EAST ANGLIAN ARCHAEOLOGY

REPORT NO.8

NORFOLK

NORFOLK ARCHAEOLOGICAL UNIT
Norfolk Museums Service
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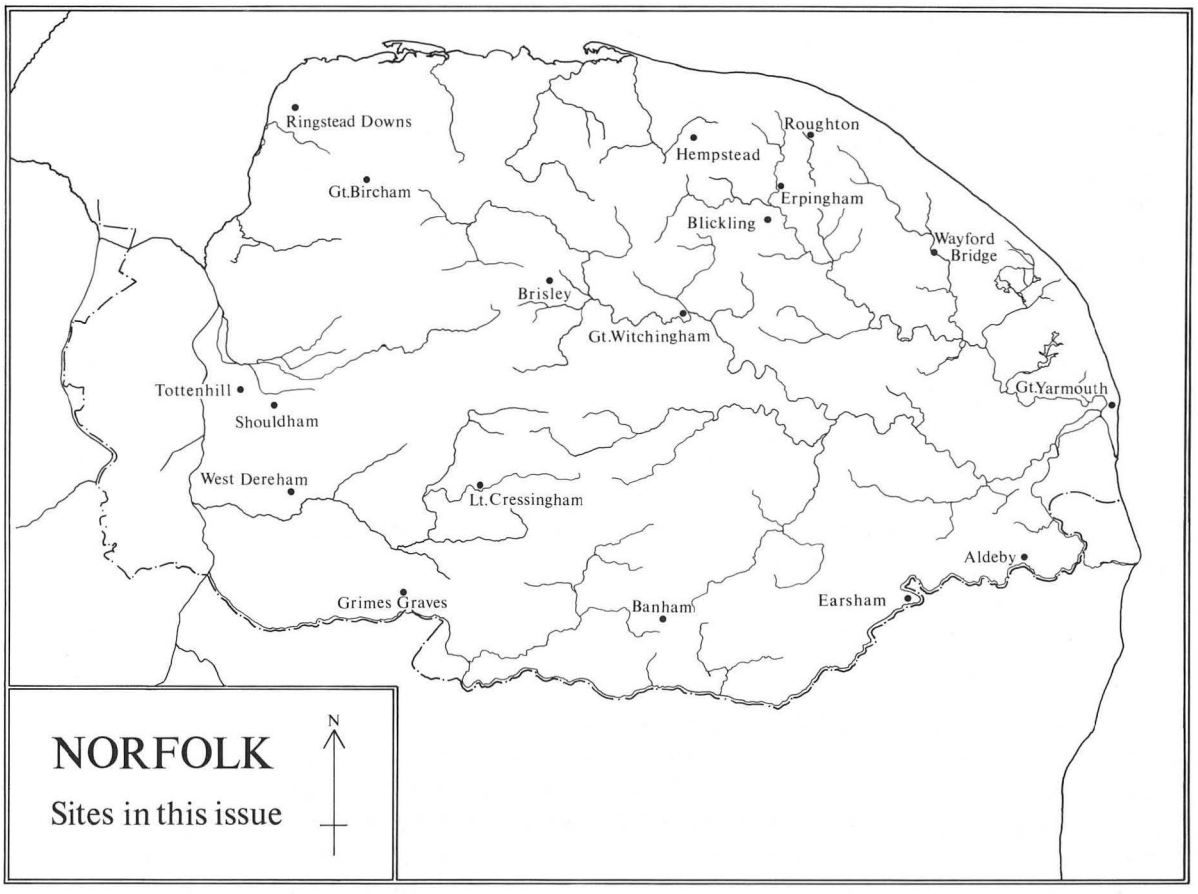

Fig.1. Map of Norfolk showing sites described in this volume.

A Hand-axe from Little Cressingham

by Andrew Lawson

I. SUMMARY

In 1972 a hand-axe was found on the bank of the Blackwater stream in the parish of Little Cressingham. The hand-axe is of a type usually dated to the early Devensian glacial stage and associated with Mousterian-like industries. An examination of the stratigraphy suggested that the hand-axe had come from the base of a gravel, the date of which can be shown to be in agreement with the typological date of the axe. No other undisturbed archaeological site of this date is known in Norfolk.

II. ACKNOWLEDGEMENTS

Thanks are due to Mr. Cyril Lake for permission to excavate, to Dr. Geoff Boulton for his observations on the stratigraphy and analysis of pollen and to Mr. John Wymer for constructive criticism of the typescript. But the author's greatest debt is to Mr. Robin Brown whose enthusiasm and keen observation lead to the discovery of the site and subsequently its investigation.

III. INTRODUCTION

On 5th March 1972 Mr. Robin Brown found the hand-axe on the south east bank of the Blackwater stream in the parish of Little Cressingham at TF 8873 0034 within site 4697 (Fig. 2). Here the Blackwater stream flows on the north west side of a low lying and formerly waterlogged field, Church Meadow, surrounded by low hills. At the north east corner of this field the Blackwater enters through a constriction between two opposing spurs. Aerial photographs show that the Blackwater has altered its course a number of times across the north of the field, though now the stream has been mechanically straightened and deepened to improve the drainage of the meadow. A former course of the Blackwater marked the common boundary of Threxton (now incorporated into Little Cressingham civil parish) and Saham Toney parishes, although the boundary and stream no longer coincide. The Blackwater is a tributary of the River Wissey, which it joins 6 km to the west. The River Wissey is itself a tributary of the River Ouse. The site lies in the north east corner of Little Cressingham parish 1.5 km west of Watton at the junction of the western edge of the boulder clay plateau of central Norfolk with the well drained Breckland immediately to the south west. The low hills to the north of the site are of chalk capped with a thin skin of boulder clay, while to the south and east the hills are capped with sandy deposits of the 'contorted drift'. Erosion of the sand hills has probably resulted in the formation of gravels within the river valley. The find was uncovered due to the recutting of the stream and its bed in the summer of 1971, and it presumably had been exposed on the stream bank due to subsequent weathering of the bank. It is unlikely that the piece had long been exposed as it would have certainly been noticed earlier during one of Robin Brown's frequent examinations of the area usually

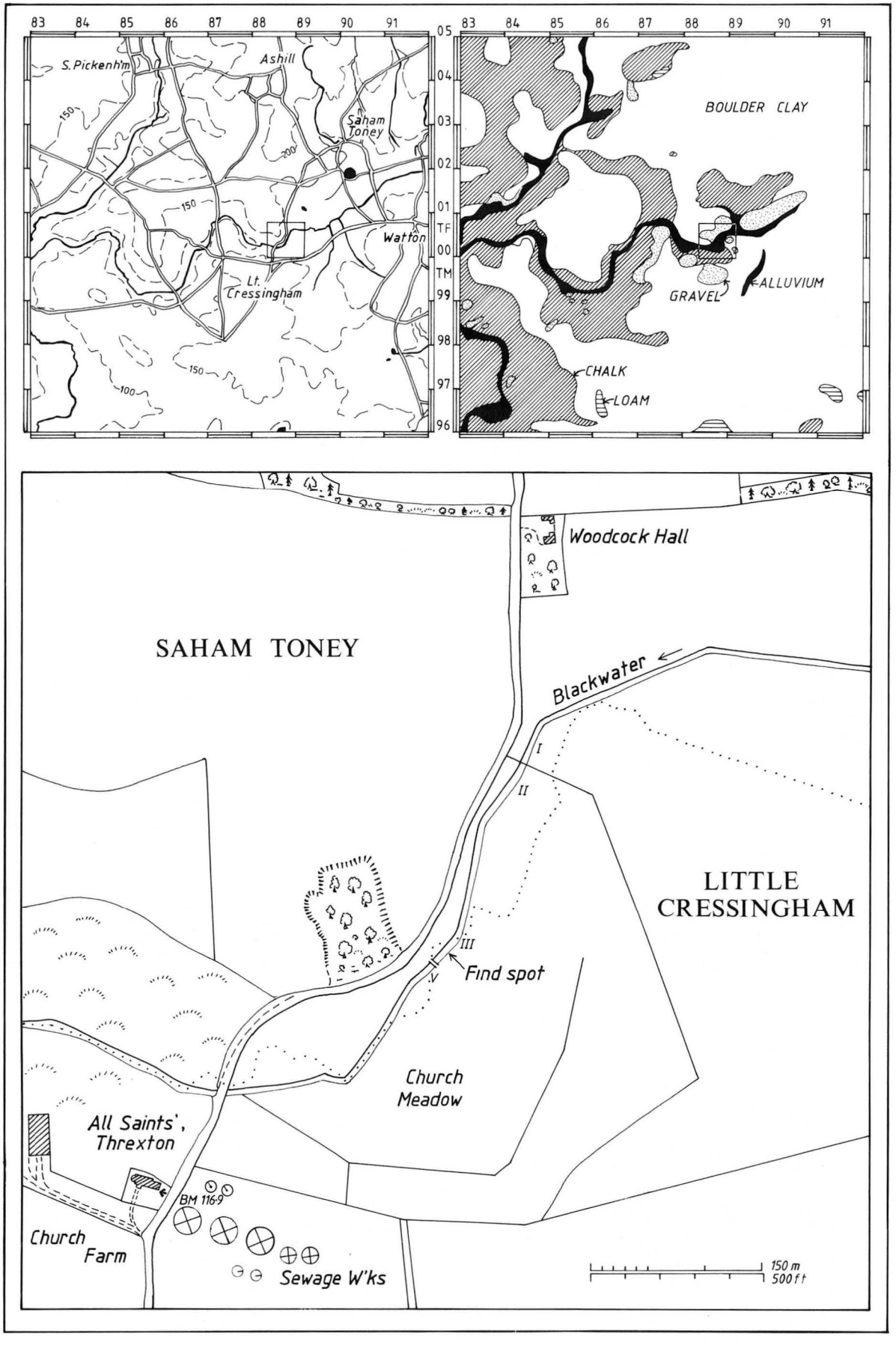

Fig. 2. Little Cressingham: Location and drift geology of find spot and other exposures (I–V).

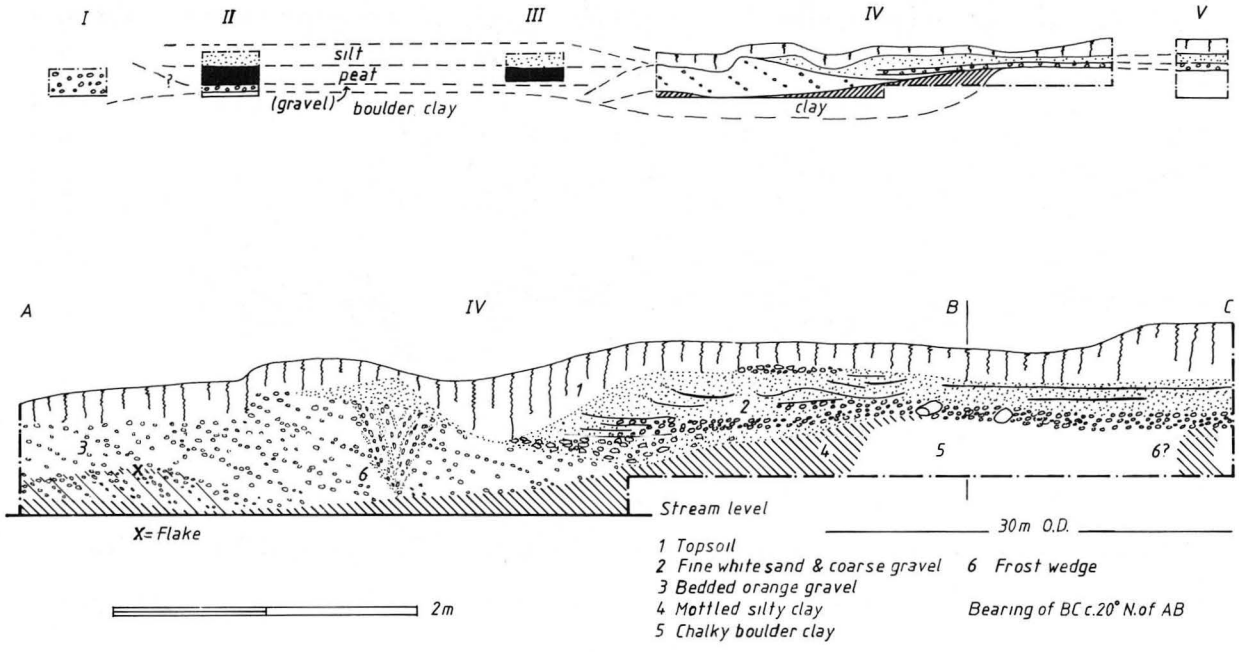

Fig.3. Section revealed at find spot (IV) and sketch of surrounding exposures. See Fig.2 for location of I-V.

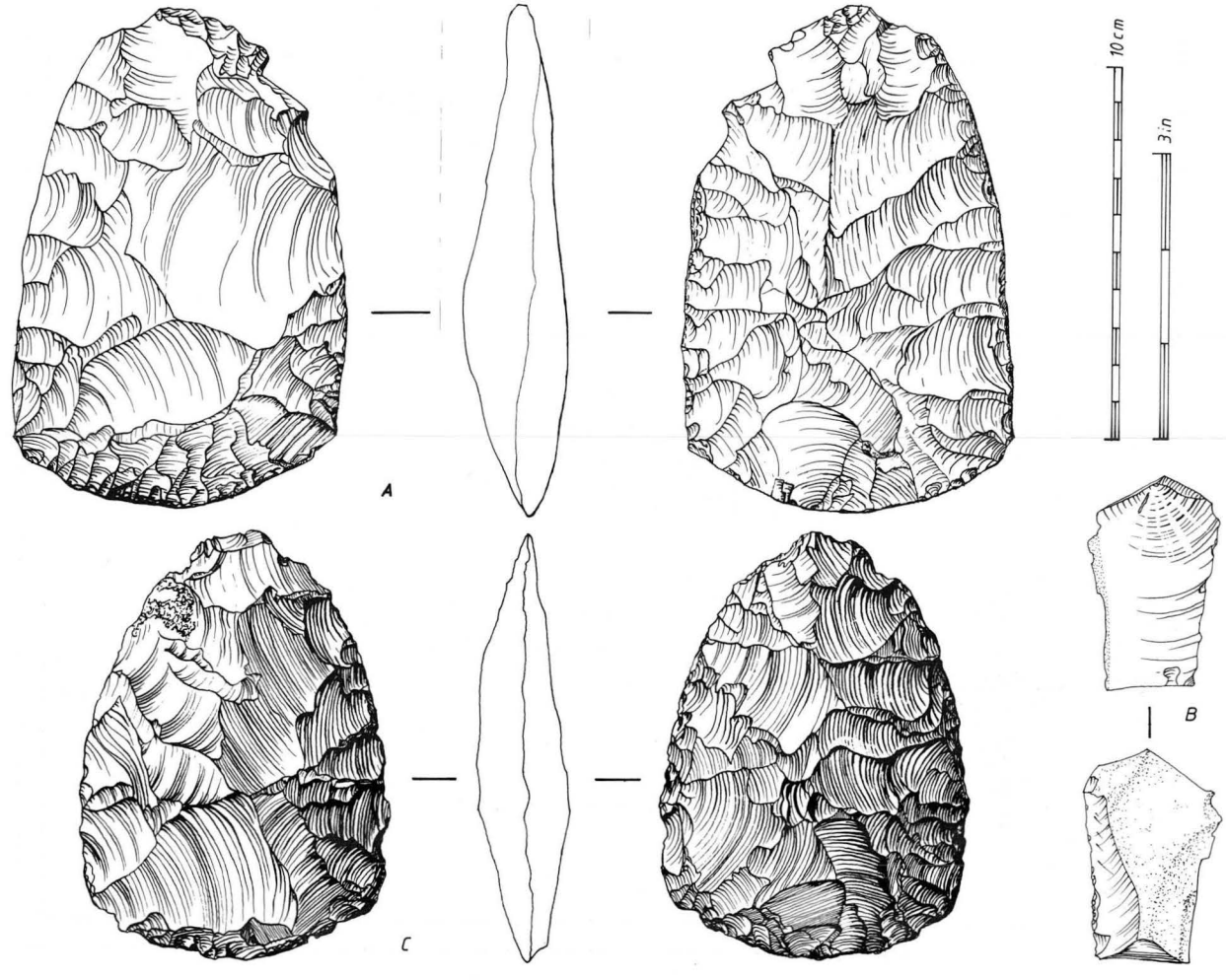

Fig.4. A and C, Bout coupé hand-axes (see addendum, p.8 for C); B, Flake. Scale 1:2.

conducted to retrieve Roman material, which is found both in the river banks and on the surrounding fields.

