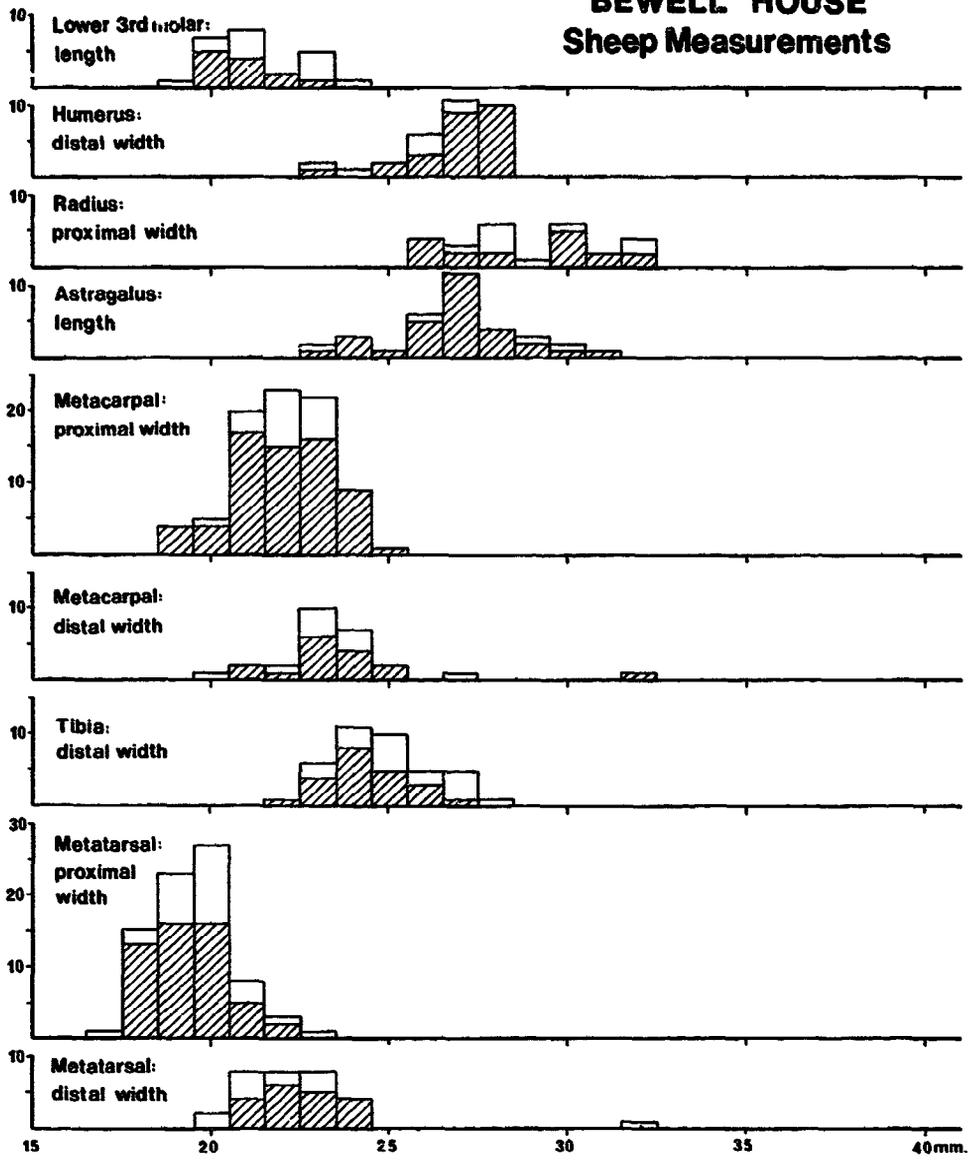
**SHEEP**

The most commonly occurring measurements are in histogram form (Fig 87:M8.F12) and the measurements of the whole bones are tabulated below.

**SHEEP BONES - MEASUREMENTS (mm)**

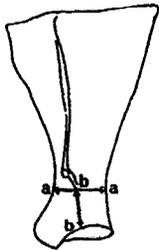
PERIOD	BONE	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT DIAMETER	
Medieval	Humerus	127	36	27	17	
		140	27	26	15	
	Radius	133	28	25	17	
		140	28	25	17	
		140	31	26	17	
		142	26	25	14	
		143	30	-	18	
		Metacarpal	120	-	-	12
			116	22	25	15
	104		22	23	13	
	120		-	25	15	
	Metatarsal	112	19	23	12	
		120	18	22	11	
		118	19	23	12	
		123	19	24	12	
		122	20	24	12	
	Post-medieval	Radius	130	20	27	17
			128	27	-	15
			145	29	28	16
		Metacarpal	107	22	23	13
113			23	24	15	
121			22	24	13	
116			22	25	13	
112			20	22	12	
117			23	27	15	
107			21	23	12	
Metatarsal		117	20	22	12	
		115	18	21	10	
		103	17	20	10	
		111	18	20	9	

# BEWELL HOUSE Sheep Measurements

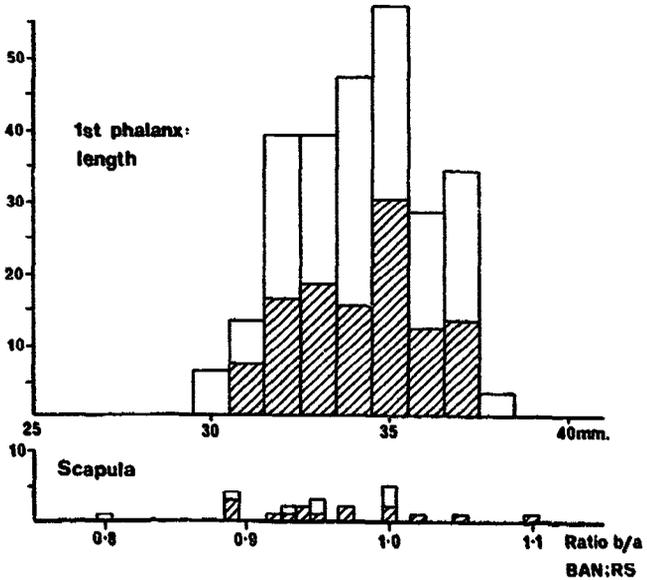


**KEY**

- Medieval
- Post-Medieval



**Scapula**  
Proportions of neck



**Fig 87 Sheep measurements - Bewell House**

There is no increase in size in the post-medieval period, indeed if anything there is a reduction. This may be accounted for by the small size of the likely modern breeds, the Welsh Mountain and the Ryeland. However, the present day Ryeland has very thickset bones, and there was little evidence of this in the material. There was a slight tendency for the neck of the scapula to become shorter and thicker, and this seems to accompany the development of modern meat qualities in the sheep. Another factor which may prove useful in evaluating types of sheep is the position of the nutrient foramen of the femur, but this is still under investigation. However, it is worth recording that, from the medieval period, there were five specimens exhibiting the proximal position, eight the distal and two both, and from the later post-medieval periods there were two proximal and two distal foramina and one double. From the multiperiod site at Walton, Aylesbury definite changes were observed (Noddle in Farley, 1976, 280). The form of the horn core is more variable than the differences in sex seem likely to cause, and there were polled and scurred specimens from both periods. This would seem to indicate either that there was no fixed type of sheep or that the animals came from different areas where different types were maintained (Fig 88.1 & 2). There was one multicerate specimen from period 4 (Fig 88.3). The pathological specimens included a third phalanx exhibiting footrot (period 6) and periodontal disease of the mandible (periods 3 & 4).

#### GOAT

Because of the difficulty of distinguishing many of the bones of goat from sheep, only those of the feet and head can receive comment. The animals bore substantial horns, whether male or female. It was possible to sex 35 cores from the medieval period of which 16 were female and 19 male. There were no

sufficiently large fragments for sexing from the post-medieval period, and there were fewer horns, although foot bones continued to appear. The metapodials, (see table below), were short and thickset, unlike those of the modern animal, but very similar to those of some of the Scottish feral goat flocks, including those from Galloway and Rhum, which are supposed to be of medieval origin.

GOAT BONES - MEASUREMENTS (mm)

PERIOD	BONE	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT DIAMETER
Medieval	Metacarpal	110	24	28	16
		103	24	28	18
		94	24	28	17
		110	24	27	15
		113	24	28	16
	Metatarsal	120	21	25	13
Post-medieval	Metatarsal	112	19	24	13

No comparative material is available from Welsh feral goats. A number of the phalanges, particularly the largest, exhibit the fusion line of the epiphysis, which is a characteristic of the castrate male goat (Noddle, 1974). At least 50% of all individuals from both periods were immature, and it is suggested that the male animals were killed at about two years old, not only for their meat, but also for the hide and horns, whereas females were retained for breeding and probably milk production. The dimensions of the metacarpals and the first phalanx are recorded (Fig 83:M8.E13). Two specimens of feet exhibited signs of extensive and chronic infection (Fig 88.4 and 5) and there was an arthritic elbow joint in period 3.

## PIG

Though the bones from pigs were few and fragmentary, sufficient measurements were obtained to indicate that there was a slight increase in size between the medieval and post-medieval periods.

### PIG BONES - MEASUREMENTS (mm)

PERIOD	BONE	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH	MIDSHAFT DIAMETER
Medieval	Tibia	170	43	27	20
	Metacarpal	68	-	-	-
		69	-	-	-
		69	-	-	-
	Metatarsal	82	-	-	-

One specimen from period 3 was sufficiently large to have come from a wild boar. An arthritic astragalus was obtained from period 5 and an immature metacarpal showing changes characteristic of rickets was obtained from period 3 (Fig 88.6). So few of the individuals could be aged that it would be unwise to base any discussion upon them.

## HORSE

There were insufficient horse bones to allow any conclusions to be made.

PERIOD	BONE	LENGTH	PROXIMAL WIDTH	DISTAL WIDTH
Medieval	Humerus	-	-	51
	Metacarpal	-	50	-
	Metatarsal	-	50	-
	1st phalanx	83	-	-
		76	-	-
		78	-	-
	81	-	-	
	82	-	-	
Post-medieval	Tibia	-	-	76
	1st phalanx	82	-	-
	2nd phalanx	46	-	-
		52	-	-

## DOG

Dog bones were found in two sizes, one about the size of a fox terrier and the other very much larger. The latter could have included wolf.

PERIOD	BONE	LENGTH
Medieval	Lower carnasial tooth	21 16 18
	Radius	203
	Tibia (puppy lacking epiphyses)	180
	Calcaneum	45
	Metatarsal	97

There was a more or less complete skeleton of a dog in period 7a, but unfortunately the skull was fragmented. It was an elderly arthritic animal showing chronic loss of many teeth. It had the following bone lengths:

lower carnasial	17
humerus	120
ulna	140
femur	128
tibia	127

## DEER

A fine specimen of roe deer antler, about 250mm in length, came from period 6. The single measureable specimen of red deer, from period 5, a proximal metatarsal of 38mm width indicates an animal larger than the medieval average from other parts of England, suggesting tracts of undisturbed woodland.

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## CONCLUSIONS

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by B A Noddle

### THE COMPLETE ASSEMBLAGE

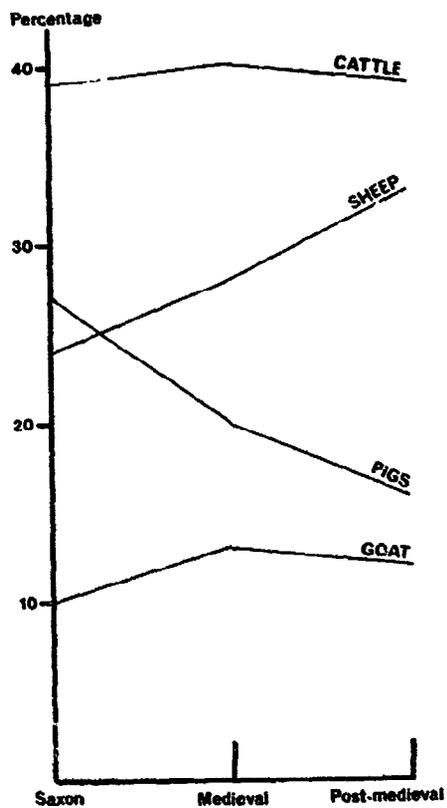
The number of animal bones identified allows for a reasonable evaluation of the Saxon, medieval and post-medieval periods, and for comparisons to be made between them, though not all periods are represented at every site. A comparison of the weight of bone of each species or the number of identified fragments found is perhaps biased in favour of cattle, so the minimum number of individuals present of each of the main species is considered. This number is expressed as a percentage of the main species in each broad dating group (Fig 89:M8.G6).

Throughout the whole historic period cattle predominated, averaging some 40% of the individuals found. The proportion of sheep increased from 24% in the Saxon period to 33% in the post-medieval period and this was balanced by a decrease in the proportion of pigs from 27% to 16%. Only some 12% of the population were goats, and hunted species on all the sites comprised less than 3% of the total number of individuals. A comparison of the Berrington Street assemblage with other British sites (Noddle and Bramwell, 1975) in the Saxon and medieval periods shows that the quantity of cattle is higher and of pig lower than at sites further east. Goat was also higher but hunted species, birds and fish were lower. The proportion of cattle bones is most dependent on region and the high quantity in Hereford may be attributable to the availability of cattle in the local area, and, in the medieval period, in the Welsh upland areas. There is documentary evidence (Skeel, 1926) that during the 13th century cattle were being sent from the western regions of the country as far as East Anglia.

In the Saxon and medieval periods pigs were kept extensively in woodland and the decrease in the proportion of pig may reflect the gradual change in Herefordshire from large tracts of woodland to an agricultural economy. The comparative lack of deer and game birds throughout the sequence is indicative of the poverty of the occupants; hunting and hawking were the prerogative of the wealthier classes.

The cattle appear to have been of average medieval stock in size, weight, and horn formation with little change of size throughout the period, even with the most modern specimens. The modern Hereford, which is not a large-sized breed, is a possible model. Sheep appear to have become progressively smaller which may be accounted for by the small size of the likely modern breeds, the Welsh Mountain and the Ryeland. However it would appear that a mixture of forms and possible cross-breeds were present in all periods. The goats were more heavily horned than the modern counterparts, the type of animal possibly being preserved in the Welsh feral goat (Crook, 1969). Although many pig bones came from immature specimens, it would appear that the medieval animal was smaller than the Saxon or post-medieval one. However, the specimens were all smaller than the modern animal, and probably resembled the small, hairy, slender-limbed animals portrayed in medieval illuminations. With the exception of one possible specimen, all the bones came from domestic animals.

There was little significant difference in bone measurements from the four sites although the Saxon animals tended to be rather larger than the medieval ones. The complete measurements have been tabulated for each individual site, but for comparative purposes the accumulated measurements for cattle and sheep from all the sites examined are shown in Figs 90:M8.G8 and 91:M8.G9.



**Fig 89** Animal bones from all sites showing the minimum number of individuals of the main species present in various periods

Sufficient immature animals were found to indicate that the meat was not merely derived from worn out stock but that deliberate slaughter for meat (and probably hides) was practised. The proportions vary from site to site. At all sites "waste" bone from the head and feet predominated indicating local slaughtering.