On 23rd October 1976, with the assistance of Robin Brown, 8 m of the south east bank of the stream was cut back near the find spot in order to establish the stratigraphic position of the hand-axe. The section revealed (Fig. 3) suggested that the hand-axe had come from the base of a sandy, poorly graded, shattered, orange flint gravel, obliquely bedded (Fig. 3, layer 3). This conclusion was helped by photographs taken by Robin Brown of the hand-axe in situ. The base of this gravel was marked by a darker, apparently more humic or manganese-stained, silty layer within which was a probably humanly struck flake in a fresh condition. The gravel rested on a mottled blue and orange silty clay with flint inclusions just above the present stream level. A pollen sample (see below) was taken from this deposit. Both sediments appeared to lie in an extinct stream channel cut into the underlying layer of chalky boulder clay or solifluxed chalk (involutions can be seen in exposures further west) that covered the chalk at the base of the low spur to the north of the site. Both the sandy gravel and chalky layer contained frost wedges penetrating from their surfaces. After the former channel and chalky layer had been truncated they were covered with successive layers of a coarse heavily rolled flint gravel and podsolised fine white sand with well developed, dark illuviated horizons. The top of the section lies at c. 33. 5 m (110 ft) O. D. In other exposures of the bank further upstream (No. II, Figs. 2 and 3) a layer of peat can be seen above the heavily rolled coarse flint gravel and beneath the successive layers of sand. No animal bones were retrieved from the orange gravel, but bones and antler have previously been observed in the peat and overlying alluvium. An inspection of an exposure on 10th January 1976 revealed sherds of late second or early third century A. D. Roman pottery at the junction of these two sediments. Further upstream only coarse gravel is seen in the river bank.

IV. THE ARTEFACTS

The Hand-axe (Fig. 4A) Maximum length 13. 4 cm

Parallel sides with cutting edges gently curving to a bluntly pointed butt, possibly slightly damaged; base with curved blade meeting the sides at markedly angular corners; slightly twisted; plano-convex section; mint condition; homogenous brown flint; unpatinated.

The Flake (Fig. 4B) Maximum length 5. 6 cm

Sharp condition with signs of use or damage on one edge; dark brown flint; unpatinated; cortex on dorsal side; unprepared platform.

V. POLLEN ANALYSIS

by Dr. G. S. Boulton

A pollen analysis was done of a red-brown sandy mud (Fig. 3, layer 4). It was subjected to standard treatment using the procedures described by West (1968). It was first treated with HCl to remove carbonates, and with HF to remove siliceous material; a few slides were prepared.

The frequency of pollen and of any organic matter was low and some siliceous debris remained on the slide. A count of all pollen grains yielded the following percentages:-

Graminae	- 30%
Cyperaceae	- 17%
Betula sp.	- 6%
Salix sp.	- 3%
Indeterminate grains of similar aspect	- 44%

The indeterminate grains were subsequently identified as algal spores.

Interpretation

It is difficult to say whether the pollen were in position of primary sedimentation or whether they were derived. Presuming that they represent a single assemblage they indicate a relatively open environment with absence of interglacial-type tree vegetation. It is not possible to date the assemblage on the basis of this information, nor is it possible to assess whether it comes from an interstadial period or the opening or closing of an interglacial, but merely to say that the assemblage is consistent with any of these three hypothesis.

VI. DISCUSSION

ARCHAEOLOGICAL SIGNIFICANCE

Hand-axes are the characteristic tool of all Lower Palaeolithic Achculian industries. The Little Cressingham example is of a rare and elegant type, usually very thin and sometimes with plano-convex section. Such axes belong to the bout coupé (Bordes 1953, type 132) or flat-butted cordate type (Wymer 1968, 59; type N). When found in stratified Acheulian contexts these hand-axes appear to belong to the latest stage of these industries.

Typologically, the Little Cressingham axe can be dated no earlier than an interstadial of the Wolstonian glaciation, perhaps c. 160, 000 B. C. However, the form of the axe is closer to those examples with a markedly angular base most commonly associated with Mousterian-like Levalloisian industries dated to the earlier phases of the last (Devensian) glaciation (Mellars 1974, 60). Such an attribution would enhance the importance of the find, as it would be the only stratified archaeological site of this date in Norfolk. The only other published site in East Anglia is at Little Paxton, Hunts. (Paterson and Tebbutt 1947).

In Britain the archaeology of this period is at present poorly understood, although characteristic artefacts are probably more widespread than is generally appreciated, resulting from a lack of synthesis. Lower and Middle Palaeolithic material has been reported from 200 sites in Norfolk (Fig. 5). These find spots have produced a total of more than 1200 hand-axes, and 500 other tools and flakes. However, few of these sites are prolific and only eight have produced more than twenty five artefacts. Only two other bout coupé hand-axes have been reported from the county. In 1935 an examples was found in the solifluxed gravelly subsoil of a small gravel pit in Mousehold, Norwich (TG 248 102; Sainty 1935, fig. 1). The second was reported as a surface find from North Wootton (c. TF 653 252) in 1976, although further information of this find is not available.

GEOLOGICAL CONSIDERATIONS

The section at Little Cressingham records a series of fluviatile, fen and floodplain sediments cut into a possible chalky boulder clay. This boulder clay might suggest a cold phase possibly contemporary with the Gipping Till representing, in East Suffolk, the penultimate (Wolstonian) glaciation, or more probably with the Lowestoft Till of the preceding (Anglian) glaciation which is widespread throughout Lincolnshire, Suffolk and Norfolk. Recently, the separation of these two tills has been questioned, and it has been suggested that both should belong to the same glacial stage (Bristow and Cox 1973).

The usual method of correlating Pleistocene deposits is by analysis of the stratified faunal and floral remains within the deposit (the biota), the presence, absence and proportion of select species indicating the different environmental conditions of each stage. At Little Cressingham the environmental evidence is not conclusive (above), consequently, it is not possible at this stage, to assign the clay and gravel deposits to a specific stage with any degree of certainty. Lithological changes can occur over very small distances,

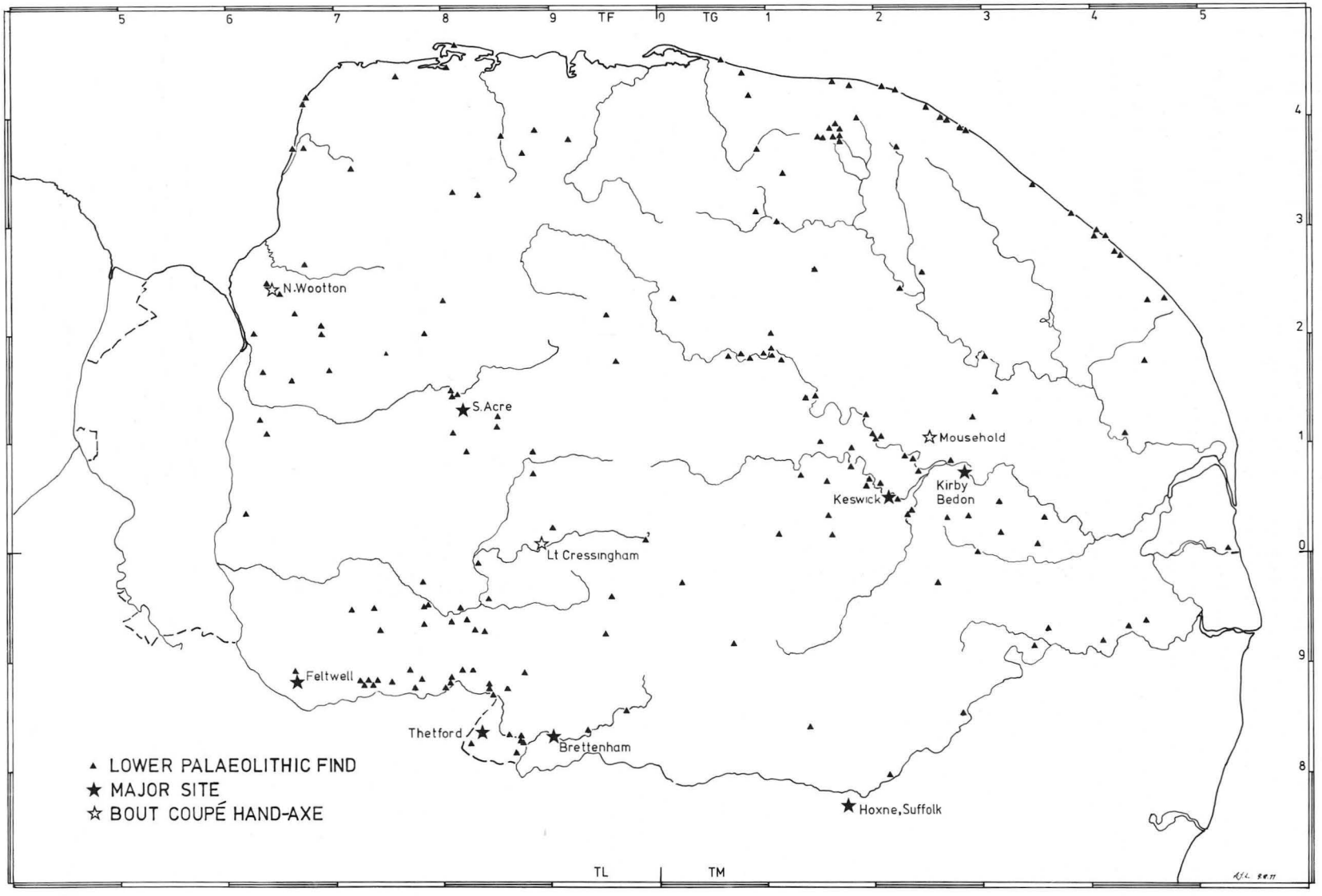

Fig. 5. Distribution of Lower and Middle Palaeolithic finds in Norfolk.

so it would be dangerous to compare the Little Cressingham sequence with more complete sequences. However, the Intermediate (second) terrace of the River Cam (c. 13.7 to 6.1 m; 45 to 20 ft O.D.) of early Devensian age has been compared with a series of confluent gravels deposited in terrace-like form along the Fen margin, possibly in a lake blocked up by the Hunstanton ice-sheet. These gravels are seen at 3.0 to 4.5 m (10 to 15 ft) O.D. at Stoke Ferry and Wretton, Norfolk on the River Wissey (Sparks and West 1965). It is possible that the gravel at Little Cressingham may be of the same date as these terrace-like deposits at Wretton, where gravels, sands and organic deposits containing a full glacial fauna of the early Devensian glaciation cover fluviatile sediments of a meandering river of the preceding (Ipswichian) interglacial (Sparks and West 1970). There would certainly be no contradiction with the archaeological evidence if the gravel at Little Cressingham was equated with terrace-like deposits lower in the Wissey and perhaps even the silty clay with late Ipswichian deposits though this is not proven. The deposition of the gravel at Little Cressingham is followed by an episode sufficiently cold for the formation of frost wedges. The supression of these conditions and truncation of the section may have been caused by the return of the stream which was also responsible for the deposition of the second, coarse gravel.

Only seven sites in Norfolk have been dated by their mammalian fauna to the Ipswichian interglacial (McWilliams 1972) of which two are coastal. The riverine sites indicate that aggradation took place during the Devensian stage in all those tributaries of the Gt. Ouse represented. At Shropham, in the River Thet valley parallel to the Wissey, the Ipswichian peat and mud is overlain by a gravel assigned to the Devensian stage, which in turn is overlain by peat and sand (McWilliams 1972, 6 and 8). This sequence seems very similar to that at Little Cressingham, where peat and alluvium cap the sequence. The peat presumably formed in the low-lying area in which the site lies during the post-glacial period, while the alluvium post dates the Roman pottery at its base.

The cessation of peat growth during the Roman period could be compared with a similar situation throughout the Fens (Hallam 1970). The alluvium presumably reflects subsequent periodic flooding of the Blackwater stream. The alluvial deposits have been podsolised with the resultant formation of a series of dark illuviated horizons.

CONCLUSION

The type of hand-axe represented at Little Cressingham is usually dated to the start of the last (Devensian) glaciation. Interpretation of the stratigraphy agrees with the evidence elsewhere for the aggradation, at this time, of terraces flanking the River Ouse and its tributaries within which system the Little Cressingham site lies. Pollen analysis does not contradict these suggestions.

February 1978

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ADDENDUM

In early June 1978 Robin Brown found a second bout coupé hand-axe. The find spot was 20 m south east of the northern limit of Church Meadow on the south east bank of the Blackwater stream in the parish of Saham Toney. The hand-axe lay on the surface of material that had been cut from the stream bed and its banks during the winter of 1977-8 and then subsequently spread. The find had probably come from a fine yellow cross-bedded fluviatile gravel clearly visible in the north west stream bank. This deposit cut into an underlying blue clay and is presumably equivalent to the gravel in the earlier exposure from which the first hand-axe is thought to have come (Fig.3; Layer 3).

Elsewhere in the north west bank the later coarse gravel was clearly distinguishable.

Description: (Fig.4C) maximum length 11.4 cm; convex sides with sharp edges curving gently to a bluntly pointed butt; base with curved blade meeting the sides at markedly angular corners; slight twist on one edge; one face flatter than the other, but not plano-convex; mint condition; homogenous brown flint; unpatinated.

This axe is so similar to the earlier find that it must belong to the same industry and would therefore be contemporary.

June 1978

The Investigation of a Mesolithic and Later Site at Banham

by Andrew Lawson

I. SUMMARY

Trial excavation of a site which had produced surface finds showed that early Mesolithic material remained in situ. Not all the surface flints are of this date, and it seems probable that there has been intermittant activity on the site over a very long period of time. It appears that only the later layers have been disturbed by subsequent ploughing.

II. ACKNOWLEDGEMENTS

The author is extremely grateful to Mr. Charles Clarke of Micklehaugh Farm, Banham, for permission to investigate this site. Although Mr. Clarke continues to collect surface finds at a remarkable rate and maintains his collection at Micklehaugh Farm, he has generously presented the finds from the excavation to the Norfolk Museums Service and these are held at Norwich Castle Museum [1]. The catalogue was prepared with the help of Mr. Peter Saunders.

III. INTRODUCTION

In December 1964 Mr. Clarke took two flint tranchet axes which had been found on the surface of a ploughed field at Micklehaugh Farm, Banham, site 2259, to Norwich Castle Museum for identification. Encouraged by the staff of the Museums Service and with a newly found interest in prehistory, Mr. Clarke then collected more than 4000 flint artefacts from a restricted area of his farm (Fig. 6) by February 1976. Many of the finds are axes or scrapers. These are catalogued below (p. 18). The farm lies at 55 m O. D. (180 ft) on intermediate drifts just to the east of the southern stretches of the Norfolk Breckland. This is the most elevated point in the flat topography of the area. Higher ground is encountered 10 km to the north or west, and 4 km to the east (Fig. 6). To the south the ground slopes down to the River Waveney, 6 km distant. The field in which the site lies has been subsoiled on two occasions [2] though normal ploughing has never exceeded 25 cm. Because of the threat of further ploughing and subsoiling the writer with the assistance of Mr. Clarke, Mr. Peter Saunders and three other volunteers conducted a small excavation in February 1975 to establish if any material remained in situ and what depth of stratification, if any, was preserved.

IV. THE EXCAVATION

A trench 2 m by 3 m was opened in the area where the concentration of surface finds was greatest (TM 0790 8649). After the removal of most of the topsoil the area was divided into six transects each 1 m square (Fig. 7). The last of the topsoil, a very dark

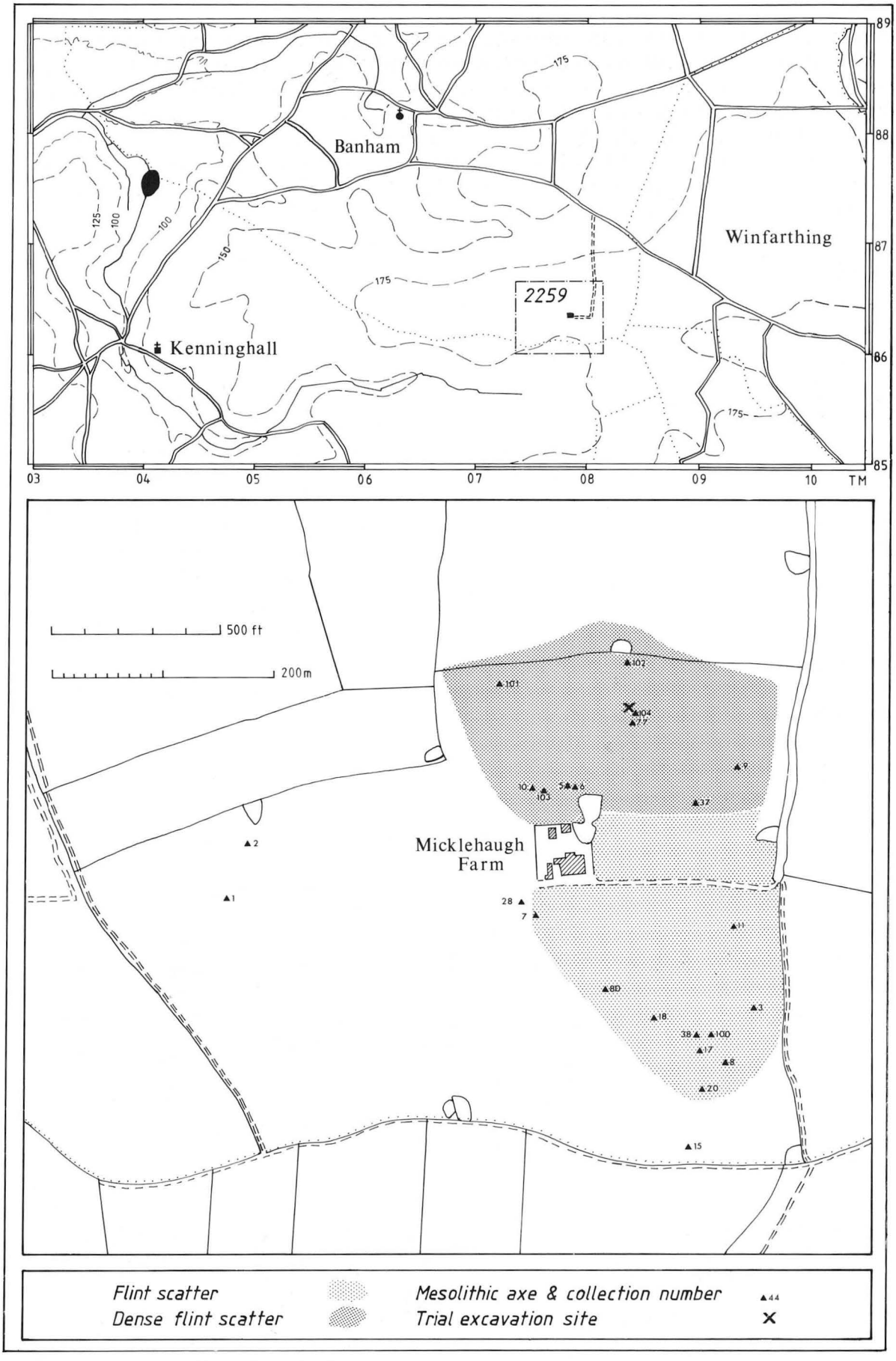

Fig. 6. Location of Micklehaugh Farm, Banham, showing main concentration of surface finds and location of excavation.

greyish brown clayey sand was removed to a depth of c. 30 cm below the surface. Finds from this trowelling were recorded by transect only (transects 1 to 6 in Fig. 7); 20 cm of the dark yellowish brown clayey subsoil was then removed. Each find from this uniform layer was identified with a small find number and two dimensionally plotted within its transect (transects 7 to 12 in Fig. 7). Two small sondages showed that this layer continued for at least another 10 cm before becoming darker and before finally resting unevenly on a mottled yellowish red/grey clay (Fig. 7). One of the sondages produced three blades and pot-boilers from a depth of c. 60 cm below ground level.

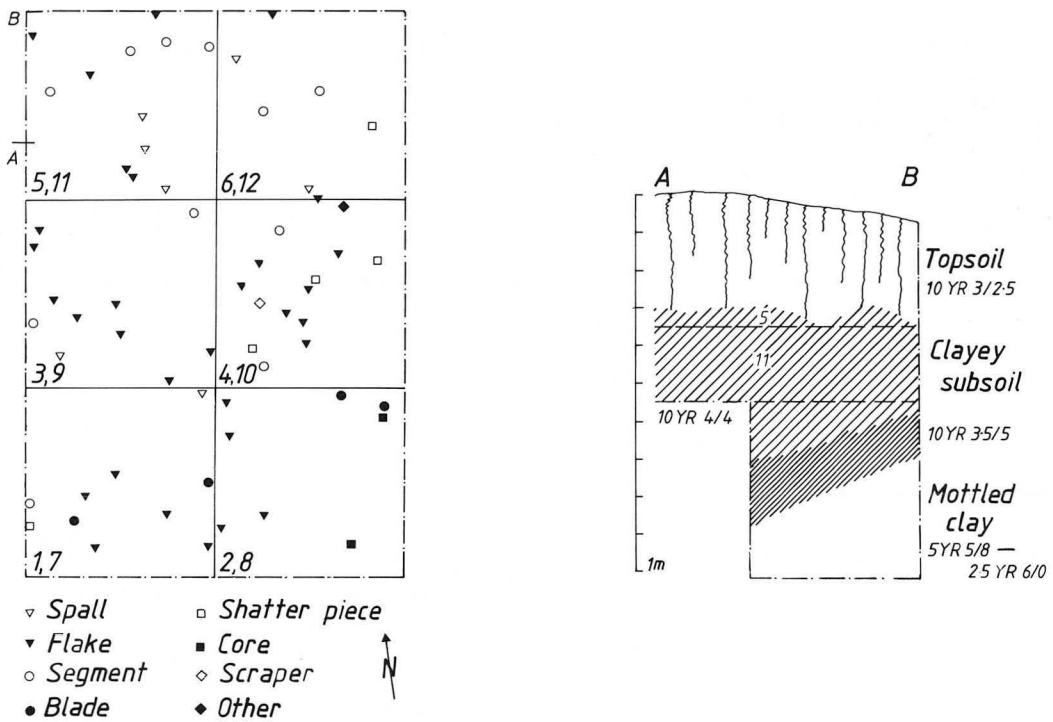

Fig. 7. Plan of excavation, showing transect numbers and section.

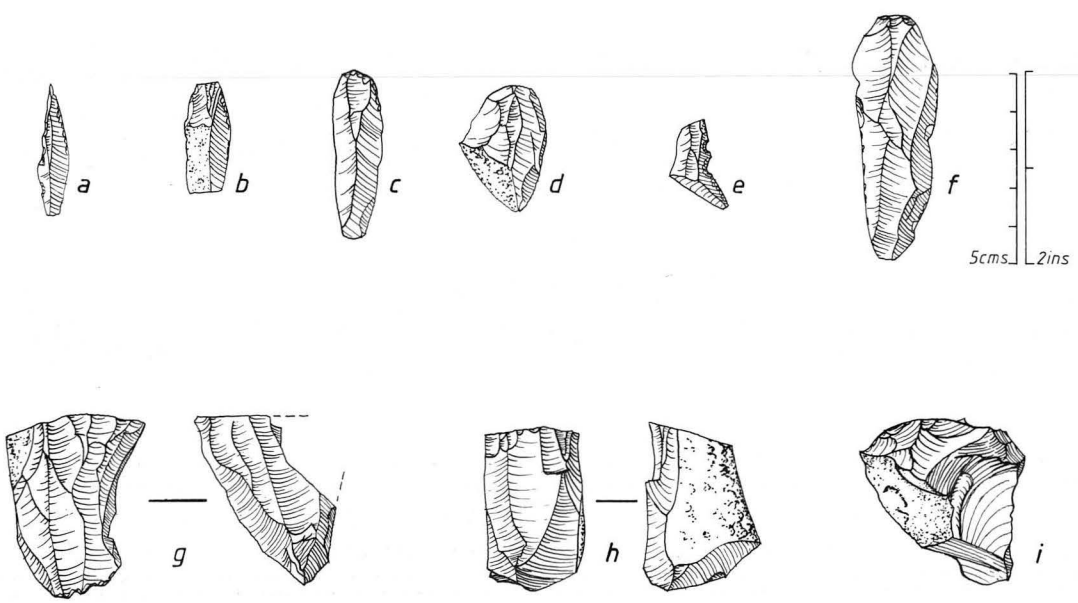

Fig. 8. Selected flint artefacts from the excavation. Scale 1:2.

Description of flints in Fig. 8

a) Microlithic retouched pointed blade; pale brown flint; light grey patina; topsoil.

b) Blade segment with lateral retouch; pale brown flint; light grey patina; cortex on one face; No. 28; transect 8.

c) Blade; pale brown flint; light grey patina; No. 29; transect 7.

d) Pointed flake; heavy white patina; cortex on lower edge; No. 30; transect 8.

e) Notched flake; pale brown flint, very light grey patina; No. 49; transect 10.

f) Blade, mottled brown flint; unpatinated; ware on edges; No. 66; sondage; c. 60 cm below surface.

g) Broken prismatic double platform core; dark grey flint; unpatinated; No. 8; transect 8.

h) Double platform core; dark grey flint; grey patina; cortex on reverse; No. 42, transect 8.

i) Scraper on shatter piece; dark grey flint; unpatinated, cortex on one side; No. 48, transect 10.

Description of flints in Fig. 9

a) Microlithic backed blade with opposed retouch; dark grey flint; light patina.

b) Microlithic backed blade; pale grey flint; light patina.

c) Obliquely truncated microlithic blade, pale grey flint; light patina.

d) Pointed microlithic blade with retouched butt; grey flint; heavy patina.

e) Bi-truncated microlithic blade; dark grey flint; unpatinated.

f) Blade; prepared platform, dark grey flint; light patina.

g) & h) Blades, prepared platforms; grey flint; heavy patina.

i-k) Blades, prepared platforms; heavy patina.

l) Pointed blade retouched after patination; grey flint; light patina.

m) Pointed blade with lateral retouch or use after patination; dark grey flint; heavy patina.

n) Pointed blade; dark grey flint; light patina.

o) Blade with lateral retouch and notched base; dark grey flint; unpatinated.

p) Broken blade with lateral retouch; pale grey flint; unpatinated.

q) Saw on blade with prepared platform; patinated grey flint.

r) Saw on small blade; patinated grey flint.

s) Borer; tip broken; dark grey flint; light patina.

t) Graver; dark grey flint; patinated.

u) Notched flake; dark grey flint; unpatinated.

v) Round scraper on flake; dark grey flint; unpatinated.

w) Scraper on flake with cortex, dark grey flint; unpatinated.

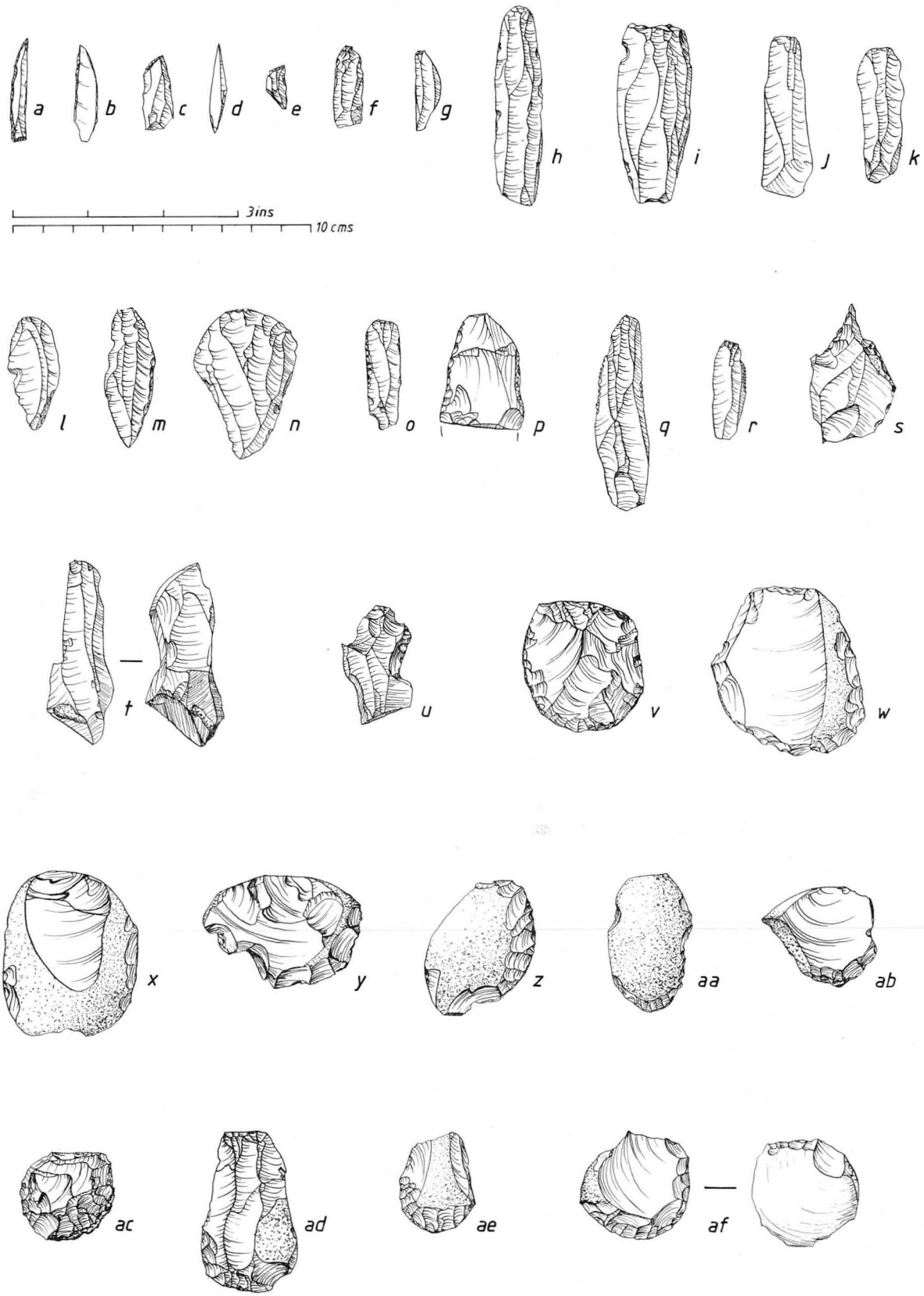

Fig. 9. Selection flint artefacts from surface collection. Scale 1:2.

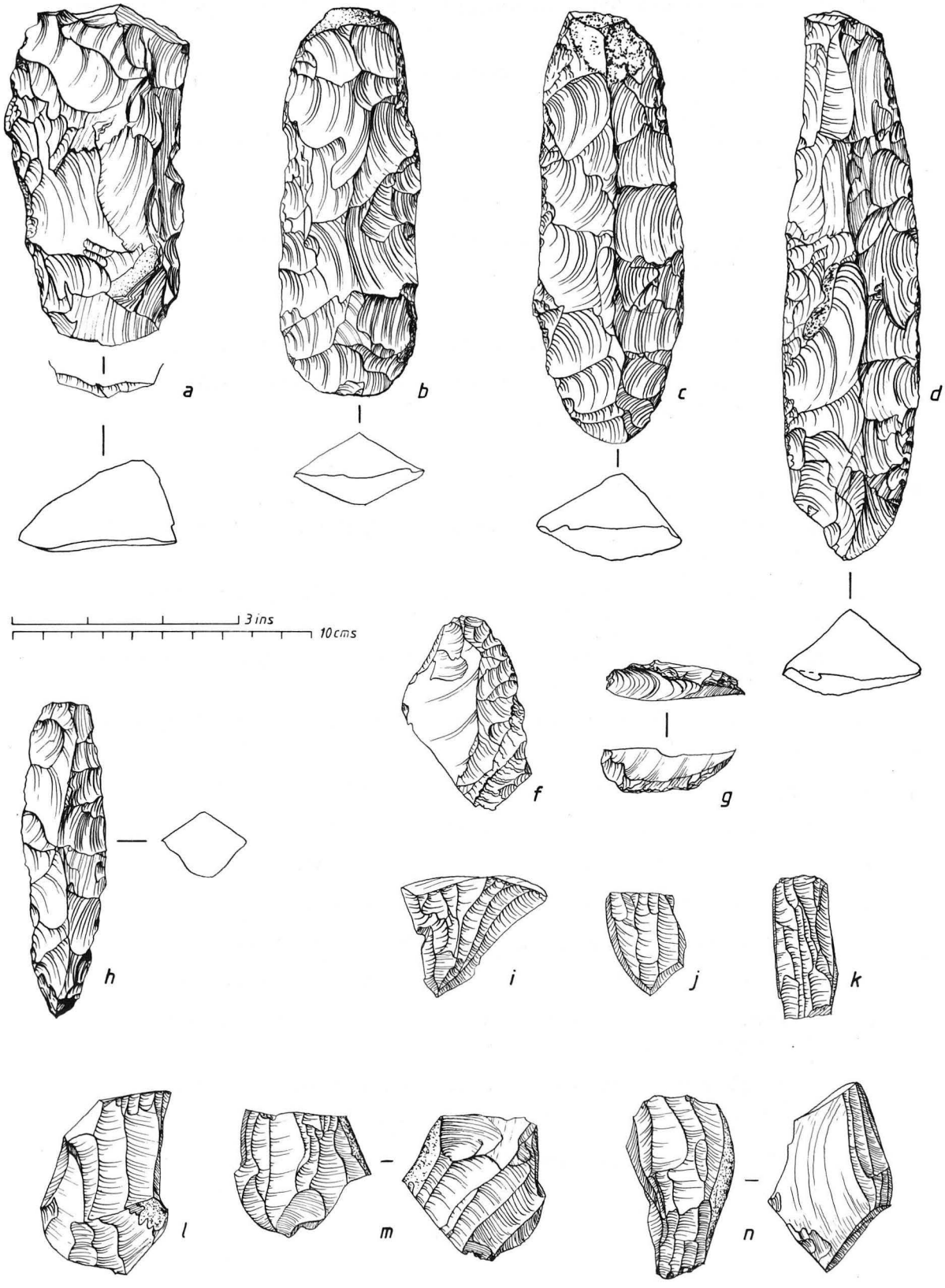

Fig. 10. Selected flint artefacts from surface collection. Scale 1:2.

x) Side scraper on flake with cortex; minimal retouch; dark grey flint; unpatinated.

y) Crude scraper with heavy secondary working; cortex on edge; dark grey flint; unpatinated.

z) Side scraper on flake; cortex on dorsal surface; shallow retouch; grey-brown flint; unpatinated.

aa) End scraper on blade. Cortex on dorsal surface; dark grey flint; unpatinated.

ab) Edge scraper on thick flake, dark grey flint; unpatinated.

ac) Small round scraper; steep edges; fine overlapping retouch; dark grey flint; unpatinated.

ad) End scraper on thick blade, dark grey flint; unpatinated.

ae) Scraper on side and lower edge of flake; dark grey flint; unpatinated.

af) Round scraper; inverse retouch at bulbar end; cortex on side; dark grey flint; unpatinated.