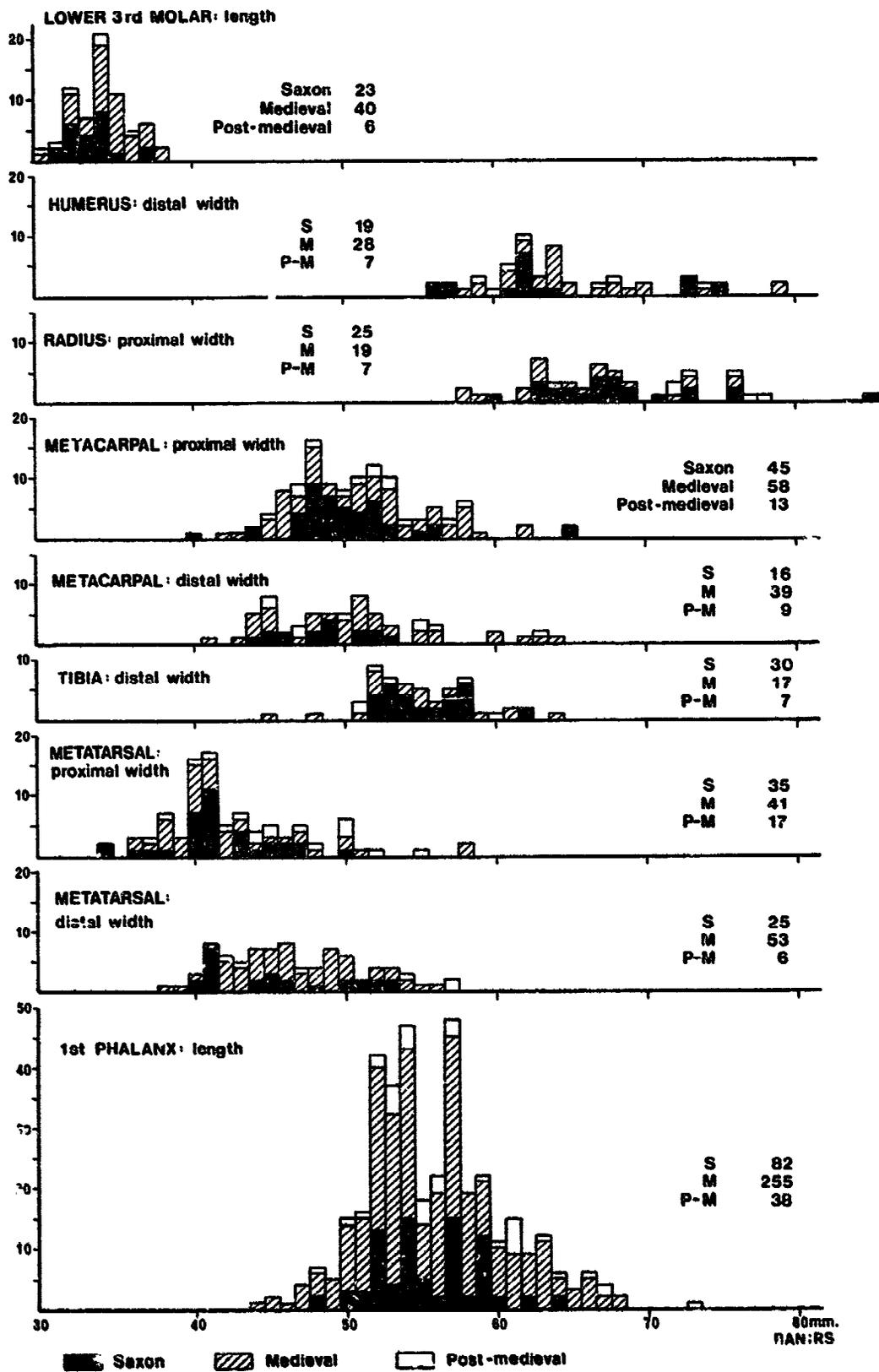


Fig 90 Cattle bone measurements from all sites

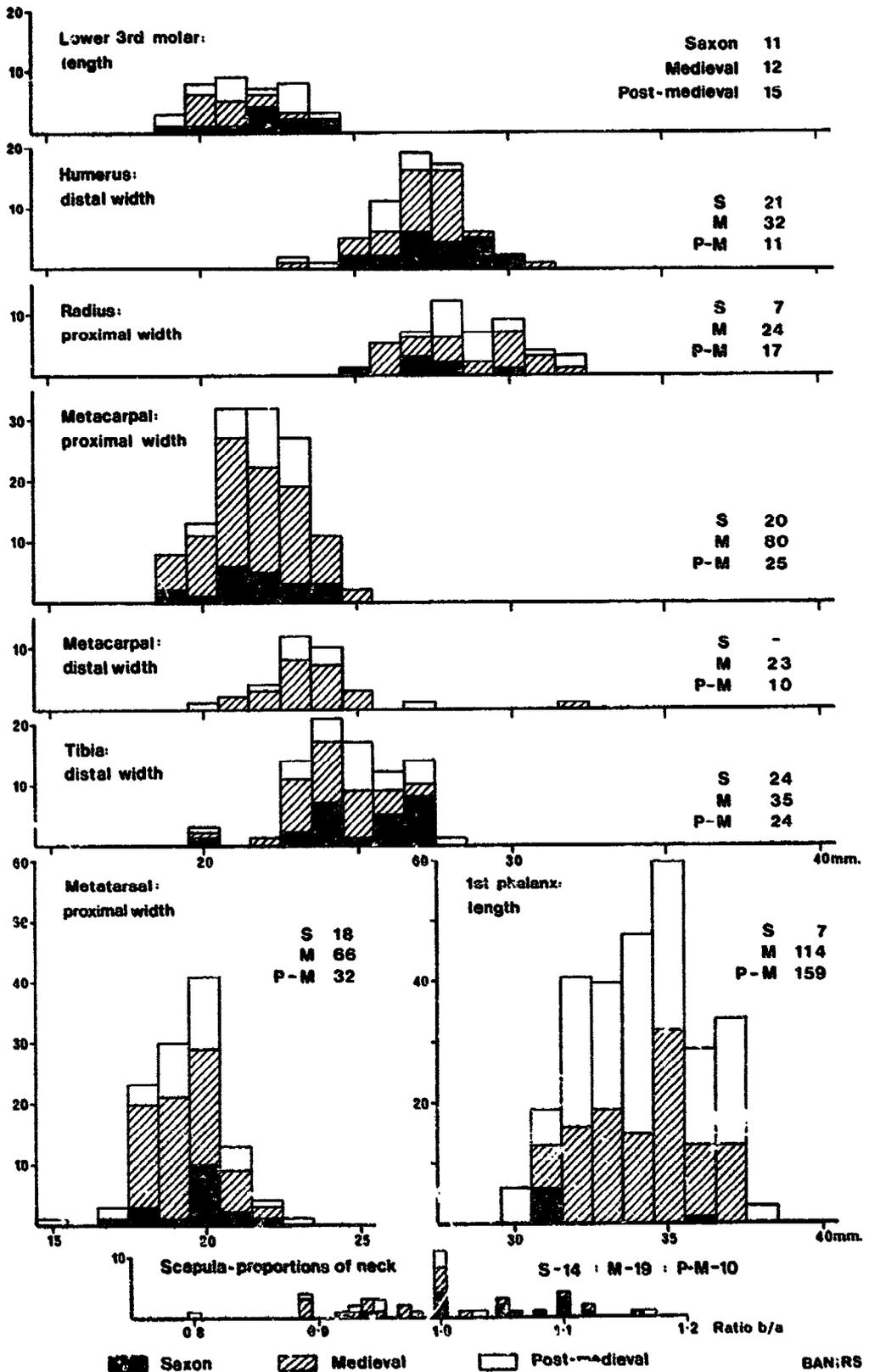


Fig 91 Sheep bone measurements from all sites

## A COMPARISON OF THE FOUR SITES

As there was no Saxon material from Bewell House and the Brewery and no medieval or post-medieval material from Victoria Street, the following comparisons are based mainly on the medieval material with comments on the remainder where this is appropriate.

With regard to the proportion of species (Fig 92:M8.G11) cattle were rather more numerous and sheep less so at Berrington Street than at Bewell House. At the Brewery, Harcourt found about the average proportion of cattle but less sheep and rather more pigs and goats. It is obvious from the number of measurements that he was able to obtain, and the number of whole metapodials found, that his sample was far less fragmentary than those from the other sites, probably because the excavators only kept material from the pits. This may have allowed for goat to be more easily identified at this site. In the post-medieval period, Berrington Street continued to have less sheep and goats and more cattle than Bewell House; however the proportion of pig increased at Berrington Street and decreased at Bewell House as compared with the medieval period.

The number of bone fragments per individual drops sharply from the Saxon to the medieval periods at both Berrington Street and Bewell House. The drop occurs in all main species but is most marked in the case of cattle. This could be due to eating and cooking habits changing from dining groups and large kitchens to family eating. Alternatively

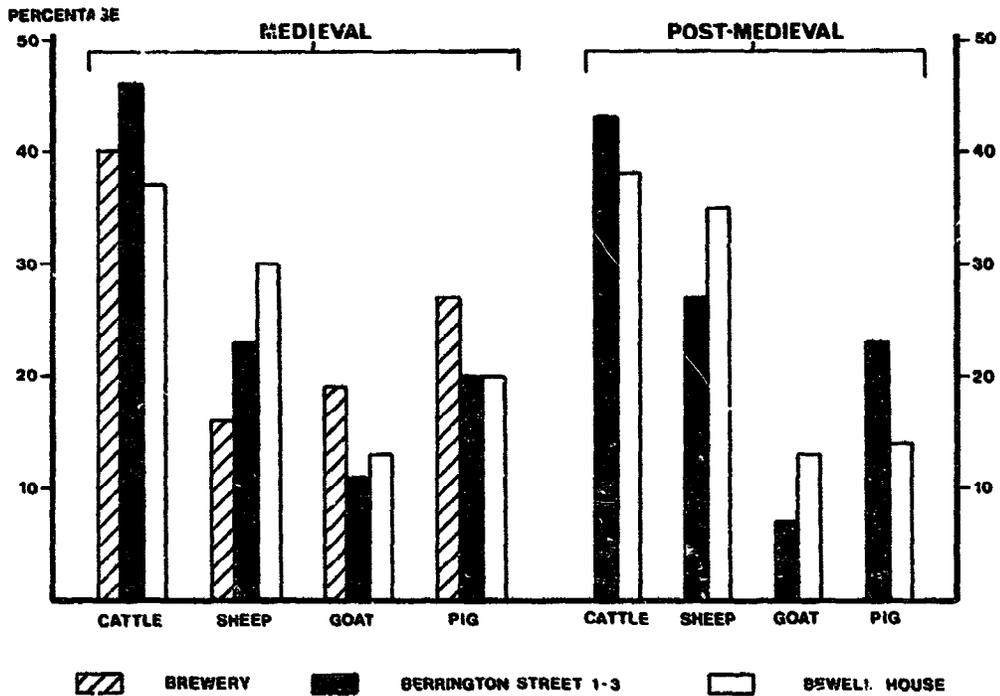


Fig 92 Proportions of species in the medieval and post-medieval periods on all sites

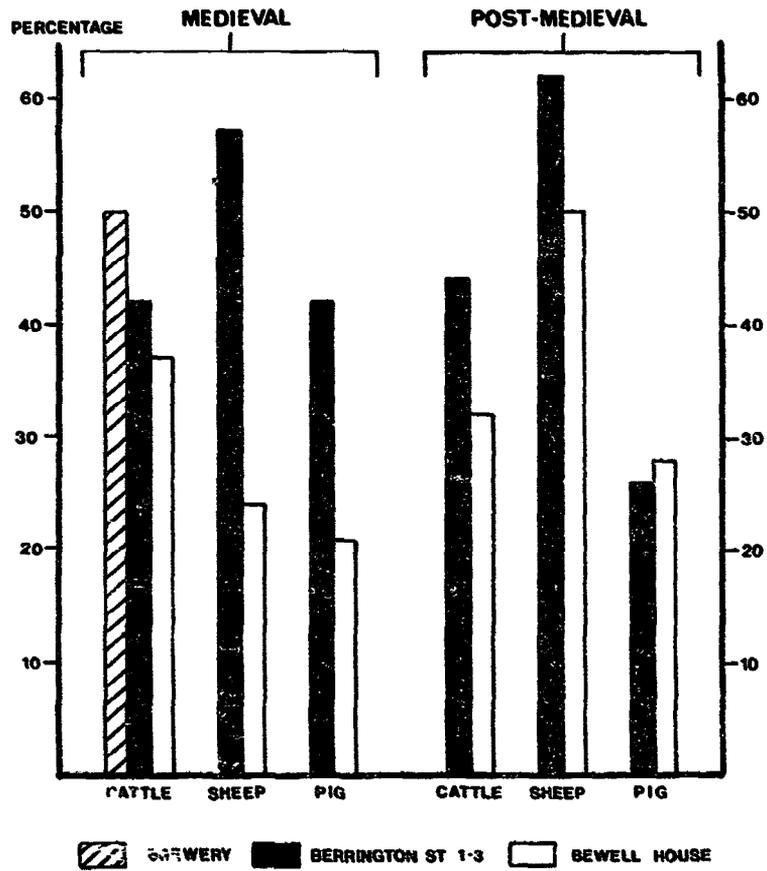


Fig 93 Percentage of species achieving maturity in the medieval and post-medieval periods on all sites

the same result might be obtained by the introduction of retail butcheries selling small portions. If modern retail butchery is any guide, beef is sold boned out, the bones remaining with the butcher; however, beef carcasses are much larger nowadays than those of the medieval beast.

The age ranges of the main species show some valid differences between Berrington Street and Bewell House. The chart (Fig 93:M8.G12) shows only the percentage of specimens achieving maturity, the proportions of young and immature animals are given in the site reports. There were slightly less mature cattle at Bewell House than at Berrington Street, particularly in the post-medieval period. The main differences however are in sheep and pig. At Bewell House in the medieval period a much higher proportion of juvenile and immature animals were found than at Berrington Street although the proportions were largely restored in the post-medieval period. These variations may reflect an economic difference in that lamb is a more expensive meat than mutton, but medieval prices are not known.

Comparison between bone dimensions is not easy, as there were few medieval measurements from Berrington Street. However, it would appear that the bovine metapodials from the Brewery tended to be larger than those from Bewell House. This could be due to a residual Saxon contribution to this collection.

It is possible to make a comparison of the anatomical distributions at Berrington Street and Bewell House, which may give some hints about site usage. For the medieval period, amongst cattle bones, the loose teeth and phalanges were more frequent at Bewell House, and forelimb bones less frequent, other bones being more or less equal. The same relationship was also true of the post-medieval period, though the small number of bones from Berrington Street reduces the value of the information.