Description of flints in Fig. 10

a) Tranchet axe; steep sided; thick; banded light brown and cream flint; patina on lower face.

b) Tranchet axe; rhomboidal section; cortex on butt; mottled dark grey flint; white patina towards butt (Collection No. 6).

c) Tranchet axe; triangular section; cortex on butt; dark chocolate brown flint; unpatinated (Collection No. 38).

d) Axe or pick; point damaged; triangular section; pale grey flint; surface mottled reddish brown (Collection No. 3).

e) Vacat.

f) Flake from surface of axe; pale grey flint; unpatinated.

g) Axe sharpening flake; dark grey flint; unpatinated.

h) Pick, rhomboidal section; pale yellow-brown flint.

i) Prismatic single platform core; black flint; unpatinated.

j) Small single platform core; dark brown-black flint; unpatinated.

k) Parallel sided double platform core; cortex on reverse; dark grey flint; light patina.

l) Double platform core; dark grey flint; unpatinated.

m) Double platform core; dark grey flint; light patina.

n) Double platform core; cortex on side; dark grey flint; light patina.

V. RESULTS

In all, 237 artefacts and pot-boilers were found. The finest artefacts are illustrated (Fig. 8). The finds and their provenances are shown in Table 1. The excavated material was mainly produced on dark grey flint, though some pale grey and pale brown flint was present. All were mottled due to fossiliferous inclusions. The raw material for knapping was probably collected locally. Today dark grey flint is the principal stone of the plough-soil and in local stream beds. The surface collection of artefacts displays a wider range of flint types, some axes being mahogany brown, others pale yellow or orange, suggesting that larger nodules of flint, especially for axe production, were sought elsewhere. Patination did not serve as a guide to the antiquity of the artefacts as each layer contained flint in all stages of patination ranging from pale grey to milky white.

VI. CONCLUSIONS

The excavation clearly showed that a large quantity of material still remains in situ despite the amount that has been disturbed by the plough.

The excavated industry probably belongs to the earlier Mesolithic (8,400-6,700 b. c.): flakes, blades and the well-made (unstratified) microlith (Fig. 8) and notched flake (Fig. 8) were relatively large, yet there were none of the geometric microliths characteristic of later Mesolithic assemblages. However, the sample is very small and it may be unwise to be too categoric about the industries cultural affinities.

The large number of axes found on the surface might also suggest an earlier Mesolithic date. Similar industries are found at Kelling, Norfolk (Sainty 1924) and further afield at Thatcham, Berks. (Wymer 1962). The surface collection (Table 2), however, contains a large quantity of material that would fit a later context more acceptably. Small parallel-sided, double-platformed, cores may be later Mesolithic, while the polished axe fragment and leaf-shaped arrowheads are probably Neolithic, and the barbed and tanged arrowhead is a Beaker type. Many of the scrapers would be better dated to the Neolithic or Early Bronze Age than the Mesolithic. It seems probable therefore that the site at Micklehaugh Farm was used over a long period of time, and that the later deposits have been disturbed leaving only the early Mesolithic artefacts in situ. Unfortunately, as has been pointed out, the different phases represented cannot be distinguished by the degree of patination of the flint, although nearly all the scrapers are unpatinated. The distribution of finds from the surface collection may reflect the limits of prehistoric activity at the site. All parts of the farm have been cultivated in a uniform manner, and the search for artefacts has been carried out throughout the farm. The resulting concentrations of surface finds appear to reflect the quality of the soil. Mr. Clarke points out that the greatest concentration of worked flints is found on the lightest soil to the north of the present farm. The surrounding light medium soils to the north and south contain the majority of the remaining finds. The presence of many of the Mesolithic axes in this zone leads to the suggestion that interference with the forest, which presumably prevailed at that time, was restricted to these soils where the vegetation may have been thinner. Presumably the axes were lost during felling or lopping activities. Only two axes and one leaf- shaped arrowhead have been found on the heavy and variable soils to the west and south west of the farm, which during Mesolithic times may have supported a denser vegetational cover.

TABLE 1. THE EXCAVATED FINDS AND THEIR PROVENANCES

(a) Topsoil and base of topsoil (transects 1-6): number of finds.

Transect	Flakes	Segments	Shatter pieces	Microliths	Pot-boilers
Topsoil	5	3	25	1	15
1	4	3	-	-	6
2	7	1	-	-	6
3	-	-	-	-	-
4	5	-	-	-	3
5	1	-	-	-	1
6	7	1	-	-	-
TOTAL	29	8	25	1	32

(b) Subsoil (transects 7-12): small find numbers, or where small find numbers were not allocated, numbers of finds shown in brackets.

* = find illustrated in Fig. 8

Transect	Spall	Flake	Segment	Blade	Shatter pieces	Core	Scraper	Other	Pot-boilers (no. of pieces)
7	45	12, 13, 17, 24, 27	46	19, 29*	6	-	-	-	(2)
8	-	18, 30,* 31, 40	28*	47, 51	-	8* 42*	-	-	(20)
9	61	32, 33, 55, 58, 59, 60, 63, 64, (+ 1 unprov)	54, 65	-	-	-	-	-	(6)
10	-	34, 35, 36, 38, 50, 52, 57	41, 56	-	37, 39, 62	-	48*	49*	(18)
11	15, 20, 21	1, 2, 14, 43, 53 (+ 3 unprov)	3, 4, 5, 10 (+ 1 unprov)	-	-	-	-	-	(17)
12	11, 26	44 (+ 3 unprov)	16, 22	12 (+ 1 unprov)	9	-	-	-	-
TOTAL	7	37	13	6	5	2	1	1	(63)

3 blades (66*, 68, 77) and pot-boilers from c. 60 cm below ground level.
Small find numbers 7, 23 and 25 were not allocated.

TABLE 2. INVENTORY OF SURFACE FINDS TO 31 JANUARY 1976

Double-platformed cores	56
Single-platformed cores	57
Irregular cores	90
Flakes	3019
Blades	404
Broken blades and segments	302
Pointed blades	27
Axes	24
Retouched pieces (see below)	289
TOTAL	4268

List of retouched pieces among surface finds

Notched flakes	19
Borers	9
Flakes with retouch	51
Broken blades with retouch	4
Retouched blades	17
Serrated blades	3
Serrated blades (broken)	1
Obliquely blunted blades	2
Flake with shallow surface flaking	1
Graver	1
Notched blade	1
Obliquely pointed blade	1
Pressure-flaked pieces	5
'Fabricators'	8
Chopping tool	1
? Axe fragments	2
Shatter pieces	2
Rejuvenators/axe sharpening flakes	6
Microliths:	
backed blades	12
segments	11
blade unretouched	1
obliquely blunted	2
Barbed and tanged arrowhead	1
Leaf-shaped arrowhead	1
Polished axe fragment	1
Quartzite mace-head fragment	1
Scrapers:	(124)
thick, crude	8
steep, circular, many with cortex	42
small (less than 3 cm), steep with cortex	16
end, on flake with cortex, fine retouch	7
with little coarse retouch, many with cortex	9
with shallow retouch and cortex	6
with much shallow overlapping retouch, one with cortex	6
on end of blade, with cortex	4
on end of blade, without cortex	8
with minimal retouch on flakes, all with cortex	16
double-ended	2

October 1977

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1. Accession no. NCM.122.977.

2. 1968: 35 cm depth, east to west. 1971: 45 cm depth, north to south.

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A Beaker Burial on Ringstead Downs, Old Hunstanton

by Ian Kinnes

I. SUMMARY

In July 1972 a beaker and a female skeleton were discovered during small-scale sand extraction on Ringstead Downs within the parish of Old Hunstanton. The circumstances of discovery did not allow proper recording and, indeed, an association between the two can only be presumed.

II. ACKNOWLEDGEMENTS

The recovery of the material was due to the vigilance of the machine operator Mr. R. C. Batterbee. I am grateful to Tony Gregory for a drawing and additional notes on the beaker, and to Dr. Calvin Wells for his report on the human remains. The find was brought to my attention by Mrs. Sophia Mottram, the curator of King's Lynn Museum, and my thanks are due to both her and Mrs. Elizabeth James for their assistance with museum documentation. The material was donated to King's Lynn Museum by the finder [1].

III. DESCRIPTION

The site, number 12736, is at c. 20 m O. D. on a low crest between two slight valleys at TF 6960 4025. The subsoil is a degraded chalk with drift mantling.

THE BEAKER (Fig. 11)

The vessel is distorted, perhaps by soil pressure, and the illustrated section must be qualified:

Diameters	rim	97-98 mm
	waist	80-82 mm
	belly	118-123 mm
	base	74-76 mm
Overall height		130-134 mm

The body is biconical with slightly convex walls and a marked carination. The neck is a straight-sided flaring funnel and the simple rim has a slight external bevel. The base is slightly concave.

The decoration is zonal with three major registers at neck upper and lower body. A reserved band emphasises the greatest diameter at the belly carination. The zones are defined by paired lines in comb-stamping, and occupied by filled triangles or thread wound 'maggots' in alternate horizontal and vertical arrangement. A mirror effect has been contrived about the reserved band. At least two combs have been used, the lines at rim and base of neck employing a tool with larger closer-set teeth.

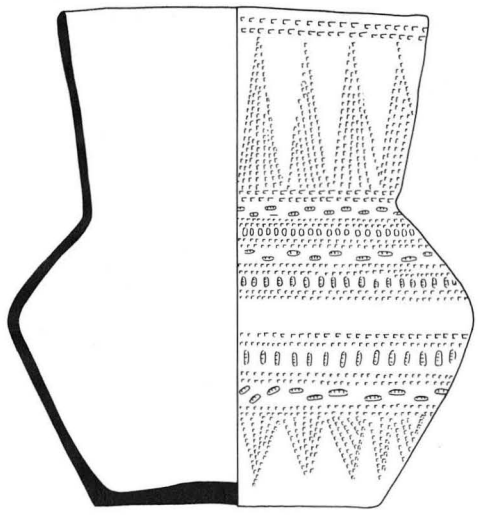

Fig.1. The Ringstead Downs Beaker.

Fig. 11. Beaker from Ringstead Downs, Old Hunstanton. Scale 1:2.

The fabric is relatively soft, with no visible filler. The core is dark grey, the exterior surface dark orange/buff, and the interior buff. Traces of a white, apparently calcareous, substance, perhaps from the grave matrix, adhere to the interior.

The neck to body contrast of the profile and the contracted zones and filled triangles of the decorative scheme indicate an attribution to the developed Beaker series. In Clarke's classification (1970) the combination of his Motif Group 4, Style e and Shape 7 points to developed Southern groups. An alternative proposal (Lanting and van der Waals 1972) gives a perhaps more plausible context in Steps 4-5 of the East Anglian/Kentish focus area. In either case the stylistic and chronological position lies clearly with the increasing regionalisation of Beaker groups in the second quarter of the second millennium bc. The details of the decorative combination have no precise match, but are individually unexceptionable. More striking is the form, where belly diameter so far exceeds that of rim and waist. No other British Beaker reproduces this and the form seems equally lacking on the Continent. Although this variation might be regarded as predictable within the known Beaker range, the necked jar profile is more readily acceptable in the Vase style of the emergent Food Vessel class. A scatter of Beaker sherds of comparable style occurred in a domestic context on Redgate Hill, some 1.8 km to the west on the same chalk ridge (1971 excavations: Kinnes forthcoming). It is tempting to link settlement and burial here but the present state of knowledge of the area precludes any security in such a suggestion. A somewhat earlier Beaker of W/MR or Step 2 style was found some 3 km to the south at Heacham (TF 674 366; Clarke no. 547), but the context is uncertain. Other than flint scatters, evidence for early occupation in such a favourable area is surprisingly sparse, but it is notable that the existing finds have all been accidental discoveries.

HUMAN REMAINS
by Calvin Wells

The bones are of a young adult female and are in extremely poor condition. As well as being defective and fragmented, all surviving parts are severely pitted and irregular as a result of burial. The following fragments are present: a broken calva (partly reconstructible), some small fragments of cranial base and face, and a broken, defective mandible; post-cranial elements include parts of L. humeral shaft, fragments of L. ulna and radius, L. and R. femoral shafts, splinters of tibial shafts, and a few small pieces of pelvis and vertebrae. The skull, insofar as it can be reconstructed, is a blunt ovoid in norma verticalis. It is slightly asymmetrical, apparently from warping by soil pressure. The frontal bone, which is full and rather bulbous, rises steeply from small brow ridges which are almost limited to the glabellary region and do not extend laterally to the supra-orbital foramina. It passes in a smooth even curve to the vertex which lay, perhaps, fairly far back. (This is uncertain since the skull cannot be orientated in the standard Frankfurt plane.) Thereafter, the sagittal contour slopes somewhat flatly to the lambda point. The occiput is curved rather sharply and projects in a low, but definite, tuber occipitale. The nuchal muscle markings have been blurred by soil erosion but seem, as elsewhere on this skeleton, to have been only weakly developed. The mastoid processes

are short and blunt. The superior orbital margins are sharp. The orbits appear to have been high, squarish and set somewhat obliquely. The mandible was undoubtedly small and gracile; the chin somewhat pointed; the gonial angles not everted. Owing to the defective state of the jaws the dental condition is only partly discernible, as follows:

$$R\ \frac{8.650???\ |\ ????????}{87???000\ |\ 0000?.78}\ L$$

Caries is absent on all surviving teeth. Attrition of the biting surface is severe. The enamel is removed and the dentine exposed over the whole occlusal area which is slightly concave and shows evidence of secondary dentine. Tartar is negligible on these teeth.

A few cranial measurements were taken but the condition of the bones makes several of them extremely uncertain. With varying degrees of reliability, the following may be noted:

L	(max. length)		174.3	S'1	(frontal chord)		101.4
B	(max. parietal breadth)		140.2	S'2	(parietal chord)		118.0
B'	(min. frontal breadth)		99.8	S'3	(occipital chord)		85.8
H'	(basion-bregma height)	??	132.0	01	(R. orbital breadth)	??	41.0
S	(nasion-opisthion arc)		361.5	02	(R. orbital height)	??	34.9
S1	(frontal arc)		121.3		Cranial index		80.3
S2	(parietal arc)		132.7		Height-length index	??	75.7
S3	(occipital arc)		107.5		Orbital index	???	85.1

This indicates a fairly small brachycranial skull with a hypsicranial (high) vault and hypsiconch (high) orbits.

Of the post-cranial fragments, little can be said owing to their bad condition. The woman had a small and lightly-built skeleton. Subject to great qualification it seems probable that the L. humerus was no more than 255.0 mm long, while the femora were, perhaps, close to 360.0 mm. These measurements would correspond to a stature of about 1436 mm (4ft $8\frac{1}{2}$in). The antero-posterior and transverse diameters of the femoral shafts and the L. tibia are obtainable.

Fe D1 (antero-posterior)	L.	22.1	R.	22.4
Fe D2 (transverse)		34.1		34.2
Meric index		64.8		65.5
Ti D1 (antero-posterior)		33.4		-
Ti D2 (transverse)		22.3		-
Cnemic index		66.7		-

The femoral or Meric index of shaft flattening is hyperplatymeric bilaterally. The tibia is mesocnemic. Much uncertainty still surrounds the interpretation of these features and will not be discussed here. Platymeria tends to be associated with earlier British populations rather than medieval and later. Anomalies and pathological conditions are virtually lacking. The cranial sutures are mostly open but early endocranial fusion is present in much of the sagittal suture and also in the coronal to some slight extent. The lambdoid suture is wholly unfused and has at least two wormian bones in its left half, and three wormians in its right half. No other abnormalities were detectable.

This small and slender woman with a short, broad and highish head could fit into the normal range of Beaker period skeletons. Her teeth show heavy attrition. If the open cranial sutures can be relied upon, she died when a young adult of 30 or less and the heavy dental wear must indicate a tough, coarse or gritty diet. The absence of caries suggests that the diet lacked sugar or fine-milled flour, and the absence of tartar perhaps suggests some elementary form of oral hygiene.

August 1977

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Wayford Bridge, Smallburgh

by Edwin Rose

I. SUMMARY

Wayford Bridge is an ancient crossing of the River Ant which may well have been on the line of the Roman road that crosses Norfolk from east to west. Two fords have been traced in the past, and recent roadworks have uncovered a causeway on a completely new alignment, together with a wooden structure dated by radiocarbon to the late second or early third centuries A. D.

II. ACKNOWLEDGEMENTS

Mr. G. H. Smith, formerly of the Norfolk County Council's Highways Department deserves the warmest thanks for his continual observation of the site during the roadworks; he was responsible for the preservation of the revealed features until they had been seen by the writer. Thanks are also due to Peter Lambley of Norwich Castle Museum for identifying the wood, and to Nick Adams for drawing the plans.

III. DESCRIPTION AND DISCUSSION

The Roman road, site 2796, which runs eastwards across Norfolk from the Fens appears nowadays to come to a sudden halt in Smallburgh parish. The straight modern road known as Anchor Street which follows the course turns northward at TG 3219 2404, and though a cropmark has been seen continuing the line, a section cut across this by the Norfolk Research Committee in 1951 revealed no evidence. There have been unconfirmed local reports of the road being evident on Broad Farm in the area between Anchor Street and Low Street, but to all intents and purposes the course east of this point was unknown.

It had long been speculated whether there was a crossing point of the Rivet Ant at the modern Wayford Bridge (Figs. 12 and 13) [1]. This indeed was the site of a ford of some antiquity, as evidenced by the name: the first element may be the Old English (ge)waed, meaning a 'ford', but this is an unlikely combination with '-ford', also an Old English term, and more probably the etymology is the same as in the case of Wayford, Somerset, which is interpreted by Ekwall (1946) as 'the ford on the wai' or made road. This could therefore be an important piece of evidence. However it should be noted that nineteenth century maps give the spelling as 'Weyford'; if this is the original form it may indicate that 'Wey', a common British river name, was an old name for the River Ant; the present name is a comparatively recent back-formation from Antingham. There is no evidence for the date of construction of the first bridge; it is marked on Faden's map of 1797, the earliest available.

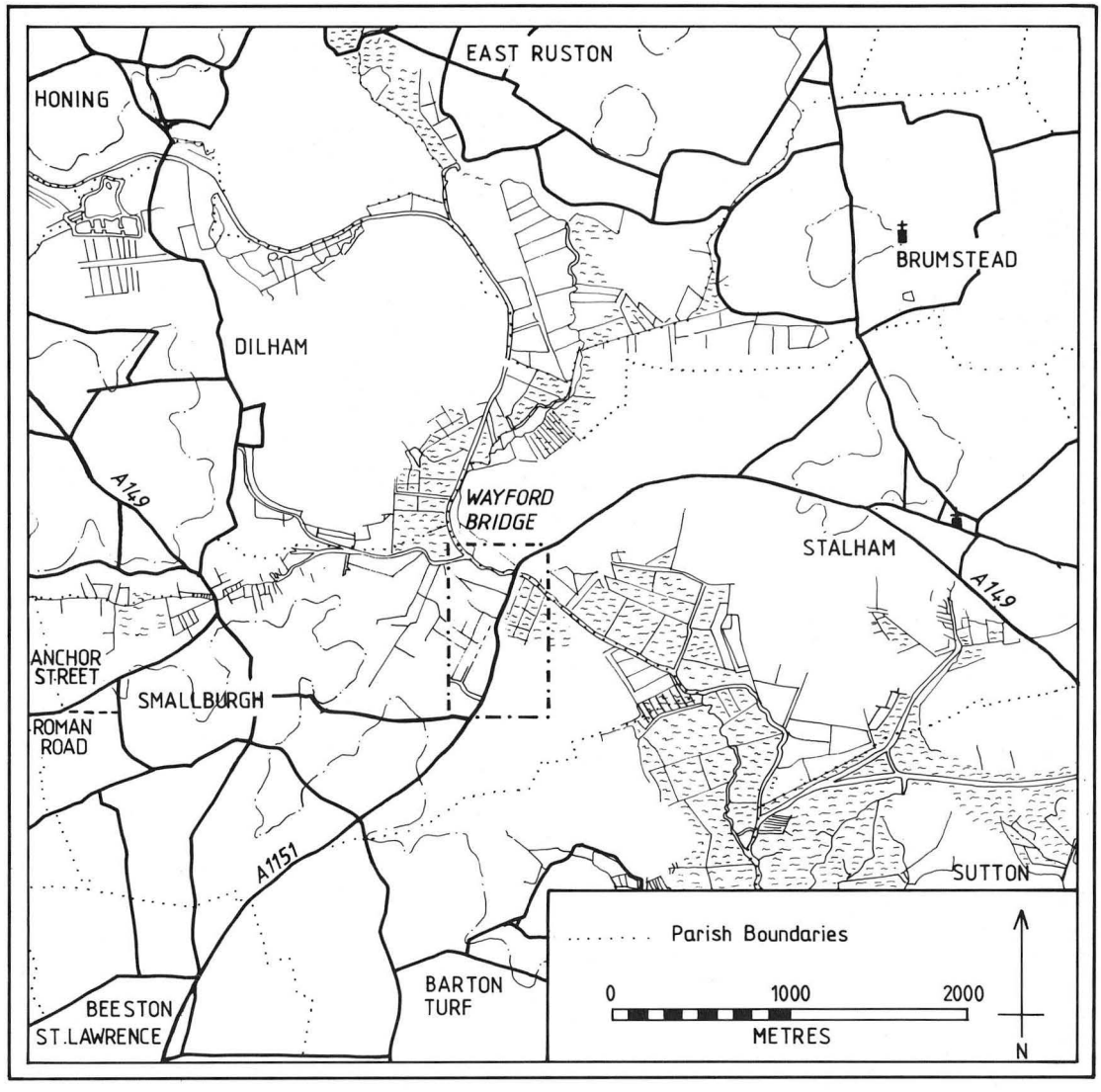

Fig. 12. The position of Wayford Bridge in relation to the surrounding area.

The identification of Wayford with the Roman crossing place was encouraged in the nineteenth century by the Ordnance Survey's designation of a neighbouring hill in Stalham parish as a 'Roman Camp'. This was based upon a horseshoe shaped earthwork, shown on the 1836 first edition of the one inch map as 'Devil's Ditch', enclosing a natural knoll, but even before this was destroyed by quarrying round about 1890, many people were of the opinion that it was a natural feature and not a manmade earthwork. If it was artificial the date cannot be ascertained now; but a beaker was found by it in 1849 (Abercromby 1912, fig. 81) and many Neolithic and Bronze Age finds have come from Wayford Wood, which included the hill.

Green (1961, 326) suggested that the road had continued eastwards to Low Street, where it had turned sharply northwards towards the bridge. He based this theory in part upon a short length of track beginning at TG 3450 2420 and continuing as a footpath along a straight field boundary, where he believed he could see the agger. The 1840 Tithe Apportionment marks this boundary, though not the track, and names the fields on either side as 'allotments'. This suggests that it is probably an enclosure boundary, though this does not of course rule out an earlier feature having been used. Probing under the bridge revealed a stony strip indicating a ford, and 18.2 m to the north another was found, this time running due north (i.e. obliquely across the river). It was here, site 8280, that a fifteenth century bronze stirrup had been found which has sometimes wrongly been referred to as Roman [2].

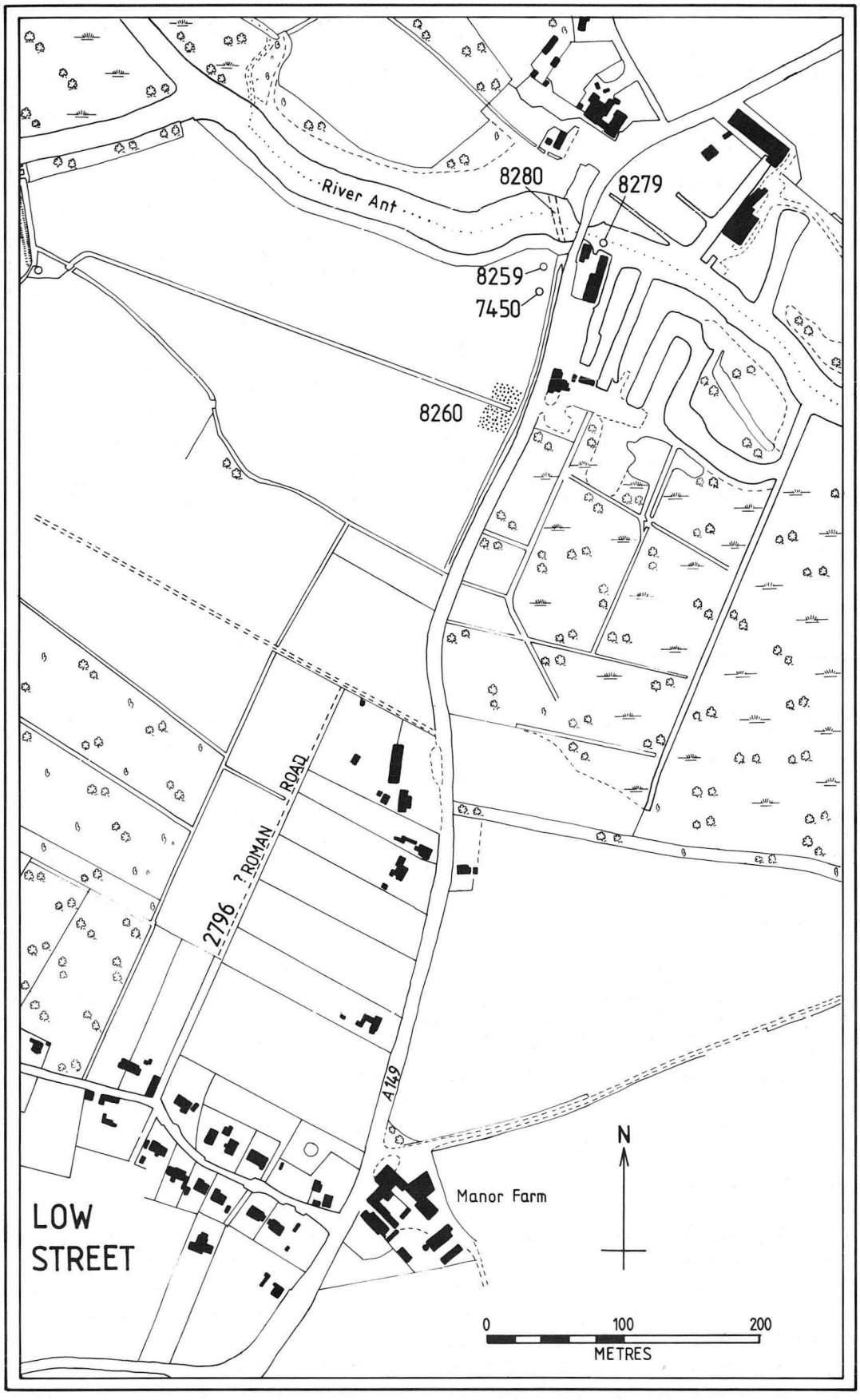

Fig. 13. Wayford Bridge, showing sites referred to in the text. Site 8283 is not marked as its precise location is not known; likewise site 8310 is only known to be within a quarter of a mile downstream of the bridge.

Borings across the valley north of the bridge in 1937 by Rainbird Clarke indicated a flat-bottomed valley with peat to an average depth of 9 m. Jennings (1952, 39, fig. 18) gives the peat sequence as a top layer of sedge peat resting on a mixed layer over humidified brushwood peat containing alder wood and birch twigs.

When at the end of 1975 the Norfolk County Council Highways Department began the construction of a new bridge and approach road, it was obvious that this was an important case for observation. Besides the above-mentioned finds, human bones have been found in the river at various times at sites 8279 and 8283; a dug-out canoe was dredged up at site 8310 in 1927 and later identified as medieval because of 'drilled holes' in the woodwork (Norwich Castle Museum records). The latter two sites have only vague locations and thus are not marked on Fig. 13.

The method of construction employed was to 'float' the road on a raft over the marsh, and then to leave it for a couple of years so that subsidence could be checked. Apart from test holes, which incidentally confirmed the depth of peat as 6 to 9 m, the only deep excavation was when the footings for the bridge were laid.

It was therefore not until the 14th January 1976 that the site was visited by the writer together with Peter Lawrence, geologist in the Norfolk Museums Service. This was to see the first large excavation made to the base of the peat at TG 3479 2480, site 7450. The peat was in an extremely liquid condition, and no trace of a road or any other archaeological feature was seen.

On the 18th February a telephone call was received asking for immediate assistance. It was stated that the mechanical excavator digging to 9 m about 12 m from the end of the present bridge (TG 3479 2481: site 8259) had picked up what appeared to be a wooden boat. It had left a 'boat-shaped' impression in the peat for a few seconds before the fluid peat had destroyed it; the 'boat' had contained a silt different in colour from the peat, but had disintegrated in the jaws of the machine before it could be lowered safely. The remaining timbers of the 'boat' were in a pile nearby. They were by this time very fragmentary, only one surviving to any degree of completeness, and this had been roughly shaped to a point. Portions of others resembled planks. Samples were taken to Norwich Castle Museum where the wood was identified as oak. Tony Gregory, Assistant Keeper of Archaeology, was of the opinion that the timbers were too rough and heavy to have come from a boat. There was no trace of nails or other joining material. The findspot of the 'boat' had been left by the workmen as a shelf in the side of the pit, and it proved to be alongside the remains of a causeway. However the fluid nature of the peat, continually falling away into the pit, made any detailed measurements or photographs impossible, and only a brief survey could be made. One side of the causeway was revealed; its top was approximately 1 m below ground level and was composed of large flint cobbles. Below this was a white peaty material entirely different from the surrounding peat [3]. At intervals there were wooden posts rising to just below the cobbled surface, and these appeared to be joined to horizontal wooden bars running through the white material, presumably to join similar posts on the far side. A sizeable tree stump was also revealed, with large roots penetrating the base of the causeway. The findspot of the 'boat' was amongst these roots, about 1 m below the surface of the causeway and 2 m below modern surface level. Fragments of a post and a root were retrieved; the former was identified as oak and the latter as alder or willow.

The shaped timber from the 'boat' was submitted to Harwell for a radiocarbon date, and the result obtained was AD 210 $\pm$ 80 (HAR 1719).

The unusual aspect of the causeway was that it was running south west to north east towards the foot of the present bridge, but not in alignment with the ford found by Green, and at right angles with that discovered upstream. It must have continued on its south-westerly course, otherwise it would have appeared on site 7450.

During the visit an iron spearhead was shown to the writer which was said to have been found in a test boring at a depth of 20 ft in peat, further south in the area of TG 347 247, site 8260. It measures 26 cm long and 2.5 cm across the widest part of the blade, which has a double bevel and a slight moulding at the base. The socket contained fragments of wood. Miss Vera Evison has identified it as being of Late Saxon date and of Anglo-Danish type. It was presented to Norwich Museum [4]. Spoilheaps from the same hole, but at an unknown depth, later produced human and animal bones, and seventeenth century potsherds.

While this article was in course of preparation, a rim sherd of a Neolithic carinated bowl was brought to Norwich Castle Museum for identification. It had apparently also been found on site 8259, but the details are unknown.

Looking at these findings in perspective, therefore, it cannot be said that the causeway discovered is undoubtedly the Roman road. What can be said is that it is on an entirely different alignment from either of the previously known fords, and that in association with it was found an early third century wooden structure. These details suggest to the writer that its identification as Roman is at least probable.

December 1977

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1. See for example Green 1961.
2. Eastern Daily Press 15th May 1905.
3. Samples of the peat were taken and are at Norwich Castle Museum awaiting analysis.
4. Accession no. 111.976.

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Excavation of a Roman Road at Brisley

by Peter Wade-Martins

The Roman road from Billingford to Toftrees was discovered in 1976, and a description of the route by the writer was published in 1977. The only place along its course where an agger survives is on Brisley Common. An excavation across this in November 1976 revealed a badly disturbed gravel road surface and two flanking ditches. There was no dating evidence from the road or from the ditches. The excavation was carried out with the help of members of the Norfolk Archaeological Rescue Group; permission for the excavation was kindly provided by the Lord of the Manor of Brisley, Canon Dodson.