Amongst sheep and goat in the medieval period phalanges were very much more frequent at Bewell House and fore and hind limb bones were less frequent. In the post-medieval period loose teeth were also more frequent and mandible less frequent and difference in fore limb even more marked. For pig, phalanges and loose teeth were much more frequent at Bewell House, and vertebrae and fore limb less frequent; the relationships for the post-medieval period were the same. Everywhere, at Bewell House, carpal and tarsal bones of all species were more frequent; it was not thought they warranted separate estimation at Berrington Street.

The large quantity of loose teeth at Bewell House during the medieval period is indicative of the disturbed nature of the layers as compared with the same period at Berrington Street where the majority of medieval remains came from pits. The large number of carpal and tarsal bones at Bewell House, which could indicate butchering, and the similarly large number of phalanges which could be tanning waste, emphasises the industrial nature of this site as compared with Berrington Street where the bone remains are more indicative of kitchen waste. This may partly explain the variation found in the specimens reaching maturity at each of the sites. The largest proportion of mature animals was found at Berrington Street whilst at Bewell House there was a high proportion of juvenile and immature specimens, particularly sheep and pig. The younger specimens may well have been bought in for their industrial use with the meat being a secondary consideration.

# THE BIRD BONES

by D Bramwell

Bird bones were examined from Berrington Street sites 1-3 and from Bewell House, and are analysed in the table (M9.A3-A4). (Species present at the Brewery are included for completeness). There were no special methods used on any of the sites to ensure full recovery of the smaller bones.

There were 312 identified bones, 173 from Bewell House and 139 from Berrington Street sites 1-3. The bones have been analysed in the three date ranges used in the animal bone report: Saxon, medieval, and post-medieval. There were 13 bones in the Saxon period; 136 in the medieval; and 163 in the post-medieval group. Together these represent a minimum of 76 individuals of which 5 were Saxon, 30 medieval and 41 post-medieval.

The number of specimens is too small to draw any significant conclusions, but the increase of bird bones to total bones from the medieval to the post-medieval periods is common to both sites although greater at Berrington Street. The number of different species also increases in the post-medieval period.

## PROPORTIONS OF BIRDS TO TOTAL ANIMALS

SITE	PERIOD	PERCENTAGE OF FRAGMENTS	PERCENTAGE OF MINIMUM NUMBER OF INDIVIDUALS
BERRINGTON STREET 1-3	SAXON	0.5	2.8
	MEDIEVAL	1.6	2.3
	POST-MEDIEVAL	10.3	12.4
BEWELL HOUSE	MEDIEVAL	1.8	2.4
	POST-MEDIEVAL	3.5	6.4

(The 35 bones of the whooper swan are counted as one in the above table)

SITE	PERIOD		Gannet	Mallard or Pintail	Teal	Domestic duck	Domestic goose	Goose species	Whooper swan	Sparrow hawk	Red kite	Pheasant	Domestic fowl	Pea fowl	Turkey	Plover species	Woodcock	Domestic(?) dove	Tawny owl	Finch species	Raven	Crow or rook	Blackbird	PERIOD	SITE	
BREWERY	MEDIEVAL						*						*											MEDIEVAL	BREWERY	
	POST-MEDIEVAL				*	*							*							*	*			POST-MEDIEVAL		
BERRINGTON STREET 1-3	SAXON	Number of fragments				1	4						8											SAXON	BERRINGTON STREET 1-3	
		Minimum number of individuals				1	1							3												
	MEDIEVAL	Number of fragments			1	1	7							11	2						2	4	1		MEDIEVAL	
		Minimum number of individuals			1	1	1							1	1						1	1	1			
	POST-MEDIEVAL	Number of fragments		1?		2	9	1	35	2				40						1			5	1	POST-MEDIEVAL	
		Minimum number of individuals		1		1	2	1	1	1				7						1			1	1		
BEWELL HOUSE	MEDIEVAL	Number of fragments	2	1		1	35				1		56			4	1				6			MEDIEVAL	BEWELL HOUSE	
		Minimum number of individuals	1	1		1	4				1			9			2	1				2				
	POST-MEDIEVAL	Number of fragments		1		4	11						1	34		6	3		4		1	1			POST-MEDIEVAL	
		Minimum number of individuals		1		2	5						1	7		1	3		2		1	1				

As usual, the bones of the domestic fowl and goose predominate, there being about twice as many fowl as geese throughout all periods. A few of the domestic fowl bones show a broad and robust form of shank (tarsometatarsus) indicating a rather short-legged heavy breed of fowl. Fig 80.8 shows the pathological tibiotarsus of a cock which is of very long standing. Such a chronic condition might have resulted from keeping the bird tethered by its leg. One goose pelvis from Berrington Street was longitudinally split, suggesting that half birds could be purchased. One large goose would provide as much meat as four or five domestic fowls.

The strangest bird find is that of the gannet, a truly pelagic species which is seldom seen inland, and then only due to storm action. Gannet bones appear often in Scottish settlements and until recently formed an important item of food for some islanders. The nearest gannetry to Hereford was probably on Lundy Island in the Bristol Channel.

The appearance of water birds is interesting, the wild goose and whooper swan being winter immigrants to Britain. The latter is of particular interest in that most of the skeleton of one bird was found.

The sparrow hawk probably indicates hawking with possible prey such as the woodcock and plover and possibly the finch. The red kite is a scavenger which often turns up on castle and small town excavations, and the raven has a fondness for poultry chicks.

The pea fowl in the medieval period at Berrington Street was presumably an adornment for a large garden or it may have provided

the centre piece for an important banquet. The pheasant and turkey in the post-medieval Bewell House site must also at that time have been a luxury food. The few wild birds in the collection seem to indicate forest and marshy meadow close to the town.

# THE FISH BONES

Fish bones from Berrington Street sites 1-3 and Bewell House bone assemblages were abstracted for further study during the examination of the animal bone. An environmental sample from Berrington Street site 4, pit 651, also contained a quantity of fish bones which were examined separately. Apart from pit 651 no special retrieval methods were used.

## BERRINGTON STREET SITES 1-3

by A K G Jones

Only three fish bones were found amongst the animal bone collections from these three sites. They were all from the medieval period, one being a vertebra (Cyprinidae), the second a clavicle of Ling (Molva molva) and the third could not be identified.

## BERRINGTON STREET SITE 4

by P J Spencer

Period 6, Pit 651 (c. AD 1700-1720)

Eight species of marine and freshwater fish were identified from the skeletal and dermal remains recovered from the pitfill. A sample of the fill, sieved to 300 microns, was examined and thus only a small proportion of the bones have been recovered. Most of the headbones, particularly the jawbones, were identified to species, but the vertebrae, ribs and finrays are less diagnostic. Although some fish, such as the eel, have very characteristic vertebrae, the majority are not distinctive and can only be identified to family, as with the Salmonidae and Cyprinidae. The numerous rib and finray fragments were unidentifiable.

SPECIES	SKELETAL AND DERMAL REMAINS	MIN NO OF INDIVIDUALS REPRESENTED	APPROX TOTAL LENGTH
<u>Acipenser sturio</u> Sturgeon	3 scutes - 1 dorsal 2 lateral	1	740mm
<u>Anguilla anguilla</u> Eel	12 vertebral centra	1	300mm
Cyprinidae indeterminate	Various fragmentary headbones 31 vertebral centra Scales	-	-
<u>Esox lucius</u> Pike	1 dentary (L) 12 vertebral centra	1	350mm
<u>Gadus morhua</u> Cod	11 clavicles (6L; 5R) 1 post-temporal bone (L) 15 abdominal vertebrae 15 caudal vertebrae	6	750-950mm (4-7.5kg)
<u>Leuciscus cephalus</u> Chub	2 dentaries (1L; 1R) 1 pharyngeal bone 1 parasphenoid 5 clavicles (2L; 2R) 2 opercular bones (R) 1 modified first vertebra 12 abdominal vertebrae	5	300-370mm
<u>Leuciscus leuciscus</u> Dace	5 dentaries (3L; 2R) 2 premaxillae (R) 3 maxillae (2L; 1R) 2 articular bones (R) 1 pharyngeal bone ( <u>Leuciscus? leuciscus</u> ) 1 parasphenoid 1 clavicle (R) 1 opercular bone (L) 1 pre-opercular bone (L) 2 hyomandibular bones (1L; 1R) 1 pelvic bone (L)	4	130-250mm
<u>Perca fluviatilis</u> Perch	1 clavicle (L) 7 scales	1	300mm
Salmonidae Indeterminate	2 vertebral centra	-	-
<u>Salmo ?salar</u> Salmon	2 vertebral centra	1	740mm

Notes: L Left; R Right

The approximate total length is based on a comparison with bones from specimens of known length.

The dermal remains include three characteristic scutes of the sturgeon and a number of scales, including perch and a cyprinid, probably dace.

Cod, the only marine fish identified, was obviously transported from the coast. At least six individuals are represented by their clavicles, some vertebrae and one headbone. The general shortage of headbones and low number of vertebrae found (six individuals would produce more than the thirty vertebrae) is possibly due to partial recovery but, if it is assumed that the deficiency is representative of the complete pitfall, the remains may represent in part fish beheaded, gutted and preserved by drying and/or salting for transport and storage. Transport of fresh cod to Hereford should have been possible by the early 18th century and these fish could have been sold complete or processed by fishmongers and sold in pieces.

The other fish identified are all typical of a riverine fauna and the majority of remains represent quite large specimens of the various types of fish. In the case of the chub and particularly the dace the estimated sizes may not seem very great, but dace rarely exceeds 300mm while chub only exceptionally attains 600mm.

The salmon, sturgeon, and perch would have been large enough to provide good eating. Dace and chub are not reputed to be good food; the dace being generally too small and bony to have any food value and the chub is bony and is considered to have a watery, tasteless flesh. However, Izaak Walton, writing in 1653, considered the chub to be 'a much better dish of meat than you, or most folk, even Anglers themselves do imagine'. He gives two methods for dressing and cooking chub to make it palatable (Walton, 1653).

The sturgeon is now a rare fish in British waters and no longer uses local rivers to spawn. They have been seen in the last twenty years in the lower reaches of the Severn and were apparently common in the 18th and early 19th centuries in the Wye.

All the freshwater fish could have been caught in local rivers and streams. Chub are usually found in rivers, particularly those with clear, running water, while dace prefer fairly fast-flowing rivers and streams, and young pike inhabit weedy rivers, streams and lakes. The salmon and sturgeon may have been caught coming upriver to spawn. Many of these species are valued angling fish, either for their fighting ability, or for their willingness to take the bait.

#### BEWELL HOUSE

by A K G Jones

A total of 29 fish bones were found at Bewell House - 24 came from medieval levels: thirteen from context 400, the period 3 soil level (early 13th century); and eleven from context 382, a period 5 pit in area F (late 13th to mid 14th century). The remaining five isolated specimens came from later contexts.

#### MEDIEVAL

Context 400: Nine cranial bones, a post temporal, a clavicle, and one vertebral centrum of ling Molva Molva. One anal pterygiophore from a flatfish, probably flounder Platychthys flesus or plaice Pleuronectes platessa.

Context 382: Eight cranial bones and three clavicle fragments from ling (two individuals).

## POST-MEDIEVAL

Caudal vertebral centrum, ling.

Dermal denticle (buckler) of thornback ray

Raja clavata.

Vertebral centrum from elasmobranch (dogfish, skate, ray).

The majority of fish remains are from ling, a marine fish which occurs at depths of 100-400m off the coasts of south-west England, Ireland, Scotland, and in the northern North Sea extending into Icelandic waters. It is traditionally caught on long lines. Ling appears to have been an important fish in medieval times, probably because it is readily preserved by salting or drying, although the relatively large numbers of ling cranial and clavicle bones suggest fresh fish were imported. Thornback ray and flatfish are also marine fish with good eating qualities.

## CONCLUSIONS

The medieval remains are all of marine fish and, although the quantity is small, they indicate the presence of a fishing industry exploiting western or northern waters and transporting their catches to town. It is surprising to find a total absence of freshwater fish from the medieval levels with an immediately local source available in the Wye. This is almost certainly because no special retrieval methods were used to collect the smaller bones and consequently many small fish may have been overlooked.

The post-medieval period is mainly represented by the sieved sample from pit 651 (Berrington Street 4, period 6) dated to cAD 1710. If it is accepted that most of the material in this pit was food debris and domestic refuse as seems probable, then some quite small fish were being eaten. The fish remains from this pit suggest the exploitation of stocks from local rivers and streams, supplemented by imported cod and the occasional consumption of rare fish such as sturgeon.

# MOLLUSCA

by J G Evans

## CANTILUPE STREET

Individual common snails were seen on several sites in Hereford, but were normally not kept. However, several varieties of mollusca were observed in the build-up layers in front and on top of the 10th century defences at Cantilupe Street and these were sampled.

PERIOD	CONTEXT	SPECIES	QUANTITY
2a	583	<u>Helicella itala</u> (Linné)	6
2a	583	<u>Trichia hispida</u> (Linné)	1
2a	583	<u>Cepaea nemoralis</u> (Linné)	48
2a	583	<u>Helix aspersa</u> Müller	51
2b	582	<u>Cepaea nemoralis</u> (Linné)	3
2b	582	<u>Helix aspersa</u> Müller	5
3b	566	<u>Helicella itala</u> (Linné)	1
3b	566	<u>Cepaea nemoralis</u> (Linné)	61
3b	566	<u>Helix aspersa</u> Müller	172
3b	566	<u>Cepaea hortensis</u> Müller	2
3b	566	<u>Trichia striolata</u> (C. Pfeiffer)	fragment

## DISCUSSION

Helicella itala is an open-ground, xerophile species. It is now more or less confined to chalk downland and sand dune habitats, but was formerly common in arable situations.

Trichia striolata is often found around human habitations, in gardens and hedgerows.

Trichia hispida occurs in a variety of habitats, open and shaded, damp and dry.

Cepaea nemoralis and Cepaea hortensis also occur in a variety of habitats but in general C. hortensis prefers damper habitats than C. nemoralis. Both species are large enough to have been eaten by man in the past although there is no good evidence that this was done.

Helix aspersa is the common snail and is often found around human habitations, in gardens and hedgerows. This species may well have been eaten by man and was sold until recently in, for example, Bristol markets as 'wallfish'.

The species recorded are all terrestrial and occur at Cantilupe Street mainly in the layers associated with the period 2a wall 560, its use and disuse. These layers contain an abundance of mortar from the fabric of the wall and comprise the construction debris and the gradual build-up on the berm in front of the wall as the defences fell into disuse between the late 10th and the mid 13th centuries.

# THE INSECT FAUNA

No special retrieval methods were used during the excavations to obtain samples of the insect fauna. However two samples which were kept for general environmental analysis, were found to contain insect remains, and have been examined.

## BERRINGTON STREET SITE 4

by H K Kenward

Period 6, Pit 651 (cAD 1700-1720)

Insect remains were extracted by paraffin flotation (Kenward, 1974) from about 7kg of the pitfill, weighed after removal of large bones and artefacts. The insects are very poorly preserved, often filmy or fragmented and mostly pale yellow to red, with a gradation from readily identifiable whole sclerites to obscure cuticular fragments. Many sclerites may thus have disappeared entirely, possibly with differential loss of the various species. Counts were therefore abandoned, being very difficult and of doubtful value. The list of recorded species includes subjective estimates of abundance. Without precise counts it is not possible to apply objective interpretative methods to this assemblage (Kenward, 1978) but some tentative conclusions can be drawn as its composition is rather distinctive.