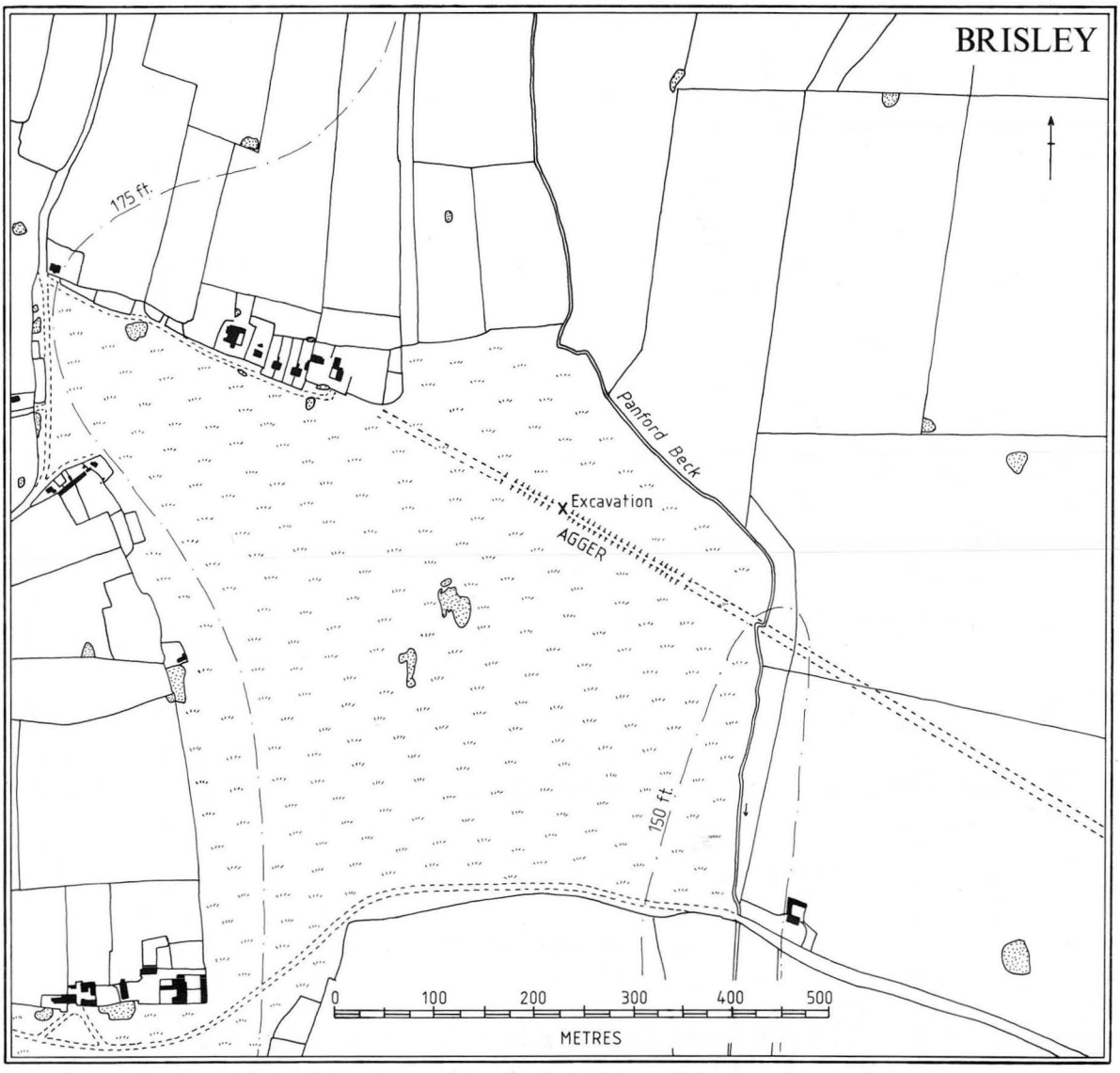

Fig. 14. Location map showing the line of the road, the agger and the site of the excavation (the course of the road is described in Wade-Martins 1977).

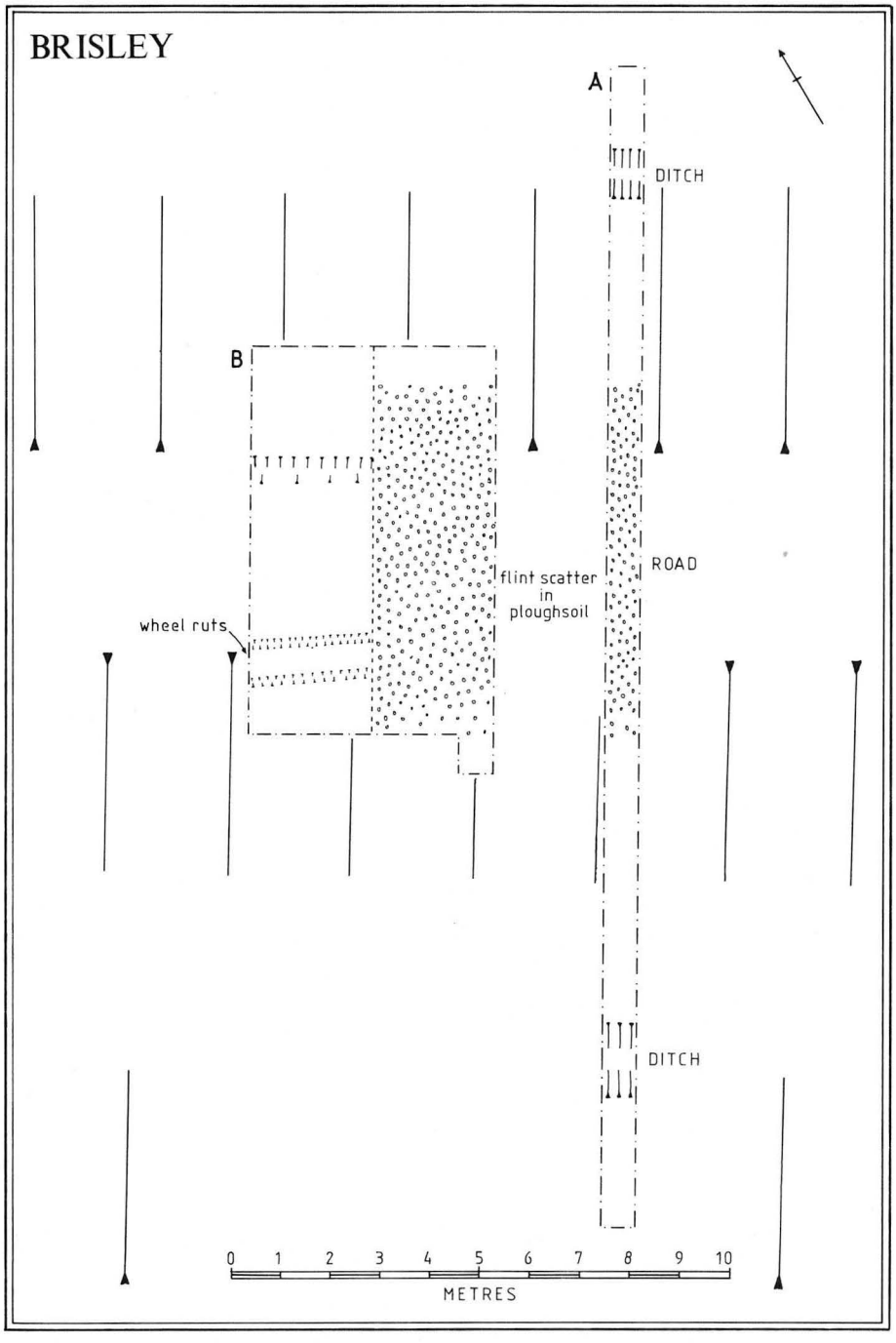

Fig. 15. Excavation plan.

The surviving portion of the agger runs north west to south east across the common (Fig. 14). It is just over 200 m long and is about 50 cm high and 11 m wide. To the east the road appears to cross Panford Beck at the side of the common just where the stream makes a sharp turn.

Trench A was a long narrow trench machine-dug to obtain a section through the agger and the ground to either side (Fig. 15). Trench B was dug by hand on the top of the agger to examine closely any traces of a road surface. Unfortunately this area had been deep ploughed during the second world war: the plough grooves can be seen in Fig. 16. It appears that the road surface was only disturbed in depth once; thereafter cultivation was superficial. Plate I shows the heavy concentration of flints in the topsoil under the turf. At the bottom of the ploughsoil traces of clean sandy gravel between the plough grooves were found; these areas of clean gravel appeared to represent undisturbed road make-up.

Photo: Graham Pooley ST28

Plate I. Brisley: view from the south west showing the upper levels of the excavation with the concentration of flints representing the Roman road in the disturbed topsoil of the agger.

This rested directly on the natural clay, and there was no sign of an old topsoil between the two. The two ditches were filled with mottled grey, silty clay.

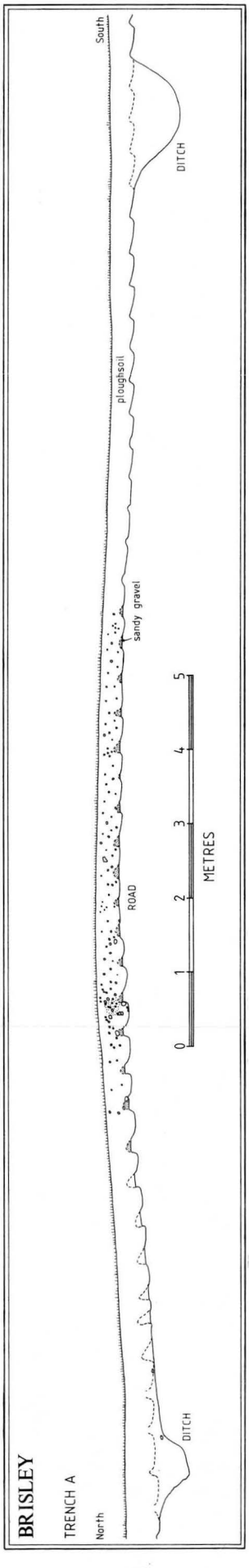

Fig. 16. Section of agger and flanking ditches.

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A Saxo-Norman Pottery Kiln at Bircham

by Andrew Rogerson and Nick Adams

I. SUMMARY

A damaged Saxo-Norman updraught pottery kiln with two internal arches, but no surviving flue arch, was excavated in advance of housing development at site 6062. A small amount of associated Thetford-type ware consisted mainly of cooking pots with sagging bases and rouletted decoration, but straight sided bowls were also represented. The kiln overlay a possible ditch containing Thetford-type ware. In the immediate vicinity there were no other traces of pottery production. Close-by two features produced Ipswich-type ware.

II. ACKNOWLEDGEMENTS

The authors wish to thank the landowners, Messrs. Bullen, Burrows, Carles and Maiden for their kind co-operation, permission to excavate and record, and donation of the finds to the Norfolk Museums Service [1].

III. INTRODUCTION

(Fig. 17)

The parish of Bircham lies within the 'Good Sands' region of north west Norfolk. The drift of boulder clay, and the subsoil encountered in the excavation was glacial light sandy gravel. The chalk outcrops c. 2 km to the west. The parish comprises the three former parishes, all Domesday vills, of Great Bircham, Bircham Tofts, and Bircham Newton. The erection of four bungalows to the south of the B1155 in the village of Great Bircham began in 1975. They lie close to the northern edge of a roughly oval area bounded on the north by the road, on the south by a lane, on the east by the parish church and rectory, and on the west by the junction of road and lane. The Saxo-Norman kiln was uncovered by Mr. R. J. Carles during the hand excavation of a foundation trench for the east wall of his bungalow. It was recognised as a pottery kiln by John Smallwood, who informed the Unit. Excavation by the authors took place over three days in October 1975. Examination of builder's trenches, surface collection of pottery and the excavation of two Middle Saxon features were also conducted during October by John Smallwood with the help of members of the West Norfolk and King's Lynn Archaeological Society and students of King Edward VII School, King's Lynn.

IV. DESCRIPTION OF EXCAVATION

SAXO-NORMAN KILN (Figs. 17-9)

At the initial discovery, the western end of the oven pit and its contents (12) were almost entirely removed, sifted through, and replaced. Thus a shallow feature cut into

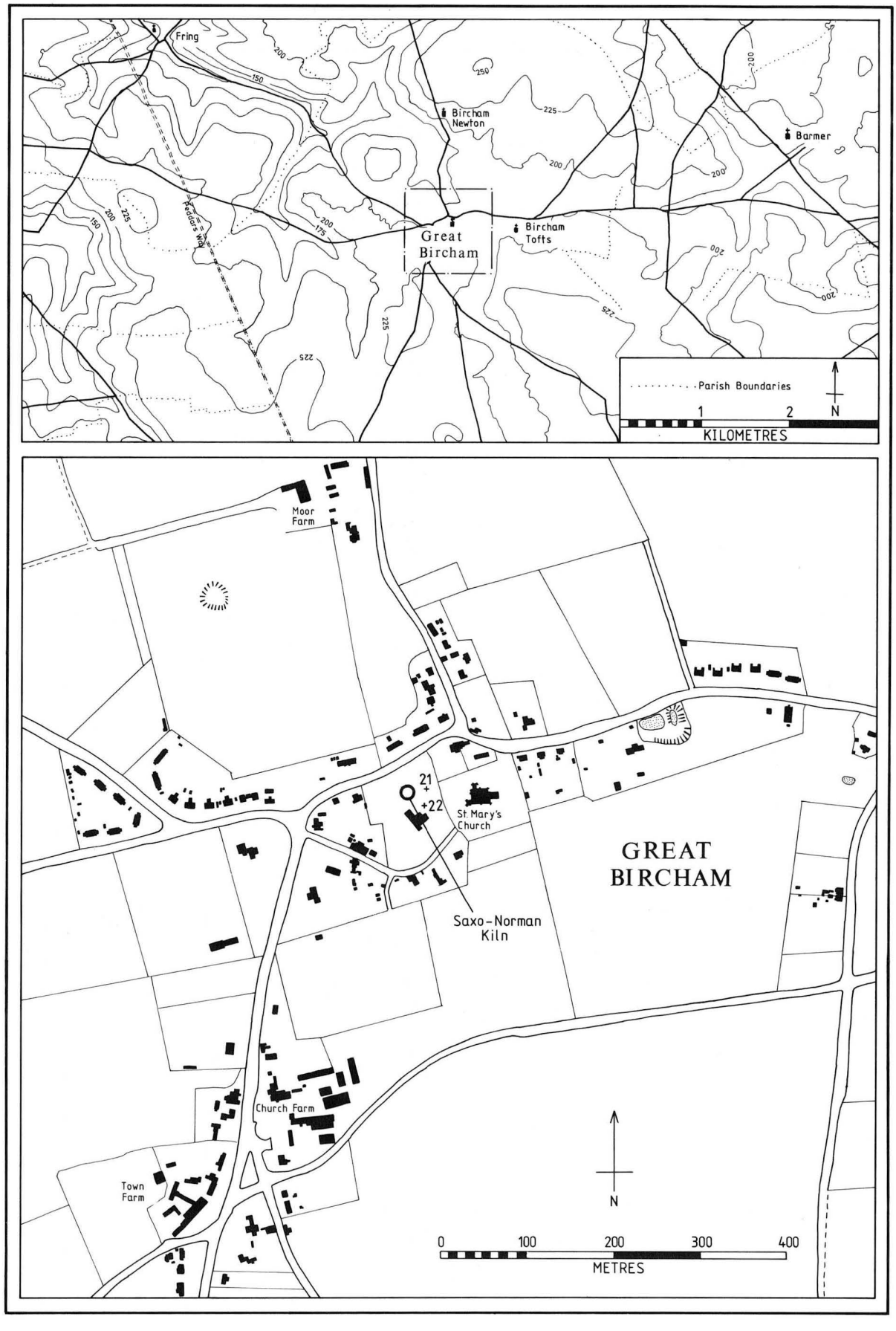

Fig. 17. Location maps.

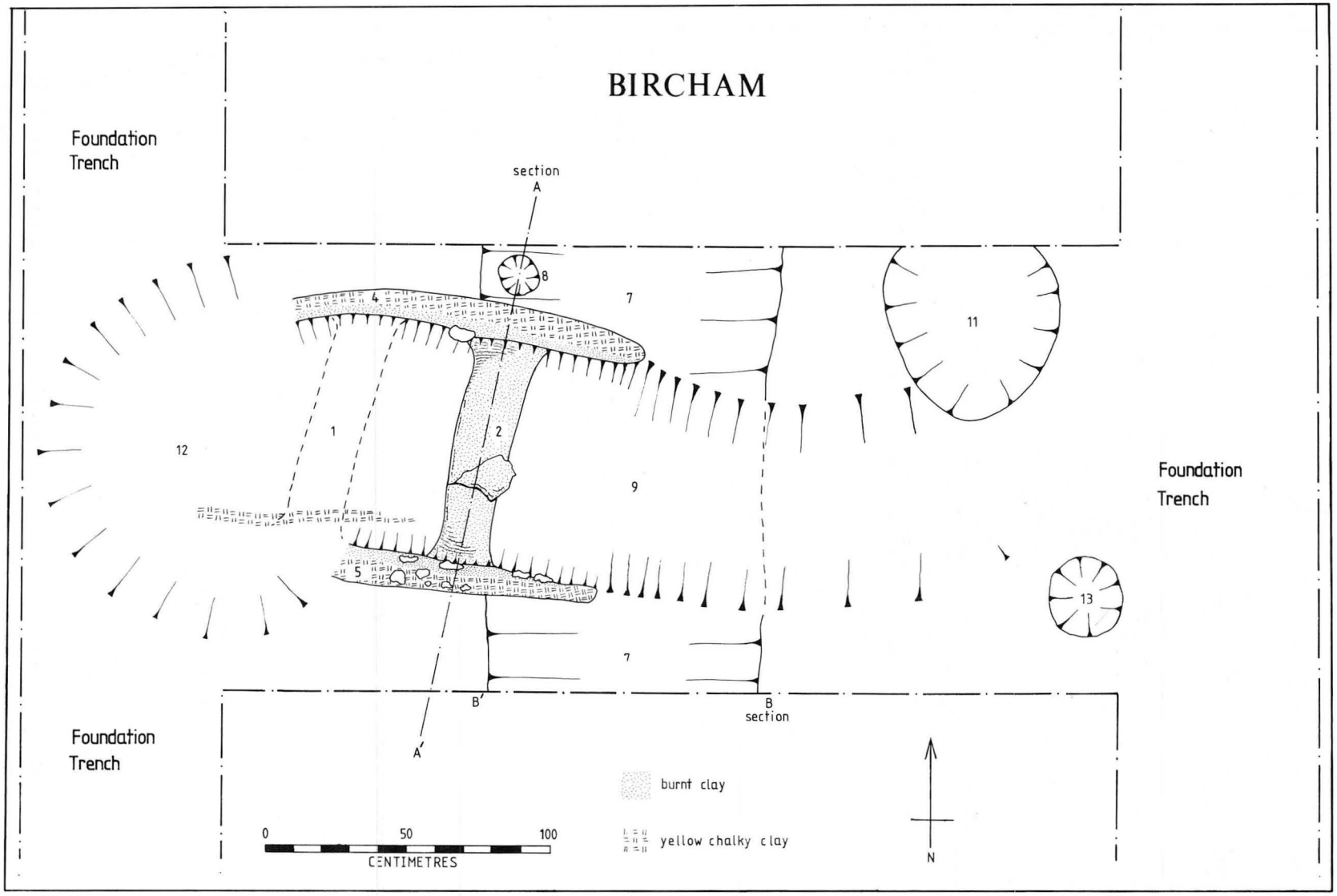

Fig. 18. Plan of kiln excavation.