The greater part of the assemblage might be found in an accumulation of decaying organic matter, one group of species (the four Monotoma species, Mycetaea hirta, Typhaea stercorea and Anthicus formicarius) being characteristic of rather dry, mouldy conditions. The ceramic, glass, and animal bone finds

provide abundant evidence that the pit was used for the disposal of kitchen debris, which would hardly contain a community of compost insects when thrown away, so it is very probable that these insects were breeding in the pit, whose fill thus seems to have been well drained and open textured, and probably not sealed immediately after dumping. Some Coleoptera were certainly breeding, for their larval head capsules have been recovered, but these are unfortunately not identifiable.

Several of the species have pronounced subterranean, or at least cryptic, tendencies. Trechus micros lives underground according to Jeanell (1941); in Britain it mainly occurs by running water, where it may be found in crevices and mammal burrows (Lindroth, 1974). It has, however, also been found alive deep in freshly exposed archaeological deposits at York (Kenward, unpublished) and in the Roman sewer system in the same city (Buckland, 1976a). These records suggest that T. micros is quite capable of living away from open water, although the environment was certainly quite damp in both cases.

Rhizophagus parallelocolis is well known for its occurrence in buried corpses (eg Megnin, 1894; the present writer has observed it in large numbers in a buried horse) but it is also found in rotting plant matter (Hansen, 1950). R. perforatus too is associated with rotting matter and sometimes found underground (Hansen, 1950). Like other species in its genus, Anommatus duodecimstriatus is almost certainly primarily subterranean (Vogt, 1967); it is known from buried plant matter (Hansen, 1950; Fowler, 1889-90). It is very interesting to note that these last three species have been found together in rotting bulbs in the ground, that Trichonyx sulcicollis, several of which have been found in this pit, has been found in company with the two Rhizophagus species in a rotting poplar stump (Hansen, 1950) and that T. sulcicollis has been found with R. parallelocolis in burials in Saxony (Reinhart, 1882). The species thus form a

community which is quite likely to occur in buried food remains. Aglenus brunneus also seems well adapted to conditions underground (Kenward, 1975). It, together with T. micros, R. parallelocolis and A. duodecimstriatus, was found in the Roman sewer system at York (Buckland, 1976a). While the bulk of the fauna must have entered the pit while it was open, this group of subterranean beetles may possibly have invaded later and continued to breed after the pit was filled. However, their preservation is much the same as that of the rest of the fauna and they are probably more or less contemporary with it. Such burrowing beetles can be used as evidence of ecological conditions in the present case, but in general must be treated with caution in archaeological interpretation, especially when they occur in small numbers, since they may be intrusive.

Little can be said of the surroundings of the pit as it contains only a few insects incapable of living in its fill at some stage. A few species are associated with outdoor habitats; Clivina fossor and Pterostichus species are common ground beetles (Lindroth, 1974), although the former is a burrowing species, while Phyllotreta nemorum/undulata and Ceutorhynchus contractus feed on cruciferous plants (Fowler, 1889-90, 366). All are common in archaeological assemblages and probably represent strays, either 'background fauna' (Kenward, 1976) or specimens accidentally introduced, for example, with cleanings from vegetables. The pit thus seems to have had a limited exposure to background fauna, being either in a protected situation or not open for more than a few weeks. The rich community of compost beetles militates against its access having been indoors, for these species clearly had ample opportunity to colonise.

The most numerous of the species not associated with compost are domestic pests; spider beetles and wood borers. Anobium punctatum, the 'woodworm', is abundant, suggesting the proximity of structural timber. In urban situations Xestobium rufovillosum,

the 'death watch beetle', is generally found in large timbers, which must have some fungal damage. Tipnus unicolor is especially associated with buildings and outhouses but also known from old wood (Paim, 1959; Fowler, 1890; Hansen, 1950). Although Fowler says that it was not common at the end of the last century it was in fact probably formerly one of the most abundant spider beetles. It was very common in Roman York (Hall et al, 1980) and medieval Hull (eg Ayers et al, 1979), usually occurring with Ptinus fur. O'Farrell and Butler (1948) recorded it as one of the three commonest spider beetles in Northern Ireland, where it seemed to be closely associated with very old, rather damp buildings. It may have become generally less abundant during the past century or so as a result of a limited ability to colonise, the changing nature of buildings and competition from Ptinus tectus, a recent introduction, and Niptus hololeucus, a species which seems to have become abundant only during the late 19th century and which was regarded by Stephens (1839, 433) as a probable introduction. A digression concerning the somewhat problematic N. hololeucus is worthwhile although it is not recorded from the present material. It has been recorded from Roman and medieval deposits in Britain (Buckland, 1976b) and there is a medieval record from Germany (Koch, 1971). The Roman record stands on the basis of material from the sewer system at York (Buckland, 1976a) some of whose fills contained a variety of modern contaminants. Although there is no certain evidence that the deposits containing the Niptus were contaminated, their preservation was suspiciously good and the presence of the species in Roman Britain must remain a little doubtful. Buckland (1976b) has discussed the history of this species, but further evidence is needed before any certain conclusions can be drawn. In particular, it is quite likely that short-lived local populations have resulted from a series of introductions; this is possibly true of many other strongly synanthropic beetles.

The presence of Tipnus unicolor as the predominant spider beetle in this assemblage is interesting in relation to evidence of its increasing importance in late medieval and post-medieval urban faunas, probably brought about by improved house design. X.rufovillosum is a second species whose importance may have increased as buildings became drier and stood longer, although it is susceptible to climatic change (Buckland, 1975).

One particularly interesting record is that of Trichonyx sulcicollis. This is now one of the rarest Pselaphid beetles in Britain, with sporadic records from south of the line joining the Severn and the Wash (Pearce, 1957); there are, however, also records from Hereford, and doubtfully, Carlisle and Yorkshire. It is thus significant that the species should have occurred in archaeological assemblages from Hereford as well as York (Hall et al, 1980), the beetle may still exist in the north, or have become extinct only quite recently. Its habitat is given in British literature as 'in old elm stumps and trunks and under bark' (Pearce, 1957), but the archaeological records, together with some continental observations (Palm, 1959; Hansen, 1950) suggest a wider habitat range.

In the following list of taxa recorded from pit 651, some of the critical identifications were confirmed by Peter J Osborne, University of Birmingham. An estimate of the abundance is given by the codes following the species name; the estimates for the last three categories are very approximate:

1	one individual only
F	few (2-10)
QC	quite common (10-20)
C	common (over 20)

<b>Carabidae</b>	
<u>Clivina</u> ? <u>fossor</u> (L.)	1
<u>Trechus micros</u> (Hbst.)	QC
<u>Pterostichus</u> sp. indet.	1
<b>Hydrophilidae</b>	
<u>Cercyon pygmaeus</u> (Ill.)	F
<u>C. terminatus</u> (Msh.)	QC
<u>C.</u> spp indet. probably including <u>quisquilius</u> (L.) and <u>unipunctatus</u> (L.)	F
<u>Cryptopleurum minutum</u> (F.)	1
<b>Histeridae</b>	
<u>Acritus nigricornis</u> (Hoff.)	1
<u>Hister merdarius</u> (Hoff.)	F
<b>Ptiliidae</b>	
<u>Ptenidium</u> sp. indet.	F
<b>Leiodidae</b>	
<u>Catops</u> sp. indet.	1
<b>Scydmaenidae</b>	
Gen. et sp. indet.	1
<b>Staphylinidae</b>	
<u>Megarthus affinis</u> (Mill.) or <u>sinuaticollis</u> (Bois. & Lac.)	F
<u>Phyllodrepa floralis</u> (Payk.)	1
<u>Omalius</u> sp. cf <u>allardi</u> Fairm. & Bris.	QC
<u>O. rivulare</u> (Payk.)	F
<u>Xylodromus concinnus</u> (Msh.)	F
<u>Coprophilus striatulus</u> (F.)	QC
<u>Carpelimus</u> ? <u>bilineatus</u> (St.)	C
<u>Platystethus arenarius</u> (Fourcr.)	F
<u>Anotylus companatus</u> (Er.)	F
<u>A. rugosus</u> (F.)	F
<u>A.</u> sp. indet.	1
<u>Oxytelus sculptus</u> (Grav.)	F
<u>Lithocharis</u> ? <u>ochracea</u> (Grav.)	F

<u>Leptacinus</u> ?pusillus (St.)	F
<u>Phacophallus parumpunctatus</u> (Gyll.)	F
<u>Philonthus</u> spp. indet. (two at least)	F
<u>Tachinus</u> sp. indet.	1
<u>Aleochara</u> sp. indet.	F
Aleocharinae gen. et spp. indet. (three at least)	QC
<b>Pselaphidae</b>	
<u>Trichonyx sulcicollis</u> (Reich.)	F
<u>Euplectus</u> sp. indet.	1
<b>Trogidae</b>	
<u>Trox scaber</u> (L.)	1
<b>Scarabaeidae</b>	
<u>Aphodius</u> sp. indet.	1
<u>Oxyomus sylvestris</u> (Scop.)	1
<b>Clambidae</b>	
<u>Clambus pubescens</u> (Redt.)	1
<b>Anobiidae</b>	
<u>Xestobium rufovillosum</u> (Deg.)	1
<u>Anobium punctatum</u> (Deg.)	C
<b>Ptinidae</b>	
<u>Tipnus unicolor</u> (Pill. & Mitt.)	QC
<u>Ptinus</u> ?fur (L.)	F
<b>Nitidulidae</b>	
Gen. et sp. indet.	1
<b>Rhizophagidae</b>	
<u>Rhizophagus parallellocollis</u> (Gyll.)	QC
<u>R. perforatus</u> (Er.)	F
<u>Monotoma bicolor</u> (Villa.)	QC
<u>M. brevicollis</u> (Aubé)	F
<u>M. picipes</u> (Hbst.)	F
<u>M. spinicollis</u> (Aubé)	F
<b>Cryptophagidae</b>	
<u>Cryptophagus</u> sp. indet.	QC
<u>Atomaria</u> sp. indet.	F

Cerylonidae	
<u>Anommatus duodecimstriatus</u> (Mull.)	F
Endomychidae	
<u>Mycetaea hirta</u> (Msh.)	QC
Lathridiidae	
<u>Lathridius minutus</u> (L.) group	QC
<u>Dieneralla</u> sp. indet.	F
Corticariinae gen. et sp. indet.	1
Mycetophagidae	
<u>Typhaea stercorea</u> (L.)	QC
Colydiidae	
<u>Aglenus brunneus</u> (Gyll.)	F
Tenebrionidae	
<u>Palorus ratzeburgi</u> (Wiss.) (Possibly contaminant)	1
Anthicidae	
<u>Anthicus formicarius</u> (Gz.)	F
Chrysomelidae	
<u>Phyllotreta</u> sp. cf. <u>nemorum</u> (L.), <u>undulata</u> (Kuts.)	1
Curculionidae	
<u>Ceutorhynchus ?contractus</u> (Msh.)	1
Coleopteran larval head capsules, gen. et spp. indet.	QC
Diptera	
Adults and puparia, gen. et spp. indet.	C
Hymenoptera	
Proctotrupoidea gen. et spp. indet.	F
Dipolopda	
Gen. et sp. indet.	F
Arachnida	
Araneida gen. et spp. indet.	F
Pseudoscorpionida gen. et sp. indet.	F

## CITY ARMS (MINOR SITES)

by Maureen A Girling

### Layer 3, Trench 6 (late 12th to early 13th centuries)

Insects were recovered from the sample by the use of the paraffin flotation method described in Coope and Osborne (1968). Beetles were identified by direct comparison with the reference collections at the British Museum (Natural History).

The largest faunal element, comprising the Hydrophilidae, Histeridae, Staphylinidae and Scarabaeidae, signifies that decaying organic material, probably including dung, provided the most important habitat in the immediate vicinity. Tottenham (1954) notes that dung is an important habitat for the species of Anotylus found in the deposit. Oxyomus sylvestris, the single representative of the family Scarabaeidae, is not, however, tied to dung and is more usually found in decaying vegetation (Joy, 1932). The host plants of the phytophagous species provide an indication of the available vegetation cover. Apion sp., Ceutorhynchus sp. and Chaetocnema concinna live on a variety of low plants, the last often being found on Polygonum. The Scolytidae, however, are tree and shrub feeders. Ash is the host tree of Hylesinus olieperda (Duffy, 1953) and Phloeophthorus rhododactylus lives on broom and gorse. Tanysphyrus lemnae feeds on duckweed, a plant which forms a mat on the surface of ponds or slowly flowing streams.

Although the significance of such a small fauna must be questioned, most of the species would find suitable habitats in a rubbish dump composed of animal and vegetable refuse, perhaps including stall or stable rubbish. The presence of Tanysphyrus lemnae suggests that there may have been stagnant or slowly moving water close by.

The nomenclature in the following list of taxa follows Pope's (1977) revision of Kloet and Hinks and the totals given for each insect are based upon the minimum number of any common skeletal element.

Carabidae		
	<u>Trechus obtusus</u> Er. or <u>quadristriatus</u> (Schr.)	1
Hydrophilidae		
	<u>Sphaeridium</u> sp.	1
	<u>Cercyon unipunctatus</u> (L.)	2
	<u>Cercyon</u> spp.	8
Histeridae		
	Gen. et spp. indet. (larvae)	2
Hydraenidae		
	<u>Ochthebius</u> sp.	2
Staphylinidae		
	<u>Carpelimus</u> or <u>Thinobius</u> spp.	22
	<u>Anotylus rugosus</u> (F.)	2
	<u>A. companatus</u> (Er.)	1
	<u>A. nitidulus</u> (Grav.)	2
	<u>Platystethus arenarius</u> (Geoff. in Four.)	2
	<u>Bledius</u> sp.	2
	<u>Stenus</u> spp.	3
	<u>Xantholinus linearis</u> (Ol.) or <u>longiventris</u> Heer.	2
	<u>Philonthus</u> spp.	4
	<u>Tachinus</u> sp.	1
	<u>Falagria caesa</u> Er.	1
	Aleocharinae indet.	25
Scarabaeidae		
	<u>Oxyomus sylvestris</u> (Scop.)	1
Dryopidae		
	<u>Dryops</u> sp.	1
Ptinidae		
	<u>Tipnus unicolor</u> (Pill. and Mitt.)	2

<b>Cryptophagiadae</b>	
<u>Cryptophagus</u> sp.	1
<b>Lathridiidae</b>	
<u>Corticaria punctulata</u> Marsh.	3
<b>Chrysomelidae</b>	
<u>Chaetoconema concinna</u> (Marsh.)	1
<b>Apionidae</b>	
<u>Apion</u> sp.	4
<b>Curculionidae</b>	
<u>Tanysphyrus lemnae</u> (Payk.)	2
<u>Ceutorhynchus</u> sp.	1
<b>Scolytidae</b>	
<u>Hylesinus olieperda</u> (F.)	1
<u>Phloeophthorus rhododactylus</u> (Marsh.)	1
<b>Diptera</b>	
Gen. et spp. indet.	51
<b>Hymenoptera</b>	
Parasitica indet.	3

## WOOD AND CHARCOAL

Wood is a rare survivor in archaeological features in the well-drained gravels of Hereford. Even quite deep pits are usually sufficiently dry for any wooden objects or traces of linings to disappear. Preservation is better in drainage and defensive ditches where waterlogged conditions exist, but this condition was only found in the trial excavations at the City Arms site.

Charcoal was sampled during the excavations whenever it occurred in quantity or where exceptionally large pieces were found.

### VICTORIA STREET

by J S R Hood

#### Grain drying ovens 89 & 309, Period 1 (mid 7th to 8th centuries)

Samples of charcoal were taken from the lower levels (89E and 309D) in both ovens and are very similar. The fragments are from branches with a diameter of at least 200mm, and small twigs. Identification could not be taken to the species level but the charcoal comes from one of the following: Sorbus sp. (rowan or whitebeam), Malus sp. (apple), Crataegus sp. (hawthorn), Pyrus sp. (pear). In oven 89 charcoal from oak (Quercus sp.) was also present. It came from a large tree probably greater than 0.5m diameter. The growth rings were 1-2mm wide.

Clay and turf rampart, Period 5a (late 9th or early 10th century)

Wood was used as reinforcement within the turf and clay rampart and a burnt post was found close to the tail.

60 - Laterally placed within the tail of the rampart. The sample consists of many fragments of hazel (Corylus avellana L) twigs and small branches.

79a East-west within the tail of the rampart. The state of preservation of the charcoal is too poor for positive identification but it possible comes from oak twigs and branches.

96 - A burnt timber in a posthole at the rear of the rampart. It could have been associated with the period 5a rampart but it may have belonged to the period 2 timber building. The sample consists of many fragments of oak. Some of the fragments have a diameter of at least 250mm and the growth rings were between 0.5 and 2.0mm wide, suggesting that the charcoal came from a large, slow-growing tree.

BERRINGTON STREET

by J S R Hood

Period 1 features, Site 2 (late 8th to 9th centuries)

Fragments of charcoal were found in two gullies associated with building B. Gully 202 contained three fragments of oak (Quercus sp.) from a mature tree. The growth rings were close together and a radius was not measurable. One fragment of

charcoal from a branch of small stem of ash (Fraxinus sp.) was also present. In gully 230 further fragments of oak, with very close growth rings, probably came from a mature or slow-growing tree. The fragments had about ten growth rings per centimetre. Charcoal fragments were also found in the small pit F266 to the north of building B. The sample was mainly oak from mature timbers with some ash twigs about 10mm in diameter. Charcoal used as a sample for radiocarbon dating (HAR 1375) from the burnt layer F270 consisted of twigs or very small branches possibly of ash.

Pit 358, Site 2, Period 2a (10th century)

Fragments of beech (Fagus sylvatica L.) charcoal from small twigs of 5-10 years growth were found in a small pit at the north-west corner of site 2.

Cooking pit, 103, Site 2, Period 3 (late 12th to early 13th century)

Small fragments of oak charcoal and oak bark were present in this small pit which, it is suggested, was used for cooking (Vol 2, M2.D14 and E2).

Cooking pit 502, Site 3, Period 4 (late 13th century)

Three fragments of charcoal from the branches of a hazel (Corylus avellana L.) tree were found together with two fragments from twigs of beech in the fill of pit 502. The pit also contained several fragments of oak charcoal. Seven fragments were from a large branch or tree bole and three fragments from smaller branches, probably from the same slow-growing tree. Two fragments with wider growth rings may have come from twigs of a second tree. This pit may also have been used for cooking and had a similar fill to the period 3 pit 103.

Flue 504, Site 3, Period 5 (14th to 15th centuries)

A sample of clay and charcoal, 505, associated with flue 504 contained three fragments of oak and one of ash.

Pit 730, Site 4, Period 6 (16th century)

Several samples were taken from the fill of the large pit 730 close to the line of Berrington Street. Included amongst the waste material in the pit were numerous pieces of charcoal and some wood ash. The charcoal, which was of oak, ash, willow (Salix sp.), and alder (Alnus sp.), came mainly from branches or small stems.

CITY ARMS - MINOR SITES

by C A Keepax

Samples of the organic remains found in the fill of the Saxon ditch on this site were examined. Some, which were thought to be timbers, were in fact compressed organic material resembling straw or grass, but others were of wood. The samples were all probably of 12th century date.

Trench 7 - The vertical timber H was a piece of oak (Quercus sp). The remains of a stake in fence C comprised only thin fragments of bark which could not be identified.

Trench 9 - Traces of timbers in this trench were not planned but samples were taken. They included oak from a fairly large timber and aspen (Populus sp) or possibly willow (Salix sp), from a timber measured in situ at about 110mm in diameter.

## SEEDS, GRASSES AND GRAIN

Charred and burnt grain was found on several sites in Hereford but apart from such chance preservation, seeds were only occasionally found in the lower parts of damp pit fills. Retrieval varied from excavation to excavation but normally samples were kept if seeds were seen or thought to be present. Several such organic samples were found to consist of grass or straw.

### VICTORIA STREET

Period 1, Oven 89 (Layer 89e) (mid 7th to 8th centuries)

by J S R Hood

The sample which was mainly charred grain also included charcoal, wood ash, and lightly baked clay. The charred grain present was:

SPECIES		NUMBER OF SEEDS, ETC
<u>Triticum aestivum</u> L. or <u>Triticum compactum</u> (Host.)	Bread or club wheat	43 grains
<u>Hordeum vulgare</u> L.	Barley	60 grains
<u>Avena</u> sp.	Oats	2 grains

Average length of the wheat  $3.9\text{mm} \pm 0.5\text{mm}$ .

Although it is not possible completely to distinguish between the club and bread wheats, the sample was more likely to comprise club wheat. The grain in oven 89 was fairly badly charred but had not been completely burnt and could have been introduced to the ashes after the oven cooled down.

Period 1, Layer 360 (mid 7th to 8th century)

by J R B Arthur

A quantity of charred grain was found in layer 360, which is interpreted as the remains of the period 1 ground level. On the basis of 500 grains counted the sample contained:

SPECIES		PROPORTION
<u>Triticum turgidum</u> L.	Wheat	48%
<u>Hordeum vulgare</u> L.	Barley	28%
<u>Avena</u> spp.	Oats	24%

The average sizes of grain are:

SPECIES	LENGTH	BREADTH
Wheat	4.5mm	3.0mm
Barley	6.2mm	3.5mm
Oats	5.3mm	2.0mm

It is not likely that this deposit represented a mixed cereal crop, but rather the residue of the remains of drying from several separate grain crops during harvest.

This suggestion is perhaps reinforced by the different proportions of wheat, barley and oats in the two samples described above, as these proportions are likely to vary substantially across the site dependent on the particular provenance of the waste material from any individual drying.

BERRINGTON STREET

Site 3, Period 1, Layer 111 (late 8th to 9th centuries)

by J S R Hood

Charred grain which was found in the burnt layer 111 consisted of:

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SPECIES		NUMBER OF SEEDS, ETC
<u>Triticum aestivum</u> L. or <u>Triticum compactum</u> (Host.)	Bread or club wheat	3 grains
<u>Hordeum vulgare</u> L.	Barley	16 grains

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No conclusions may be made from this small sample.

Site 4, Period 2c, Layer 734 (late 11th to early 12th century)

by D Williams

The sample, which was approximately 1kg in weight, was composed of 90% wheat grains with only a few weed seeds or other contaminants present. As the sample was relatively small it proved practical to make a full count of the seeds except for the wheat where the total was calculated from a 100 grain weight of 1.2gm and a total grain weight of 37.5gm. The cereal grains were generally in good condition, although the majority showed slight signs of germination. This was also apparent in other seeds, especially the Bromus species.

SPECIES		NUMBER OF SEEDS*, ETC
<u>Triticum</u> sp. (cf <u>T. aestivum</u> <u>aestivo-compactum</u> Schlem)*	(Club or bread wheat)	3000 approx
<u>Bromus</u> sp. (cf <u>B. secalinus</u> L. or <u>B. mollis</u> L.)	(Rye-brome or chess)	. 165
<u>Avena</u> sp. (cf <u>A. sativa</u> L. or <u>A. strigosa</u> Schreb.)	(Oats)	12
<u>Secale cereale</u> L.	Rye	1
Gramineae indet.		3
<u>Anthemis cotula</u> L.	Stinking mayweed	3
<u>Anthriscus/Torilis</u> type		1
<u>Carex</u> sp.	Sedges	1
<u>Lapsana communis</u> L.	Nipplewort	1
<u>Plantago lanceolata</u> L.	Ribwort	1
<u>Ranunculus</u> sp. (cf <u>R. acris</u> L. or <u>R. repens</u> L.)	(Meadow or creeping buttercup)	2
<u>Rumex acetosella</u> L.	Sheep's sorrel	1
<u>Sambucus nigra</u> L.**	Elder	1
<u>Vicia hirsuta</u> (L.) S. F. Gray	Hairy vetch	5
<u>Vicia</u> sp. (cf <u>V. sativa</u> L.)	(Common vetch)	3
<u>Vicia tetrasperma</u> (L.) Schreb.	Smooth tare	36
<u>Vicia</u> spp.		101

\* Larger fragments counted as whole seeds.

\*\* Only uncharred seed in sample and probably a contaminant.

The wheat grains were predominantly of a short, plump appearance with steeply placed embryos; forms that are typical of the naked hexaploid wheats, such as bread wheat (Triticum aestivum L.) and club wheat (Triticum aestivum aestivo-compactum Schiem.). Both these species are very closely related but the grain of club wheat is usually shorter in relation to its breadth than bread wheat. A hundred well-preserved grains were measured using a calibrated ocular microscope (Van Zeist, 1970, 48). The dimensions of the Caryopses were as follows:

	LENGTH	BREADTH	THICKNESS	LB INDEX	TB INDEX
MINIMUM	3.81	2.44	1.88	125.6	66.7
MEAN	4.69	3.11	2.42	150.2	77.8
MAXIMUM	5.69	3.81	3.19	200	109.5

(LB - Length to breadth ratio  
TB - Thickness to breadth ratio).

An LB index or 155 or less, as in this sample, suggests the presence of club wheat. This criterion cannot be considered as conclusive evidence and does not eliminate the possibility of the presence of bread wheat, especially since the two species freely interbreed. Positive identification of one or other would require fragments of the spikelet. These are rarely found in archaeological samples because they tend to be released during threshing. The naked hexaploid wheats were probably present in prehistoric times but only became important as crops in the early historic period.

Well preserved grass caryopses of either Bromus mollis L. or Bromus secalinus L. were fairly common. Both species are characteristic weeds of cereal crops. The specific identification of the oats was not possible, but they were probably either Avena sativa or Avena strigosa. One typically asymmetric grain of rye (Secale cereale L.) was also recovered. This, and the oats, probably represent a weed component of the crop.

There is considerable variation in the shape and dimensions of vetch seeds, rendering identification difficult, a factor which is further complicated by the swelling which occurs during carbonization. The majority of the legume seeds could only be identified to the generic level (Kenward and Williams, 1979). The most common species was smooth tare (Vicia tetrasperma (L.) Schreb.), but a few laterally compressed seeds are tentatively identified as hairy vetch (V. hirsuta L.), and the occasional seeds which are slightly larger and of more cubic shape, are tentatively identified as those of the common vetch. All the vetch seeds were derived from weeds growing in the cereal crop.

The grain had been thoroughly cleaned prior to its destruction as evidenced by the complete absence of spikelet parts, and the presence of only small weed seeds and a few grass caryopses similar in shape and size to the grain. Both of these are very difficult to eliminate even with modern seed cleaning apparatus. One can only speculate as to the reason for the destruction of the grain. It is possible, as indicated by the germinated grain, that this was discarded material that had deteriorated in storage. However, the grain showed signs of only 2-3 days growth, and a study of ancient charred cereals has shown that germination is very common (Kenward

and Williams, 1979), reflecting difficulties with storage, and it is unlikely that a valuable food source would have been discarded for this reason alone.

Site 2, Period 3, Pit 103 (late 12th to early 13th century)

by J S R Hood

A sample of the lining material of this small pit contained numerous charcoal fragments, inorganic material and the following charred seeds:

SPECIES		NUMBER OF SEEDS, ETC
<u>Triticum compactum</u> (Host.) or <u>Triticum aestivum</u> L.	Club or bread wheat	1 grain
<u>Hordeum vulgare</u> L.	Barley	2 grains
<u>Prunus spinosa</u> L.	Sloe	2 seeds

Other samples from the same pit contained a large quantity of grass and straw held together by a calcium carbonate accretion.

Site 3, Period 4, Pit 502 (late 13th century)

by J S R Hood

This pit was similar to 103 (vide supra) and contained, amongst the charcoal and inorganic material, one undeveloped head of club or bread wheat (Triticum compactum (Host.) or Triticum aestivum L.). The sample also contained fragments of calcified straw.

Site 4, Period 6, Pit 730 (mid 16th century)

by J S R Hood

The mixed waste in this pit included charcoal and laminated plant material with occasional small stones and some soil. Dendritic phytoliths suggest that the sample was partly decomposed grass, perhaps with some straw. Species identification of the grass could not be made.

Site 4, Period 6, Pit 651 (cAD 1700-1720)

by D Williams

The material was remarkably rich in the remains of seeds of various cultivated fruits. The majority are small, of a kind that could easily have been swallowed, and the material could have been derived from human faeces. The sample was notably pure and free from the seeds of weed and ruderal species common in urban archaeological deposits. This suggests a rapid deposition and sealing although it may be accounted for by the lack of source material around the pit. The few weed seeds recovered are probably no more than fortuitous inclusions, although some, such as the cut-leaved cranesbill (Geranium dissectum), could be derived from the deposition of cereal waste. Preservation was generally poor and no grain fragments were noticed.