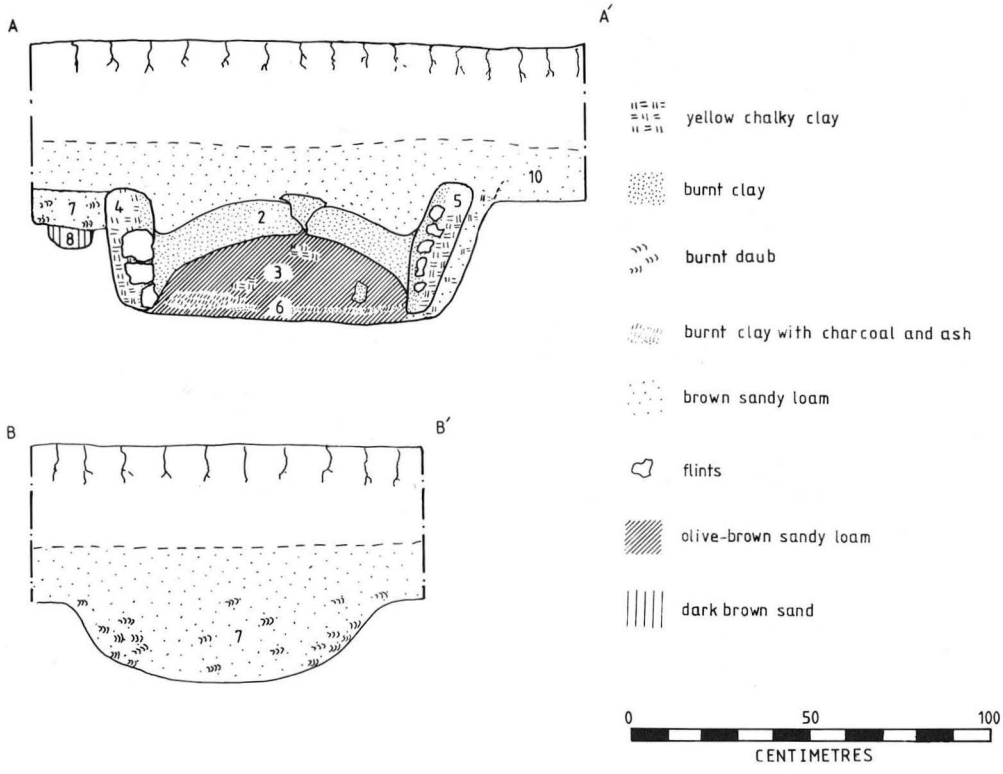

Fig. 19. Sections.

the natural gravel and filled with burnt and unburnt clay, ash, and modern topsoil was created. This disturbance extended eastwards into the oven pit past the western arch (1), which had been entirely removed, and reached as far as the eastern arch (2). The original extent of the oven pit could be reconstructed from its absence in the west face of the foundation trench, from the shape of the modern disturbance, and from the surviving lower parts of the clay lining.

Both arches were intact when first found, although 2 was broken or cracked at the centre (Section A-A [1], Fig. 19). Each consisted of burnt clay within a hard grey skin. The core of 2 was red, while 1 was grey and much harder. Each was supported by three hazel withies [2] passing through its centre. These showed partly as voids and partly as surviving charcoal. The outer surfaces carried numerous parallel marks, probably created by the smearing of fingers during construction. Either end merged into the north and south walls (4 and 5).

These walls formed the lining of the oven pit and were formed of chalky clay. Internally they were burnt hard red, but were unburnt and yellow on the outside. A narrow gap between the outside of the south wall and the edge of the insertion pit cut into natural gravel was filled with brown sandy loam and small lumps of unburnt clay. Flint pebbles were incorporated within the walls throughout and concentrated close to the arches. No trace of a flue arch was noted but it was clear that the inner faces of the eastern ends of the walls were noticeably less burnt than further to the west. So it is possible that such an arch had been removed. The floor of the oven pit consisted of burnt natural gravel. At the western end over the gravel were localised patches of burnt red clay mixed with charcoal; none were more than 5 mm thick. A mixture of charcoal, ash and sandy loam (6) extended over the whole of the floor and was continuous with the fill of the stoke pit (9). Above 6 the main fill of the oven pit consisted of brown sandy loam with a little charcoal and numerous lumps of burnt and unburnt clay (3). The stoke pit (9) had steep sides but to the east it gradually shallowed out and became lost in the

topsoil. Its floor was continuous with that of the oven pit. It is likely that the greater part of the fills of both the stoke and oven pit were deposited after the kiln had ceased to function.

The oven pit cut a linear feature (7) filled with brown sandy loam and burnt wattle-impressed daub (Section B-B [1], Fig. 19). It ran north to south and may have been a ditch. Its fill was indistinguishable from a layer (10) which lay between the natural and the top-soil. A post hole (8) filled with loose dark brown sandy loam was sealed by the fill of the linear feature 7. Two other features, a small pit or post hole (11) and a post hole (13), cut layer 10 and natural. Feature 11 seemed to be cut by the stoke pit 9.

The topsoil was a dark sandy loam with flecks of chalk and was c. 30 cm thick. Over the kiln it contained no burnt or unburnt clay and no pottery except for a few post-medieval sherds. At the base of the topsoil two shallow linear features filled with dark brown sandy loam and running east to west cut the top of layer 10. These were probably plough-scars. A search of the builder's spoil heaps and surrounding foundation trenches produced no further evidence of pottery production.

MIDDLE SAXON FEATURES (Fig. 17)
by John Smallwood

Ditch 21 In the early stages of the manual excavation of a soakaway it became clear that a substantial archaeological feature was being disturbed. The excavation was extended to obtain a reasonably complete section across the feature which was probably a ditch running north to south. The base lay 2. 13 m below the present ground surface. The primary fill, light brown loamy gravel, was sealed beneath a main fill of brown sandy loam with gravel. This produced two iron objects (Fig. 20, Nos. 2 and 3), pottery (Fig. 23, Nos. 19-22), occasional pieces of slag, lumps of yellow clay, animal bones, and oyster shells. Topsoil over the ditch which was c. 50 cm thick, contained close to the base a fragment of an early Saxon square headed brooch (Fig. 20, No. 1).

Feature 22 This feature was noted during the excavation of another soakaway. Only one edge was visible, and a small amount of fill, brown sandy loam with gravel, was excavated. The feature was cut with a gently sloping edge at least 30 cm into the natural gravel. Finds included pottery (Fig. 23, No. 23), fragments of Rhineland lava, animal bones, and oyster shells.

V. THE ARTEFACTS

OBJECT OF COPPER ALLOY

Fig. 20, No. 1 Fragment of head-plate of square headed brooch; Leeds (1949) Group A4. Interior panel with zoomorphic decoration surrounded on three sides by three ridges; central ridge picked out in dots; fragment of curved ridge with dotted decoration taking up lower side; punched dots, triangles, and V's on outer borders between two surviving lozenge-shaped lobes. This piece is worn and bent, and there is no trace of gilding. There is little significance in the survival of part of an early Saxon object in a Middle Saxon (Wade-Martins 1970, 67, fig. 19. E) or later context (Hurst 1963, 145-6, fig. 4, no. 3). No other early Saxon finds are recorded in Bircham parish.
Found in topsoil over Ditch 21.

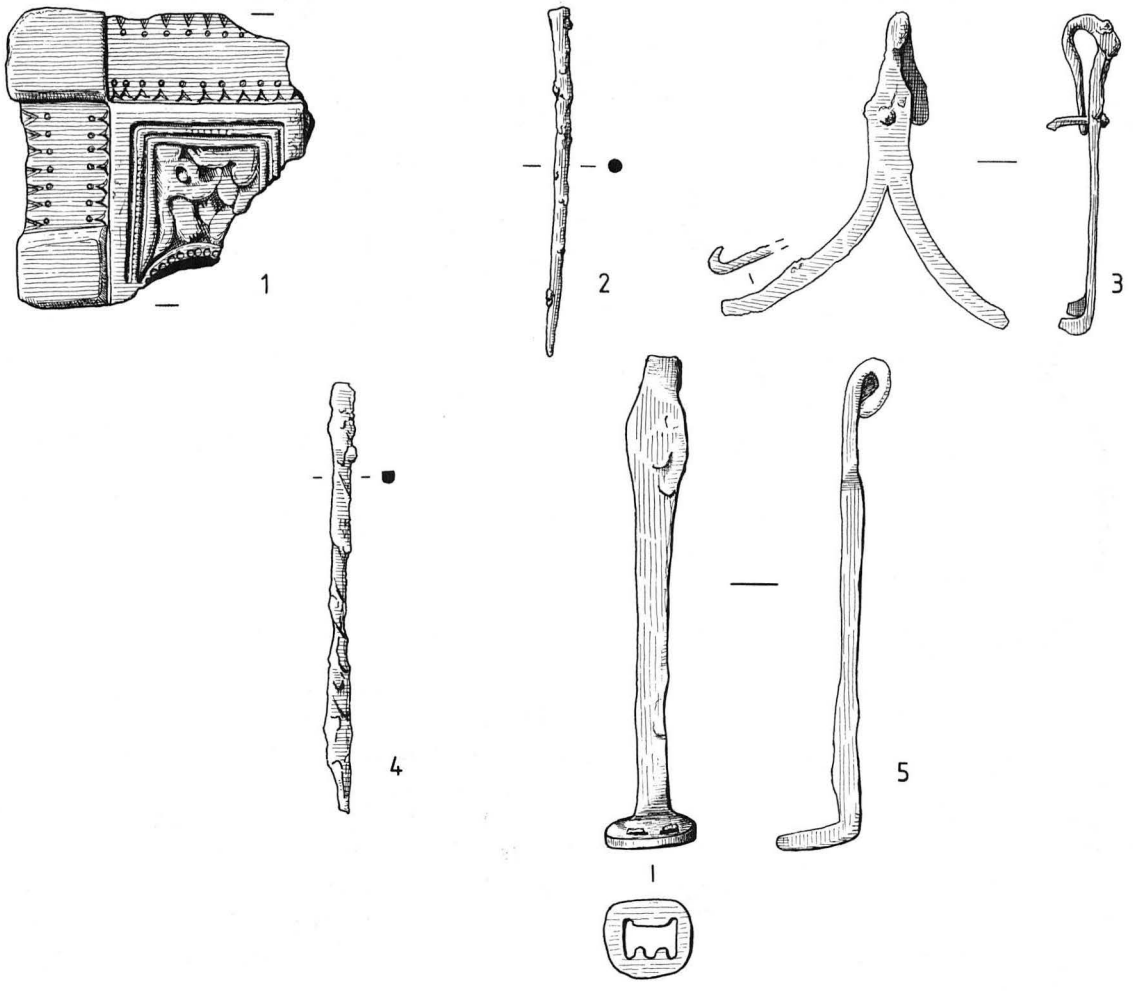

Fig. 20. 1. Object of copper alloy. Scale 1:1.
2-5. Objects of iron. Scale 1:2.

OBJECT OF IRON

Two nails, square section and expanded head, length 5 cm. Not illustrated; layer 10.

Fig. 20, No. 2 Heckle tooth (Brodribb et al. 1973, fig. 67); ditch 21.

No. 3 Iron fitting with nail; perhaps part of the binding of a box with the looped end holding the handle and the divided ends hammered into the wood; ditch 21.

No. 4 Twisted rod, apparently complete; layer 10.

No. 5 Barrel-padlock key. London Museum Catalogue Type C, fig. 44, no. 3. Found before excavation in foundation trench to the south of kiln; probably in the equivalent of layer 10.

THE POTTERY

The pottery from the kiln excavation

Fig. 21, Nos. 1-12 These comprise almost all the sherds recovered from the western end of the oven pit (12) with a few joining sherds found by the excavators in layer 6. Those not illustrated consist of body sherds and sagging base sherds which, while not joining illustrated examples, are similar to them. All appear to be wheel thrown. The fabric of all sherds is similar. Approximately twenty five medium sized (0. 5 mm or less

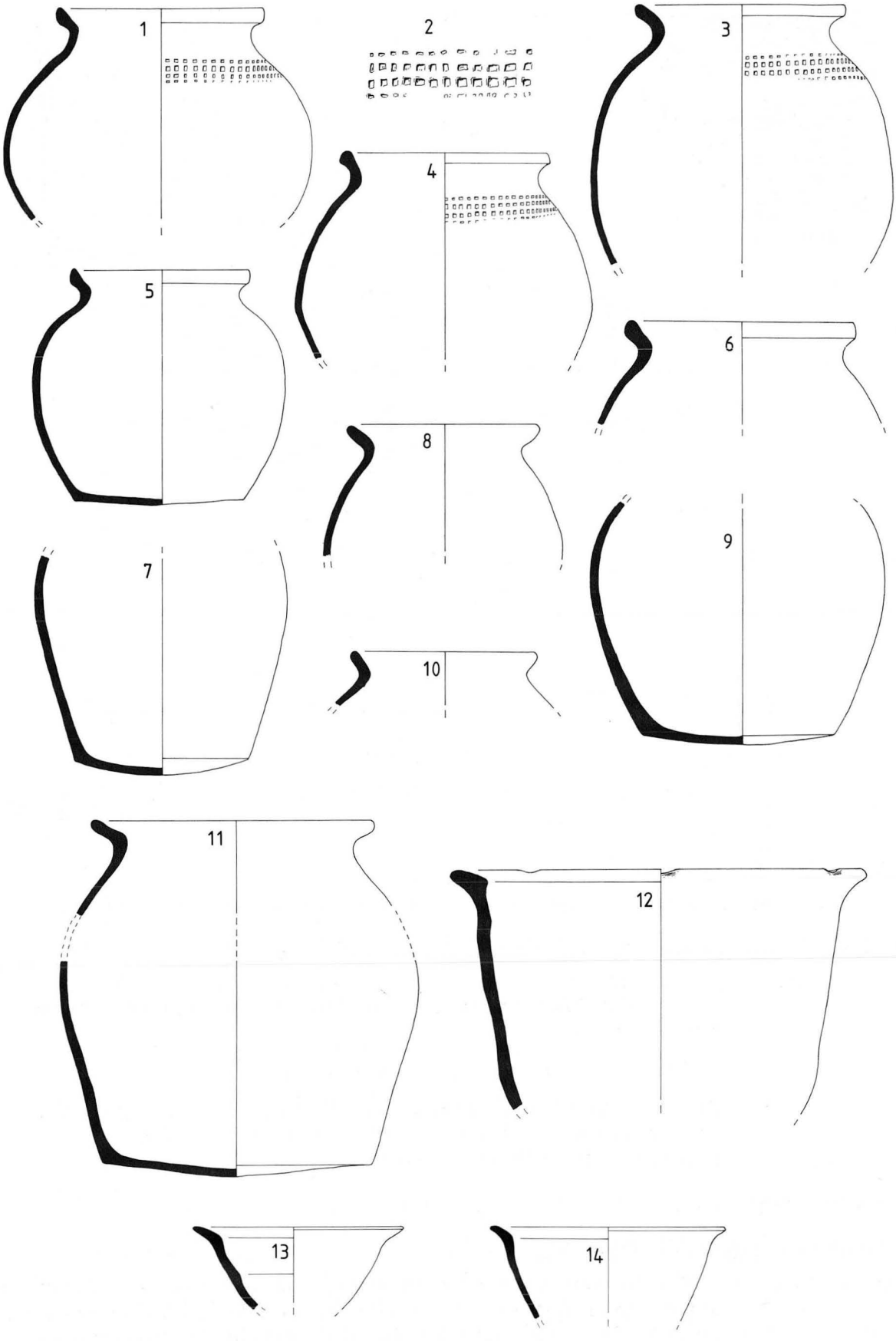

Fig. 21. Pottery from the kiln excavation.
Scale 1:4 except for rouletting No. 2 Scale 1:2.