SPECIES		NUMBER OF SEEDS, ETC
<u>Boraginaceae</u> type	-	1
<u>Carex</u> spp.	Sedges	45
<u>Chenopodium</u> sp.	-	1
<u>Coriandrum sativum</u> L.	Coriander	3 fragments
<u>Ficus carica</u> L.	Fig	270
<u>Fragaria</u> sp. (cf <u>F. vesca</u> L.)	(Strawberry)	c4000
<u>Geranium</u> sp. (cf <u>G. dissectum</u> L.)	(Cut-leaved cranesbill)	45
<u>Hyoscyamus niger</u> L.	Henbane	2
Leguminosae type	-	2 fragments
<u>Malus sylvestris</u> Mill.	Apple	3
<u>Morus nigra</u> L.	Mulberry	21
<u>Prunus</u> sp.	Cherry	3 fragments
<u>Rubus fruticosus</u> agg.	Blackberry	c1300
<u>Rubus idaeus</u> L.	Raspberry	c1500
<u>Rubus</u> spp.	-	345
<u>Ranunculus</u> sp. (cf <u>R. acris</u> L. or <u>R. repens</u> L.)	(Meadow or creeping buttercup)	6
<u>Ribes</u> sp. (cf <u>R. uva-crispa</u> L.)	(Gooseberry)	60
<u>Sambucus nigra</u> L.	Elder	10
<u>Stellaria</u> sp.	-	1
<u>Viola</u> sp.	Violet	2
<u>Vitis vinifera</u> L.	Grape	136

The more common seeds are of species indigenous to this country and could represent, as in the case of blackberry (Rubus fruticosus), fruit collected in the wild, while others such as the strawberry (Fragaria vesca) or raspberry (Rubus idaeus) were probably deliberately cultivated. Grigson (1958) suggests that wild strawberries were transplanted from woodlands and tended in gardens and in view of the present-day importance of Herefordshire as a fruit growing district, there is every reason to assume that the majority were locally cultivated, particularly the apple (Malus sylvestris), gooseberry (Ribes uva-crispa) and cherry (Prunus species). One cannot be so certain about the origin of the more exotic species, but there is likely evidence for British cultivation of these fruits from the medieval period onwards. Vineyards were similarly quite common in this country (Lamb, 1965), and there are references in Herefordshire as early as the 13th century (Jenkins, 1937). The mulberry (Morus nigra) is not suited for long distance transport and was probably grown locally. The fig (Ficus carica) may well have been imported. The sample provides some evidence of the variety of fruits in an early 18th century diet found at this town site in Hereford.

BEWELL HOUSE

Period 4, Layer 360 (mid 13th century)

by J S R Hood

This sample, from layer 360 in furnace 304, contained burnt pea gravel, wood ash and charred grain, some of which was too badly burnt for identification but which included:

SPECIES		NUMBER OF SEEDS, ETC
<u>Hordeum vulgare</u> L.	Barley	6 grains
<u>Avena</u> sp.	Oat	5 grains
<u>Triticum compactum</u> (Host.) or <u>T. aestivum</u> L.	Club or bread wheat	2 grains

CITY ARMS (MINOR SITE)

Trench 6, Layer 3 (late 12th to early 13th century)

by J R B Arthur and P J Paradine

SPECIES		NUMBER OF SEEDS, ETC
<u>Triticum</u> sp.	Wheat	1 grain
<u>Ranunculus acris</u> L.	Meadow buttercup	8 achenes
<u>R.</u> sp.		4 achenes (too eroded for identification)
<u>Papaver rhoeas</u> L.	Field poppy	31 seeds
<u>P. argemone</u> L.	Long prickly- headed poppy	21 seeds
<u>Agrostemma githago</u> L.	Corn cockle	2 seeds

cont

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SPECIES		NUMBER OF SEEDS, ETC
<u>Steallaria media</u> (L.) Mill.	Chickweed	1 seed
<u>S. graminea</u> L.	Lesser stitchwort	4 seeds
<u>Chenopodium album</u> L.	Fat hen	12 seeds
<u>Polygonum aviculare</u> L.	Redshank	5 achenes
<u>P. hydropiper</u> L.	Water-pepper	9 achenes
<u>Rumex conglomeratus</u> Murr.	Sharp dock	9 achenes - 2 fruits
<u>R. crispus</u> L.	Curled dock	1 achene
<u>Euphorbia exigua</u> L.	Dwarf spurge	15 seeds
<u>Urtica dioica</u> L.	Stinging nettle	5 achenes
<u>Sambucus nigra</u> L.	Elderberry	1 seed
<u>Epilobium</u> sp.	Willow herb	1 seed
<u>Rubus</u> sp.		4 achenes
<u>Aphanes arvensis</u> L.	Parsley piert	5 achenes
<u>Potentilla sterilis</u> (L.) Garcke.	Barren strawberry	1 achene
<u>Malva neglecta</u> Wallr.	Dwarf mallow	1 seed
<u>Galeopsis tetrahit</u> L.	Hemp nettle	3 nutlets
<u>Prunella vulgaris</u> L.	Self heal	2 nutlets
<u>Lycopus europaeus</u> L.	Gipsywort	1 nutlet
<u>Lamiaceae</u> family		2 unidentifiable nutlets
<u>Betonica officinalis</u> L.	Betony	1 nutlet
<u>Anthemis cotula</u> L.	Stinking mayweed	126 achenes
<u>A. arvensis</u> L.	Corn chamomile	9 achenes
<u>Lapsana communis</u> L.	Nipplewort	4 achenes
<u>Leontodon hispidus</u> L.	Hawkbit	3 achenes
<u>Juncus</u> sp.	Rush	9 seeds
<u>Carex flacca</u> Schreb.	Glaucous heath sedge	3 achenes
<u>C. divulsa</u> Stokes	Grey sedge	3 achenes
<u>C. sylvatica</u> Huds.	Wood sedge	3 achenes

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The assortment of plants represented in the sample suggests a typical collection from cultivated ground. The largest proportion, allowing for the number of seeds one could anticipate per plant (as for example, an established Urtica dioica plant could easily produce over 3000 achenes), are typical of plants found in fields: the Papaver spp.; Chenopodium album; Euphorbia exigua; Aphanes arvensis (not setting many mature fruits per plant) and in particular the Anthemis cotula, still a persistent and troublesome weed today. Plants such as Malva neglecta, the Juncus sp. (which was most probably J. bufonius the toad rush) and Galeopsis are commonly found on headlands or paths.

The possibility of a hedgerow with an accompanying ditch would be quite feasible - Hycopus europaeus and Polygonum hydropiper really require a damp ditch or shallow pond margin, but taking into account the Carex spp.; Prunella vulgaris and Potentilla sterilis, a hedgerow is indicated. The small number of Compositae achenes and the Epilobium sp. would indicate wind dispersal from an adjacent site.

The inclusion of only one or two seeds of Rubus, Sambucus and the odd grain of Triticum could, I suggest, be the result of either bird or animal transference, they are too few in number to be considered of having any significance. Had any of these been growing in the immediate vicinity, the numbers would, I am sure, have been greatly increased, which is why I think they should not be taken into account when thinking in an ecological manner.

The overall picture, from the seeds received in the sample, certainly indicate cultivated - or, at the very least, disturbed ground. If the seeds found are a true indication of the site, then the balance would swing to cultivated ground, otherwise one would expect to find far more colonists

such as Uritca and Rumex, but these two in particular seem to be only incidental and would not have created any particular problems; the poppies would certainly have done well on an open field under cultivation, and it is doubtful that such an establishment would have occurred off the field.

Somewhere, not too far away, there must have been some kind of hedgerow - coppice edge or suchlike and water held sufficiently by the soil for a long enough time for the moisture loving Lycopus to flower and produce nutlets.

# INORGANIC SAMPLES

## GENERAL

BERRINGTON STREET

by J S R Hood

### Site 4, Period 1, Hearth 908 (late 8th to 9th century)

Samples of the material from this hearth contained some wood ash and finely powdered calcium carbonate with some small quartz grains. The sample is possibly powdered lime or ground tufa.

### Site 2, Period 1, Layer 111 (late 8th to 9th century)

Several samples from the burnt areas, collectively layer 111 and a similar material from above the gully F202, were examined. The earliest, slightly within the underlying soil level, L113, contained lime and sand grains plus limestone fragments and was probably mortar or coarse plaster. The mixed fill of gully F202 included, as well as charcoal, a sample of very fine lime with fragments of horse hair. There were very few non-calcerious inclusions and it is likely that this was a fairly good quality plaster. A second sample from the same gully contained puddled baked clay with powdered clay, quartz grains and small fragments of lime, all of which could have come from a fire or hearth.

### Site 3, Period 1, Posthole 540 (late 8th to 9th century)

This posthole contained finely divided calcium carbonate probably originally plaster rather than tufa, as there were no inclusions in the sample.

Site 2, Period 3, Pit 103 (late 12th to early 13th century)

The sample included grass and straw in a calcium carbonate accretion and small fragments (less than 30mm) of baked and unbaked limestone as well as charcoal and grain.

Site 3, Period 4, Pit 502 (late 13th century)

The sample included calcified straw and calcium carbonate fragments as well as charcoal and grain.

# METALWORKING RESIDUES

by L Biek and R F Tylecote

## INTRODUCTION

Altogether some 150kg of metalworking residue from all the excavated sites was examined visually, classified by reference to type specimens and weighed in contexts. Selected specimens were metallographically, and, in a few cases, chemically, analysed. The great majority of the material comprised ironworking slags but there were also copper alloy casting slags, fragments of moulds for casting probably both bells and cauldrons (M7.F7-F9), as well as a few fragments of high-tin bronze waste including a possible cauldron foot, and two complete small moulds (M5.A14-B2).

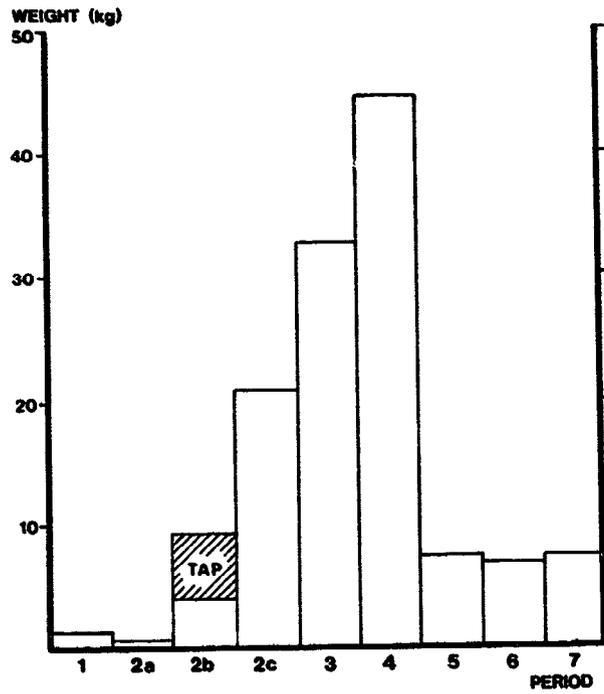
The relevant structures and features which may be associated with metalworking are described in detail in the excavation reports (Vol 2). Although there was little direct evidence for actual working sites, there is a strong indication of iron smithing in the vicinity of the Berrington Street sites, particularly during periods 2b, 2c, 3, and 4 (early 11th to late 13th century). Pits associated with a working area (759) during period 5 (14th to 15th century) on Berrington Street site 4 were apparently related to the manufacture of cauldrons just outside the excavated area.

The Brewery site contained the remains of two furnaces, 67 and 169, both of period 2b (12th century), which may have been associated with bell casting. At a later date on the same site several unfired clay rings, collectively feature 92 of period 4b (14th century) could represent moulding sites for a similar process.

## FERROUS METALLURGY

Most sites produced at least a few pieces of ironworking slag and all the fragments from the smaller groups and about half the material from the large concentrations at Berrington Street were examined visually. Specimens of hearth lining, forging slag of varying density, metallic waste, hammerscale and vegetable ash slag, containing more or less iron, were distinguished but were all grouped and weighed together as 'smithing residues' for each separate context (Fig 94:M9.E5). Small quantities of smelting (tap) slag were also found scattered over all the sites and were recorded and weighed separately where significant.

There was no evidence during the excavations at the Berrington Street sites of features which could be linked with any activities which produced these residues. In particular there was no furnace lining or other sign of smelting. Only one significant concentration of true tap slag was recognised from site 4, context 801, period 2b (early to mid 11th century), although, as is commonly found on medieval sites, many groups of smithing waste included the odd piece of tap slag. It is not possible, as yet, to distinguish in all cases between smelting and smithing slags. Although shape and associated material usually provide adequate criteria, there is a dense form of fayalite-rich material which is very similar to massive smelting slag, yet must, on other evidence, be taken to have been derived from smithing. Some of this dense material, found at Berrington Street, was assumed to be smithing residue. However the movement of true tap slag, and indeed other types of residue, which would have been suitable for metalling or hard core, has not been studied enough to permit any definite comment on its presence in a given place. It is quite possible that such broken-up 'tap slag gravel', as



**Fig 94** Period distribution of iron-working slags at Berrington Street

occurred in context 801, could have been brought from the Forest of Dean. There are several parts of site 4 where, particularly during period 2c (late 11th to early 12th century), smithing slag had been used for metalling and floor make-up. This was especially noticeable in layer 792, the make-up for floor 735 of building 'O', where 7.57kg was found and in layer 796, the make-up for floor 774 of building 'R', where 3.8kg was found. The metallised surfaces close to these floors also contained smithing slag; 737 contained 2.57kg and 773 contained 2.08kg. Other parts of site 4 during both periods 2b and 2c contained lesser amounts.

It is clear that most of the smithing waste was buried in pits to get it out of the way, especially during periods 3 and 4 (late 12th to late 13th century). In period 3, pit 744 contained 6.45kg and pit 850 contained 11.45kg and during period 4, pit 772 contained 8.82kg and pit 790 contained 6.01kg. Other pits contained lesser quantities and the thick soil layer 817, possibly associated with the period 4 clay floor 789, contained 6.71kg of smithing waste.

Overall, on Berrington Street site 4, there was less than 10% by weight of tap slag, of which nearly half came from the single dump mentioned. Normally smelting produces a vastly greater quantity of slag as compared with smithing so this small quantity can be ignored in the general site context. It is likely that the smithing residue is of local origin and it is interesting to note that about three-quarters of the slag in periods 2b and 2c was used in metalling and floor make-up. These periods had obviously encompassed a phase in the occupation of site 4 when floor levels were being renewed and where presumably freshly available slag played a significant part.

A remarkable and unusual collection of smithing hearth bottoms was found in pit 850 of period 3 (late 12th century). Three complete bottoms and substantial fragments of five more were found, together with numerous smaller fragments of similar origin. Their dimensions and shape are given below.

NUMBER	MAXIMUM DIAMETER (mm)	MAXIMUM DEPTH (mm)	OVERALL SHAPE
1	150	120	sub-conical
2	135	120	sub-conical
3	140	105	sub-conical
4*	150	30	bowl
5*	130	35	bowl
6*	120	70	cup
7**	130	50	cup
8**	125	40	cup

(\*incomplete; \*\* fragmentary)

One example is illustrated (Fig 95:M9.E8). In normal small scale working it is usual to find bun-shaped bottoms some 100mm in diameter and 30mm deep. Although massive residues are known, such as one measuring 600mm by 200mm deep from a Roman context at Magiovinium (Biek, forthcoming), the present finds are characterised by being relatively large for the sort of smallish scale working which is indicated, and also by being exceptionally deep for their diameter in some cases. In one of the bottoms the main volume is almost conical in shape, 'resting' on a bar-shaped 'foot' and this is also more or less clearly suggested in some of the others. By comparison with similar material from other sites this would seem to be a

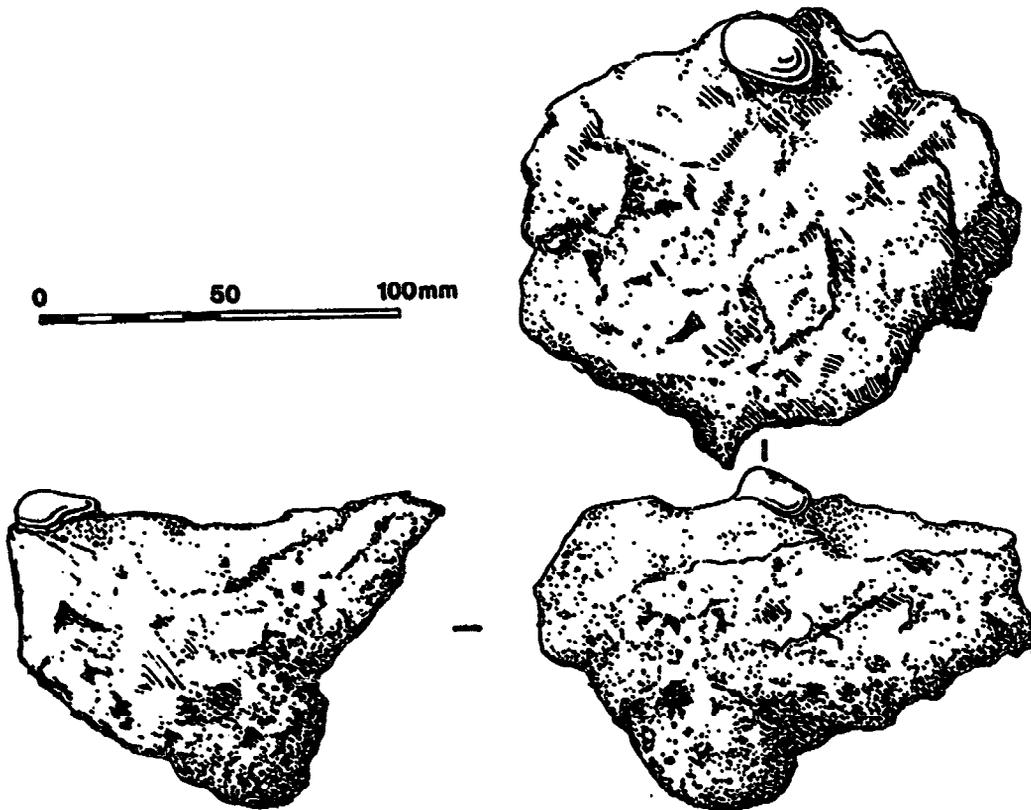


Fig 95     Smithing hearth bottom from Berrington Street

preferred shape for medieval hearths, the slender base presumably allowing rapid solidification and anchoring of the newly formed slag pool. To judge from an examination of the macrostructure in section, there is some evidence of prolonged working with fair-sized slag pools which have had time to homogenize and cool relatively slowly.

Although the total quantity of slag found in periods 3 and 4 might seem to be relatively small, and the pits in which it was found had clearly been dug for other purposes, the concentration in these periods on site 4 is nevertheless possibly of greater significance than might at first appear. In complete contrast to smelting residues, which comprise over five times the weight of iron produced, smithing slags represent only a minute proportion by weight of the finished ironwork. It is difficult to assess this proportion, because variability in bloom and working conditions introduces too great a degree of uncertainty, but it would probably be of the order of 1%. On this basis, the slag found in the deposits of periods 3 and 4 indicates some 7,000kg (6.9 tons) of iron artifacts, and the total slag from site 4 represents some 13,000kg (12.8 tons). The concentration, distribution, and location of the slag in periods 3 and 4 suggests that it was being produced at a greater rate than it could be utilised in make-up and metalling, as had been the case during periods 2b and 2c, and it thus had to be disposed of elsewhere. This raises the question of the amount of slag that had been so utilized elsewhere which would increase the amount of ironwork by the same proportion.

The amount of ironworking residue from the later periods in Berrington Street is probably residual and that from the other sites in the city is negligible and of doubtful significance. No iron artifacts from Berrington Street periods 2, 3, or 4 were recovered in a sound enough condition to warrant metallographic examination so the evaluation of smithing skills was thus unfortunately impossible.

## NON-FERROUS METALLURGY

Several features have been mentioned which are likely to have been connected with techniques used in bell and cauldron manufacture (Vol 2, 100-01). Associated with them were various forms of mould fragments (M7.F7-F9), copper-bearing slags and metal residues.

The most characteristic material came from pits 760 and 762 and the associated working area 759 in the north-western corner of Berrington Street site 4. These period 5 features, dated to the 14th or 15th centuries, were presumably the extremities of an industrial complex stretching to the north and west of the excavated area. The mould material suggests that the complex consisted of bronze melting hearths linked to a foundry casting cauldrons. Apart from typical bronze melting slags the residues included some metallic dross and a piece of corroded metal (unillustrated) which may have been a cauldron foot. Judging by the colour and hardness (118 HV) this would seem to be a high tin bronze containing about 12% tin. During metallographic examination it darkened unusually rapidly in acidified ferric chloric which suggested some impurity such as lead or zinc; iron, which confers strong ferro-magnetic properties on bronzes above about 1%, was ruled out since the fragment was non-magnetic. Microprobe examination carried out at the International Tin Research Institute by Peter Kay and Linda Jones clearly showed that the main factor could indeed be lead, although there were also some minor zinc-rich areas (Fig 96). The whole picture is entirely consistent with cauldron metal.

The other evidence of significance comes from the Brewery site. The remains of two furnaces, 67 and 169, were found, both of which were assigned to period 2b and dated to the 12th century. They are described in volume 2, p 63. Mould fragments which were found associated with furnace 169 (M7.F7-F9) are typical of the material and practice described around AD1100 by Theophilus (Smith, 1967) and found in this country consistently associated with bell casting. The method involved two separate and different heating processes - a moderate 'baking' fire ( $\underline{c}$  500°C) for the mould, and a high-temperature crucible hearth ( $\underline{c}$  1000°C) for melting the bell metal. Furnace 169 apparently shows the remains of a 'mould ring' over the drying channel, and the presence of mould debris but absence of slag tends to confirm this, although the lack of slag may be due to more efficient clearance since the similarly designed but poorer preserved furnace 67 was apparently abandoned full of slag. Such slag would come from the crucible hearth, very close to and possibly above the furnace stoke-hole.

There was further evidence for the manufacture of moulds and for casting bells on the same site during period 4b (14th century). Fragments of several clay rings, collectively feature 92, were found in association with several mould fragments, some slag and three unillustrated pieces of metal. A micro-examination of these metal objects, all from context 200, helps to confirm the use of this area:

- 1 A round bar, yellow in colour and non-magnetic. It is a high tin bronze which borders upon bell-metal having about equal amounts of alpha and delta eutectoid structure and a hardness of 138HV suggesting a tin content of 14.5%. The metal is in a cast, cored, dendritic state.

2 This is a very silvery piece of metal surrounded by a heavy corrosion product. Upon examination it gave an excellent structure in the unetched state and is a typical piece of bell-metal showing the alpha (dark) and the delta (light) eutectoid structure (Fig 97), with a hardness of 200HV which probably reflects the corroded state. This is equivalent to a tin content of 19%.

3 This was another piece of bell-metal with a similar structure to no 2 after etching. The hardness was 290HV indicating a tin content of 23%.

The presence of debris associated with bell casting in both periods 2b and 4b at the Brewery site implies a continuity of production from the 12th to the 14th century in this area of Hereford, perhaps temporarily suspended or restricted in area after the construction of the city defences on part of the site late in the 12th century.

# BIBLIOGRAPHY

- Addyman, P V, Hood, J S R, Kenward, H K, MacGregor, A and Williams, D, 1976 Paleoclimate in urban environmental archaeology at York, England: problems and potential, World Archaeol, 8, 220-33
- Addyman, P V, and Priestley, J, 1977 Baile Hill, York, Archaeol J, 134, 115-56
- Alvey, R C, 1973 A cesspit excavation at 26-28 High Pavement Nottingham, Trans Thoroton Soc Nottinghamshire, 77, 53-72
- Archibald, M.M, 1973 Paper on the Lincoln Hoard given to the British Numismatic Society, 23 Oct 1973
- Aspinall, A, 1977 Neutron activation analysis of medieval ceramics, Medieval Ceramics, 1, 5-16
- Atkinson, D R, 1975 Tobacco pipes of Broseley, Shropshire
- Ayers, B, 1979 Excavations at Chapel Lane, Staith (Hull), 1979, E Riding Archaeol, 5, 97pp
- Barker, P A, 1979 The medieval pottery of Shropshire, from the conquest to 1400, Shropshire Archaeol Soc Occas Ser
- Barton, K J, 1963 A medieval pottery kiln at Ham Green, Bristol, Trans Bristol Gloucestershire Archaeol Soc, 82, 95-126

- Barton, K J, 1966      An early post-medieval group from  
Nardix Court, City of Worcester, Post-medieval ceramics  
research group Broadsheet, 3, 18-21
- , 1967      Note on the distribution of Ham Green  
Pottery, Trans Bristol Gloucestershire Archaeol Soc, 86,  
201-2
- , 1969      The contents of an 18th century well at  
Bishops Waltham, Post Medieval Archaeol, 3,  
166-87
- Barton, K J, and Holden, E W, 1977      Excavations at Bramber  
Castle, Sussex, 1966-7, Archaeol J, 134, 11-79
- Bayley, J, 1979      The glassworking residues in C M Heighway.  
A P Garrod and A G Vince, Excavations at 1 Westgate Street,  
Gloucester, 1975, Med Arch, 23, 159-213
- , 1982      Non-ferrous metal and glass working in Anglo-  
Scandinavian England: an interim statement, PACT, 7  
487-96
- Beresford, G, 1975      The medieval clay-land village:  
excavations at Goltho and Barton Blount, Soc Medieval  
Archaeol Monograph, 6
- , 1977      Excavations of a moated house at Wintringham  
in Huntingdonshire, Archaeol J, 134, 194-286
- Biddle, M, 1964      Excavations at Winchester 1964, 3rd interim  
Report, Antig J, 45, 230-64
- BMQ, 1937      Brit Mus Quarterly, 11

- Bond, C J, and Hunt, A M, 1977      Recent archaeological work in Pershore, Vale Evesham Hist Soc Res Pap, 6
- Boon, G C, 1973      Welsh tokens of the 17th century
- Bridgewater, N P, 1963      Glasshouse Farm, St Weonards - A small glassworking site, Trans Woolhope Natur Fld Club, 37, 300-15
- , 1970      The medieval homestead of Wallingstones, Trans Woolhope Natur Fld Club, 40, 75-116
- Buckland, P C, 1975      Synanthropy and the death-watch, a discussion, The Naturalist, April/June 1975
- , 1976a      The environmental evidence from the Church Street Roman sewer system, The Archaeology of York, 14/1
- , 1976b      Niptus hololeucus (Fald) (Col. Ptinidae) from Roman deposits in York, Entomologists' Monthly Mag, 111, 233-4
- Bull, H G, 1882      Credenhill Camp - Magna Castra - and the Roman stations and towns in Herefordshire, Trans Woolhope Natur Fld Club, 10, 236-60
- Butler, L A S, 1960      Excavations at Blackfriars, Hereford, 1957, Trans Woolhope Natur Fld Club, 36, 334-43
- , 1974      Medieval finds from Castell-y-Bere, Merioneth, Archaeol Cambrensis, 123, 78-112

Cal Pat      Calendar of Patent Rolls, P.R.O.

Callander, J C, 1923      Fourteenth century brooches and ornaments, Proc Soc Antiq Scotland, 58, 160-84

Carless, J, 1900      Some incidents in Hereford life two hundred years ago, Trans Woolhope Natur Fld Club, 17, 45-59

Celoria, F S C, and Kelly, J H, 1973      A post-medieval pottery site with a kiln base found off Albion Square, Hanley, Stoke on Trent, Staffs, City of Stoke on Trent Mus Archaeol Soc Rep, 4

Chaplin, R E, 1971      The study of animal bones from archaeological sites

Charlston, R J, 1968      George Ravenscroft: a new light on the development of his 'Christalline Glasses', J Glass Stud, 10, 107-59

Chatwin, P B, 1955      Brandon Castle, Warwickshire, Trans Birmingham Archaeol Soc, 73, 63-83

Clark, J G D, 1934      Derivative forms of the petit tranchet in Britain, Archaeol J, 91, 32-58

Cohen, I, 1953      Report on archaeology for 1953, Trans Woolhope Natur Fld Club, 34, 144-5

Collingwood, R G, 1930      The archaeology of Roman Britain

Coope, G R, and Osborne, P J, 1968      Report on the Coleopterous fauna of the Roman Well at Barnsley Park, Trans Bristol Gloucestershire Archaeol Soc, 86, 84-7

- Craster, O E, 1967      Skenfrith Castle - when was it built?  
Archaeol Cambrensis, 116, 113-58
- Crook, I G, 1969      Ecology and behaviour of feral mountain  
goats in N Wales, M Sc thesis, University College, Bangor
- Crossley, D W, and Aberg, F A, 1972      16th century glass  
making in Yorkshire, excavations at furnaces of Hutton  
and Rosedale North Riding, 1968-71, Post Medieval Archaeol,  
6, 107-59
- Curnow, P E, and Thompson, M W, 1969      Excavations at  
Richards' Castle, Herefordshire, 1962-64, J Brit Archaeol  
Ass , 32, 105-27
- Davey, P J (ed), 1977      Medieval pottery from excavations  
in the north-west.
- Dawson, D P, Jackson, R G, and Ponsford, M W, 1972  
Medieval kiln wasters from St Peter's Church, Bristol  
Trans Bristol Gloucestershire Archaeol Soc, 91,  
159-67
- Dolley, R H M, 1966      The Norman Conquest and the English  
coinage
- Duffy, A B J, 1953      Scolytidae and Platypodidae, Handbooks  
for the identification of British insects, Royal  
Entomological Soc, London
- Dulley, A J F, 1967      Excavations at Pevensey, Sussex,  
1962-6, Medieval Archaeol, 11, 209-32

- Dunning, G C, 1968      The pitcher imported from Saintonge  
found at Link Street, Worcester, Trans Worcestershire  
Archaeol Soc, 3 ser, 1, 45-7
- Dunning, G C, and Briscoe, G, 1967      Medieval pottery  
roof fittings and a water pipe found at Ely, Proc  
Cambridge Antiq Soc, 60, 81-9
- Eames, E, 1951      The Canynges Pavement, J Brit Archaeol  
Ass , 14, 33-46
- Evans, J, 1970      History of jewellery, 1100-1870
- Evison, V I, Hodges, H, and Hurst, J G (eds), 1974  
Medieval pottery from excavations
- Farley, M, 1976      Saxon and medieval Walton, Aylesbury,  
excavations 1973-4, Records Buckinghamshire, 20,  
153-290
- Fowler, J T O, 1879      The Hereford Roman altar, lost and  
found, Trans Woolhope Natur Fld Club, 9, 165-6
- Fowler, W W, 1889-90      The Coleoptera of the British  
Islands , 3, 4
- Goggin, J M, 1960      The Spanish olive jar: an introductory  
study, Anthropology, 62
- Greaves, S J, 1976      A post-medieval excavation in Woodbank  
Street, Burslem, Stoke on Trent, Staffs, City Stoke on  
Trent Mus Archaeol Soc Rep, 10

Grigson, G, 1958 The Englishman's Flora

HRO Hereford Record Office Documents

Hall, A R, Kenward, H K, & Williams, D, 1980 Environmental evidence from Roman deposits at Skeldergate, Archaeology of York, 14/3

Hall, R A, (ed), 1978 Viking Age York and the north, C B A Res Rep, 27

Hall, R A, et al, 1978 A Viking-age grave at Donnybrook, Co Dublin, Medieval Archaeol, 22, 64-83

Hansen, V, 1950 Danmarke Fauna, 55, Biller XIII Clavicornia 1 Gads, Kobenhavn

Harcourt, R A, 1971 Paleopathology of animal skeletal remains, Vet Rec, 89, 267-72

Hawkins, R N P, 1963 Catalogue of the advertisement limitations of 'spade' guineas and their halves, Brit Numis J, 32, 2-3-4

Haslam, J, 1978 Medieval Pottery

Heys, F G, 1960, Excavations at Castle Green, 1960, a lost Hereford church, Trans Woolhope Natur Fld Club, 36, 343-57 & 387-92

----, 1963 Excavations on a medieval site at Breinton, Herefordshire, Trans Woolhope Natur Fld Club, 37, 272-94

- Heys, F G, and Norwood, J F L, 1958      Excavations on the  
supposed line of King's Ditch, Hereford, Trans Woolhope  
Natur Fld Club, 36, 117-25
- Holling, F W, 1971      A preliminary note on the pottery  
industry of the Hampshire-Surrey border, Surrey Archaeol  
Collect, 68, 57-88
- Hollings, M (ed), 1950      Red Book of Worcester,  
Worcestershire Hist Soc
- Hunter, A G, 1961      17th-18th century amphora from Moreton  
Valence, Trans Bristol Gloucestershire Archaeol Soc, 80,  
130-1
- Hurst, J G, 1958      Saxo-Norman pottery in East Anglia,  
Proc Cambridge Antiq Soc, 51, 37-65
- , 1977      Spanish pottery imported into medieval  
Britain, Medieval Archaeol, 21, 68-105
- Jackson, R G, and Price, R H, 1974      Bristol clay pipes;  
a study of makers and their marks, Bristol City Mus  
Res Monog, 1,
- Jakeman and Carver, 1890      Hereford Directory for 1890
- Jeannel, R, 1941      Coléoptères Carabiques 1, Faune de France,  
39, 1-571
- Jenkins, R, 1937      Industries in Herefordshire in Bygone  
Times, Trans Woolhope Natur Fld Club, 29, 70-5
- Johnson, R, 1882      The ancient customs of the City of  
Hereford

- Johnson, T W M, 1953      Captain Andrew Yarranton and  
Herefordshire, Trans Woolhope Natur Flđ Club, 34,  
39-42
- Jope, E M, 1959      The 12th century castle at Ascot Doilly,  
Oxfordshire, Antiq J, 39, 219-73
- Joy, N H, 1932      A practical handbook of British beetles
- Keen, L J, 1979      The medieval decorated tile pavements  
at Worcester, BAA Conf Trans, 1
- Kenward, H K, 1974      Methods for palaeo-entomology on  
site and in the laboratory, Science and Archaeol, 13,  
16-24
- , 1975      The biological and archaeological  
implications of the beetle, Aglenus brunneus (Gyllenhal)  
in ancient faunas, J Archaeol Sci, 2, 63-9
- , 1976      Reconstructing ancient ecological  
conditions from insect remains: some problems and an  
experimental approach, Ecol Entom, 1, 7-17
- , 1978      The analysis of archaeological insect  
assemblages: a new approach, The Archaeology of York,  
19/1
- Kenward, H K, and Williams, D, 1979      Biological evidence  
from the Roman warehouses in Carey Street, The Archaeology  
of York, 14/2
- Kenyon, K M, 1948      Excavations at the Jewry Wall site,  
Leicester, Soc Antiq Res Rep, 15

- Kenyon, G H, 1967      The glass industry of the Weald
- Kilmurry, K, 1977      The production of red-painted pottery  
at Stamford, Lincolnshire, Medieval Archaeol, 21,  
180-6
- Kilmurry, K, and Mahany, C, 1977      An approach to pottery  
study: Stamford ware, Medieval Ceramics, 1,  
51-62
- Knight, J K, 1970      A 17th century pottery group from  
Swansea Castle, Bull Board Celtic Stud, 23(4), 403-11
- Koch, K, 1971      Zur Untersuchung subfossiler Käferreste aus  
römerzeitlichen und mittelalterlichen Ausgrabungen in  
Rheinland, 373-448, Beiträge zur Archaeologie des Romischen  
Rheinlands, 2, Rheinland-Verlag, Dusseldorf
- Kubasiewicz, M, 1956      Über die Methodik der Forschung  
an ausgegrabenen Tierknochenresten, Materialy Zachodnio-  
pomorskie, 2, 235 (Polish with German summary)
- LMC, 1940      London Museum Catalogue
- Lamb, H H, 1965      The early medieval warm epoch and its  
sequel, Palaeogeogr, Paleoclim, Palaeoecol, 1, 13-37
- Leach, P J, 1971      Hereford Castle excavations, 1968-9,  
Trans Woolhope Natur Fld Club, 40, 211-24
- Le Patourel, J, 1968      Documentary evidence and the  
medieval pottery industry, Medieval Archaeol, 12, 101-26
- Lethbridge, T C, 1931      Recent excavations in Anglo-Saxon  
cemeteries in Cambs and Suffolk

- Lethbridge, T C, 1936      Cemetery at Shudy Camps, Cambs
- Lewis, J M, 1978      Medieval pottery and metalware in  
Wales
- Lindroth, C H, 1974      Coleoptera, Carabidae, Handbooks for  
the identification of British Insects, 4, (2), Royal  
Entomological Soc, London
- McWhirr, A (ed), 1976      Studies in the archaeology and  
history of Cirencester, Brit Archaeol Rep, 30.
- Megnin, P, 1894      La faune des cadavres, Paris
- Meyer, E, 1929      Ein frühmittelalterlicher Bucheinband  
aus Enger I W im Schloss-museum , Berliner Museum, Berichte  
aus den preussischen Kunstsammlungen, 1, 71-5
- Munsell, 1958      The Munsell Book of Color, Baltimore, USA,
- Musty, J, 1973      A preliminary account of a medieval pottery  
industry at Minety, N Wiltshire, Wiltshire Archaeol Natur  
Hist Mag, 68, 79-88
- NMA, 1892      Catalogue of the National Museum of Antiquities  
(Scotland)
- Neal, D S, 1977      Excavations at the palace of Kings Langley  
Hertfordshire, 1974-6, Medieval Archaeol, 21, 124-65
- Noddle, B A, 1973      Determination of Body Weight of Cattle  
from bone measurements, in Domestikationsforschung und  
Geschichte der Haustirre (ed J Matolesi), Hungarian  
Academy of Sciences, Budapest, 337-89

- Noddle, B A, 1974      Ages of epiphyseal closure in feral  
and domestic goats and ages of dental eruption, J Archaeol  
Sci, 1, 195-204
- Noddle, B A, and Bramwell, D R, 1975      A comparison of  
the animal bones from 8 medieval sites in southern Britain,  
in Archaeological studies (ed A T Clason) , 248-60
- Norwood, J F L, 1957      Medieval Finds in Offa Street,  
Hereford, Trans Woolhope Natur Fld Club, 35,  
329-37
- O'Farrell, and Butler, 1948      Insects and mites associated  
with the storage and manufacture of foodstuffs in Northern  
Ireland, Economic Proc of the Royal Dublin Soc, 3, 343-407
- O'Neil, H E, 1952      Whittington Court Roman Villa,  
Whittington, Gloucestershire, Trans Bristol Gloucestershire  
Archaeol Soc, 71, 13-87
- Oswald, A, 1964      Excavations of a 13th century building  
at Weoley Castle, Birmingham, 1960-1, Medieval Archaeol,  
6-7, 109-34
- , 1969      Marked clay pipes from Plymouth, Devon,  
Post Medieval Archaeol, 3, 122-42
- , 1975      Clay pipes for the archaeologist, Brit  
Archaeol Rep, 14
- PRO      Public Record Office
- Palm, T, 1959      Die Holz - und Rinden - Käfer der Süd -  
und Mittelschwedischen Laubbäume - Opuscula Entonidologica  
Supplimentum, 16

- Peacock, D P S (ed), 1977      Pottery and early commerce
- Pearce, B J, 1957      Coleoptera, Pselaphidae, Handbooks  
for the Identification of British Insects, 4, (9),  
Royal Entomological Soc, London
- Platt, C, & Coleman-Smith, R, 1975      Excavations in medieval  
Southampton, 2 vols
- Rahtz, P A, 1969      Upton, Glos, 1964-8, Trans Bristol  
Gloucestershire Archaeol Soc, 88, 74-126
- , 1976      Bordesley Abbey, Redditch, Hereford-  
Worcestershire, first report on excavations, 1969-73,  
Brit Archaeol Rep, 23
- , 1979      The Saxon and medieval palaces at Cheddar,  
Brit Archaeol Rep, 65
- Reinhart, H, 1882      Beiträge zur Gräber-Fauna, Verh zool-  
bot Ges Wein, 31, 207-10
- Robinson, C J, 1872      Manors and mansions of Herefordshire,
- SCBI, 1964      Sylloge of Coins of the British Isles,  
Chester I, Willoughby Gardner Collection
- Sawle, J, 1977      Interim report on trial excavations in  
Hereford, 1976, West Midlands Archaeol News Sheet, 20, 81
- Shoesmith, R, 1967      Hereford - the western rampart,  
Trans Woolhope Natur Fld Club, 39, 51-67

- Shoesmith, R, 1975      Reports of sectional recorders:  
 archaeology 1975, Trans Woolhope Natur Fld Club, 41,  
 337-41
- , 1980      Hereford City excavations, 1,  
Excavations at Castle Green, CBA Res Rep, 36
- , 1982      Hereford City excavations, 2,  
Excavations on and close to the defences, CBA Res Rep,  
46
- , forthcoming      Excavations at Chepstow, Cambrian  
 Archaeol Monog
- Short, B F, et al, 1958      Effect of level of feeding on  
 variability of fibre diameter in 4 breeds of sheep,  
Agric Res, 9, 229-36
- Skeel, C, 1926      Cattle trade between Wales and England  
 from 15th to 19th centuries, Trans Roy Hist Soc, 4<sup>th</sup> ser,  
9, 135-58
- Stafford, F, 1972      Insects of a medieval burial, Sci  
and Archaeol, 7, 6-10
- Stanford, S C, 1967      The deserted medieval village of  
 Hampton Wafer, Herefordshire, Trans Woolhope Natur Fld  
Club, 39, 71-92
- Stephens, J F, 1839      A manual of British Coleoptera or  
beetles etc.
- Strong, G, 1848      The heraldry of Herefordshire

- Thirsk, J, 1965      Agrarian history of England and Wales,  
5
- Thompson, 1956      Inventory of British coinhoards
- Thorpe, W A, 1929      A history of English and Irish glass
- Thursfield, T H, 1907      Early Salopian pipes, Trans  
Shropshire Archaeol and Nat Hist Soc, 3 ser, 7,  
160-5
- Tottenham, C E, 1954      Staphylinidae, Handbooks for the  
identification of British insects, Royal Entomological  
Society, London
- Trow-Smith, R, 1957      A history of British livestock  
husbandry, 1
- Uerpmann, H-P, 1973      Animal bone finds and economic  
archaeology: a critical study of osteo-archaeological  
method, World Archaeol, 4, 307-22
- V and A Mus Coll      Victoria and Albert Museum Collection
- VCH, 1908      Victoria County History of the County of  
Hereford, 1
- Van Es, W A and Verwers, W J H, 1975      Ceramique peinte  
d'époque Carolingienne trouvée a Dorestad, Berichten van  
de Rijksdienst voor het Ouhheidkundig Bodemonderzoek,  
25, 133-64
- Van Zeist, W, 1968      Prehistoric and early historic food  
plants in the Netherlands, Paleohistoria, 14,  
41-173

- Vince, A G, 1977      Newent glasshouse: a late 16th and early 17th century glasshouse and late 17th and early 18th century pottery, Comm Rescue Archaeol Avon, Gloucestershire. Somerset, Occas Pap, 2
- , 1978      The petrology of some post-medieval pottery from Sidbury, Worcester , Trans Worcestershire Archaeol Soc, 6, 88
- Vogt, H, 1967      Familia: Colidiidae, in (Freude, H, Harde, K W, and Lohse, G A (eds), Die Käfer Mitteleuropas, 7, 179-216
- Vol 1      see Shoesmith, 1980
- Vol 2      see Shoesmith, 1982
- Von den Driesch, A, 1975      Die Berwertung pathologische-anatomischer veränderungen an vor und fruhgeschichtlichen Tierknochen, Amsterdam
- Walker, I C, 1972      Note on a Hereford ipemaker, Trans Woolhope Natur Fld Club, 40, 388-9
- Walton, I, 1653      The Compleat Angler
- Watkins, A, 1918      Greyfriars monastery, Hereford, Trans Woolhope Natur Fld Club, 23, 129-31
- , 1921      Archaeological notes, Trans Woolhope Natur Fld Club, 24, 64-5
- , 1927      Discovery of a round church, Trans Woolhope Natur Fld Club, 26, 102-5

- Watkins, 1930      Herefordshire pipe factories, Trans Woolhope Natur Fld Club, 27, 132-3
- Watkins, C M, 1960      North Devon pottery and its export to America in the 17th century, U S National Bulletin, 225, Contributions from the Museum of History and Technology: Paper 13, Smithsonian Institution, Washhington, DC
- Webster, G, 1953      A Saxon treasure Hoard found at Chester 1950, Antiq J, 33, 20-32
- Webster, P V, 1976      Severn Valley ware, Trans Bristol Gloucestershire Archaeol Soc, 94, 18-46
- Welch, F B A, and Trotter, F M, 1961      Geology of the country around Monmouth and Chepstow, Mem Geol Survey
- Wheeler, R E M, 1926      The Roman fort near Brecon, Hon Soc Cymmrodorion, London
- Whitehead, D A, 1977      The Book of Worcester
- Williams, J H, 1979      St Peter's Street, Northampton: excavations 1973-6
- Wilson, D M, 1964      Anglo-Saxon ornamental metalwork, 700-1100
- , (ed), 1976      The archaeology of Anglo-Saxon England
- Wilson, J, 1919      Evolution of British cattle and the fashioning of breeds
- Woodhouse, J, 1976      Barrow Mead, Bath, 1964: excavation of a medieval peasant house, Brit Archaeol Rep, 28