Fig. 21, (cont.) Nos. 1-12 across) dark or translucent grits, probably of quartz or quartzite, occur in each 25 mm ^{2}. Flint grits up to 9 mm across, and grits up to 2 mm across of reddish brown material (iron ore? or grog?) occur occasionally. All examples are low in visible mica. Colours vary between reddish-yellow and grey, and in several cases sherds of very different colours join. Hardness ranges from hard to soft, oxydised examples always being softer. A hard grey fabric seems to have been intended. All bases are sagging. The rouletted decoration (No. 2) is identical in each case, the implement used being 5.9 cm in circumference. The bowl (No. 12) is decorated with an estimated six finger marks on the top of the rim.

Nos. 13-14 were found on the floor of the stoke pit (9), but are of the same fabric and colours as Nos. 1-12. It is not known whether they are bowls, lamps or lids.

Fig. 22, No. 15 is from the upper part of the stoke pit (9). The rouletted decoration (No. 16) was made with an implement 4 cm in circumference. The fabric is hard and dark grey, with rather more grits than the above. Surfaces are more roughly finished. Partially sooted externally.

No. 17 was found with No. 15; 'sandwiched' fabric; grey, reddish-brown, grey, reddish-brown, grey.

No. 18 from probably ditch 7. Fabric as Nos. 1-14, but with predominantly translucent grits. Reddish-brown with grey core and dark grey exterior.

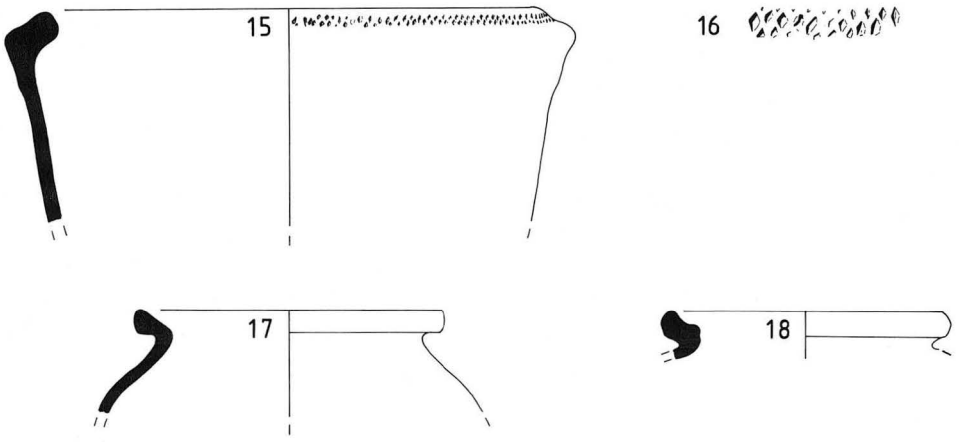

Fig. 22. Pottery from the kiln excavation.
Scale 1:4 except for rouletting No. 16 Scale 1:2.

The Middle Saxon Pottery (c. A.D. 650-850)
by Carolyn Dallas

The identifiably Middle Saxon pottery totals thirty sherds of the grey, wheel-made pottery known as Ipswich-type ware. These include one burnished vessel that may be an import but is more likely to be Ipswich-type ware. Apart from this, the forms are all small 'cooking pots', with neither bowls nor decorated sherds. Six rim sherds were found, four of which were West Group I type C (West 1963, 248) and one other is also West Group I. Sooting occurs on both the inside and outside of the 'cooking pots'. 71% are in a fine sandy fabric. In addition, one 'grass tempered' sherd, and two hand-made sherds in a coarse sandy fabric were recovered.

Unstratified

One Ipswich-type rim, fine sandy, West Group II (West 1963, 248).
Two Ipswich-type body sherds, quartz sand tempering producing 'pimply' surfaces.
One body sherd, possibly Ipswich-type ware.
Two body sherds, hand-made, coarse, sandy.

Layer 10

One sagging base sherd, Ipswich-type ware, fine sandy.

Ditch 21

Twenty-one Ipswich-type sherds, representing approximately sixteen vessels, including one possible import (two Thetford-type sherds from the upper filling):
Four rims, fine sandy, dark grey (Fig. 23, Nos. 19-22);
Two sagging base sherds, fine sandy;
Two sagging base sherds, pimply;
One sagging base sherd, intermediate between fine sandy and pimply;
Seven body sherds, fine sandy;
Three body sherds, intermediate between fine sandy and pimply;
One body sherd, pimply;
Fragment of a strap handle with a low midrib. A wall sherd visually attributable to the same vessel was found in feature 22. This pot is in a basically pimply fabric, with a mixed light grey and light red core and black surfaces. The outside of the handle and the exterior surface of the body sherd have been burnished, the former well, but the latter rather roughly leaving some grit drag lines across the surface. Burnished Ipswich-type ware has been found in Norfolk e.g. North Elmham (Wade-Martins 1970, 72, fig. 23, no. 2), Suffolk (e.g. Ipswich, West 1963, fig. 46, P11 L3 no. 44), and Cambridgeshire (e.g. Castor, Dallas forthcoming). Where the vessel is identifiable it is usually a pitcher. These are also found in Kent (e.g. Richborough, Hurst 1959, 20, fig. 4, no. 1), and it seems possible that some of these vessels have been imported from the continent; they are not readily distinguishable from Ipswich-type ware by visual fabric analysis.

Feature 22

Five sherds, all probably from different vessels:
One small body sherd with organic ('grass') tempering, the particles are short (probably chaff) with occasional small grits and calcareous inclusions, thick black sooting deposit on internal surface;
One burnished body sherd, described above under ditch 21;
Two Ipswich-type body sherds, fine sandy;
One Ipswich-type rim, fine sandy, dark grey (Fig. 23, No. 23).

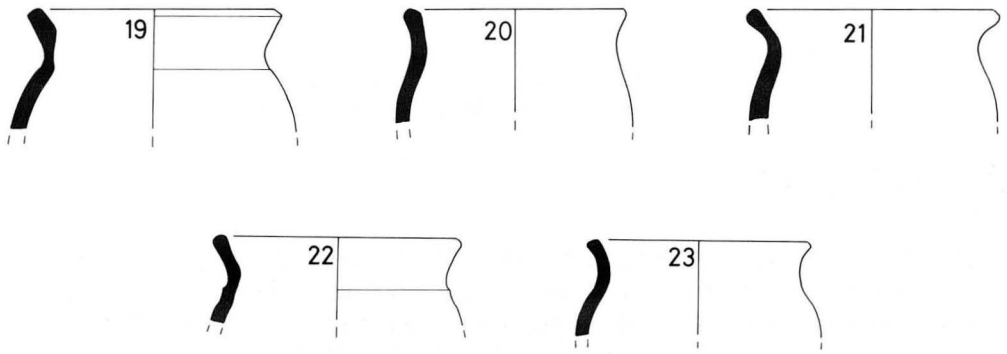

Fig. 23. Middle Saxon pottery. Scale 1:4.

OBJECTS OF STONE (not illustrated)

Fragments of Rhineland lava quernstone, layers 6 and 10, feature 22.

BURNT CLAY (not illustrated)

Lumps of burnt red clay, some with one finished face, were scattered throughout layers 3 and 6. Although they could have originated in the superstructure of the kiln there was no evidence for a collapsed dome. The clay is chalky like that in the kiln walls and arches. Ditch 7 and the adjacent part of layer 10 produced large quantities of burnt daub with wattle impressions (only samples were retained). Many pieces exhibit one roughly finished surface, but none carry certain impressions of squared timber. The clay is not chalky.

VI. ZOOLOGICAL EVIDENCE

Small quantities of animal bone were recovered from layers 3 and 10, stoke hole 9, probable ditch 7, ditch 21, and feature 22. Individual groups are considered too small to yield useful information, and they remain unidentified. A herring (Clupea harengus) [3] vertebra was found in ditch 21. Layers 3 and 6, ditch 21 and feature 22, all produced shells of oyster (Ostrea edulis L.) and mussel (Mytilus edulis L.).

VII. DISCUSSION

MIDDLE SAXON OCCUPATION

Little can be said about the significance of Middle Saxon features, because of the very limited nature of the observations. Ipswich-type ware was scattered over the site, but its distribution in the surrounding built-up areas is unknown. The proximity of Middle Saxon occupation to the church is consistent with the pattern recognised in central Norfolk (Wade-Martins 1971).

THE KILN

A search of the surrounding builder's trenches failed to reveal any further evidence of pottery production. Thetford-type sherds were collected from the area around the kiln. These were not wasters, and their fabrics were different to that of the kiln products. It seems likely that this kiln was a one-off structure built and used by an itinerant potter. The only other single rural kiln so far known in East Anglia was at Langhale, south of Norwich (Wade 1976). The Langhale kiln lay in an area of very high Domesday population but the population of the Bircham region was below average for the county (Darby 1957, fig. 26). The Langhale kiln was situated close to the parish boundary within a dispersed settlement pattern, while that at Bircham was within 80 m of the parish church.

The structure of the kiln, although a little smaller, is similar in type to other Saxo-Norman pottery kilns in East Anglia (Wade 1973, fig. 13). The cheeks on either side of the flue do not taper towards each other as in other examples, but this abnormality of shape may have been caused by the removal of the flue arch.

Until stratified groups of Thetford-type ware from the major urban centres have been fully assessed, it will be difficult to date the small assemblage from Bircham more securely than within the conventionally accepted bracket of A. D. 850-1150 (Hurst 1976, 314-20). However a tentative suggestion can be made. The only rimsherd from probable ditch 7, which underlay the kiln, is definitely of Thetford-type ware. This feature which contained large quantities of wattle impressed daub demonstrates some earlier Saxo-Norman occupation. The bowl from the stoke pit fill (Fig. 22, No. 15) is closely paralleled at Grimston (Clarke 1970, fig. 5, nos. 3/1 and 3/2) and might therefore date to the late

eleventh or twelfth century. Perhaps the work of an itinerant potter in this region of Norfolk would not have been economically viable after the establishment of the large scale pottery industry at Grimston 12. 5 km to the south west some time in the eleventh century. On these purely circumstantial grounds, it is suggested that the kiln was in use in the tenth or early eleventh century.

MEDIEVAL AND POST MEDIEVAL OCCUPATION

The small quantity of medieval pottery all unstratified and mostly worn suggests little or no occupation. A map of the early seventeenth century [4] shows the settlement and road pattern substantially the same as at present, with the roughly oval area west of the church divided into six closes, five with houses.

October 1977

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A Medieval Tile Kiln at Abbey Farm, Shouldham

by John Smallwood

I. SUMMARY

During the winter of 1969-70 a medieval tile kiln, mainly used for the production of roof tiles, was excavated at Abbey Farm, Shouldham. The kiln, which was of a standard type (Eames 1963), had been reconstructed at least three times. Clay was obtained from a local source. It is assumed that the kiln was connected to the adjacent Gilbertine Priory of Shouldham.

II. ACKNOWLEDGEMENTS

The writer wishes to thank the landowner and farmer Mr. G. Cox of Abbey Farm, Shouldham, who generously allowed excavation to take place, and Mr. Paul Gascoigne, also of Abbey Farm, to whom the credit for finding the kiln must go. Without his help such a complete record of the kiln could not have been made. Thanks are also due to Mr. Alan Carter for his advice during the excavation, to Mr. Nick Adams for preparing the drawings for publication, to the author's wife and to those members, past and present, of the West Norfolk & King's Lynn Archaeological Society, together with former pupils of King Edward VII School, King's Lynn, who assisted with the excavation often in near artic conditions.

III. DISCOVERY AND LOCATION

In September 1969 the writer was asked by Miss. A. S. Mottram, then Curator of the King's Lynn Museum, to lead a group of members of the West Norfolk & King's Lynn Archaeological Society in recording a kiln which had been found on Abbey Farm, Shouldham (Fig. 24).

The kiln was located in the middle of what is now an arable field, at just above 6 m O. D., and about 300 m north east of Abbey Farm. The sub-soil is a wind-blown sand. Air photographs of the field show evidence of a series of ditches now destroyed (Plate II).

The kiln had been partially excavated by Mr. P. Gascoigne in order to establish what sort of obstruction was periodically responsible for damage to farm implements. In view of the circumstances we decided to excavate and record the structure before further years of cultivation did more damage. The top soil was removed mechanically to expose the kiln and the stoking pit. Time did not permit us to explore the area around the kiln to recover evidence of its date, which was not forthcoming from the structure itself. The complexity of the kiln and the vagaries of the weather inevitably set limits on what could be achieved by weekend excavation. Nonetheless some useful results were obtained despite the fact that the kiln had been destroyed to a level beneath the firing floor. In

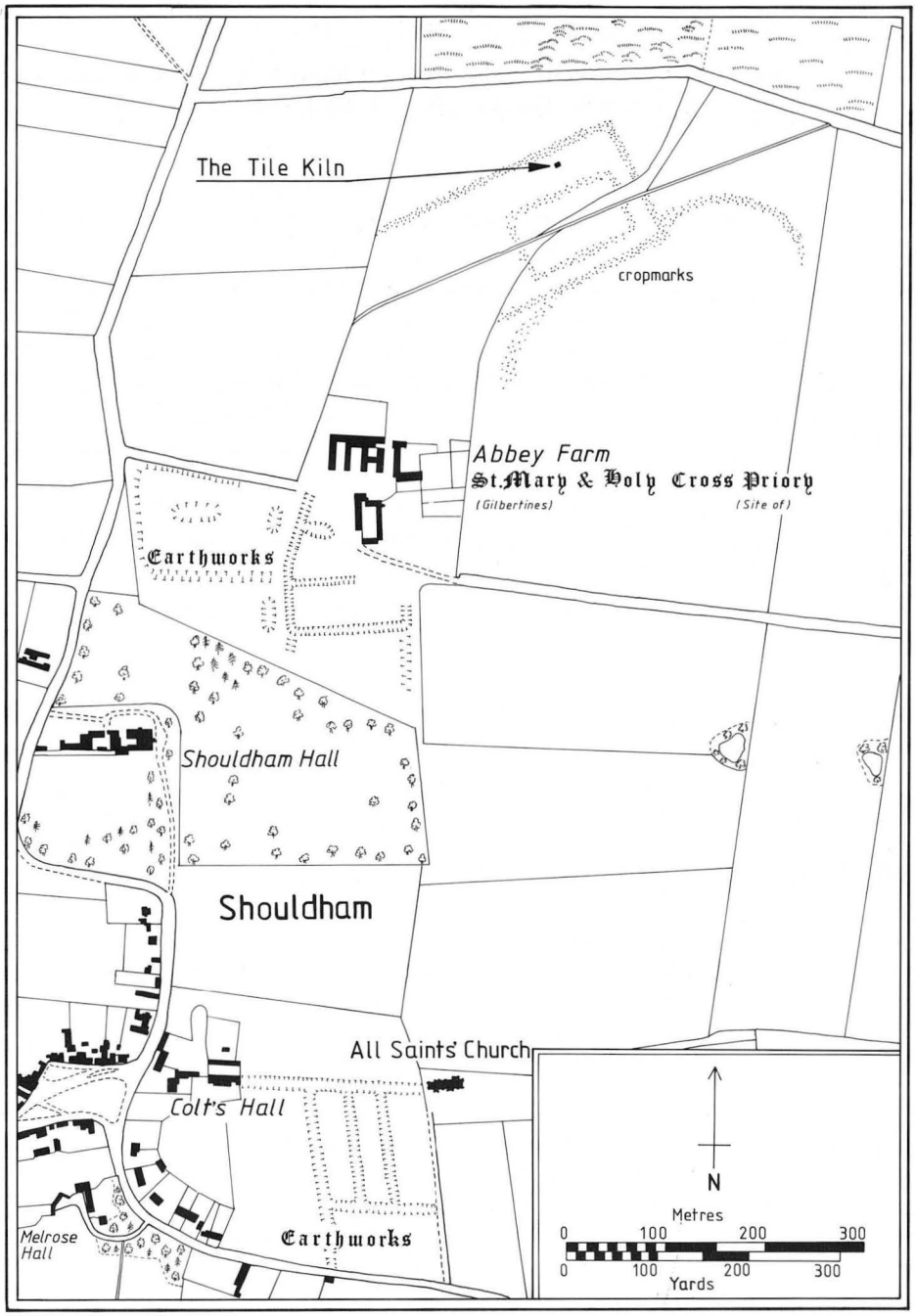

Fig. 24. Location plan of tile kiln and associated crop marks at Abbey Farm, Shouldham.

each of the three phases recorded, only the substructure of flues and the supporting arches for the firing floor had survived.

IV. DESCRIPTION
(Figs. 25, 26 and 27)

The kiln was rectangular, measuring 3.6 m x 2.5 m internally; it had been dug into the sand to a depth of about 90 cm beneath the modern land surface. The walls, which were about 76 cm thick comprised chalk lumps set in clay and faced internally with courses of tiles (12 mm thick) also set in clay and laid horizontally. The kiln lay on an approximate east to west alignment: it was fired from the east where a large, but incompletely excavated, ash-filled stoking pit was found. Time did not permit the complete excavation of the stoking pit. The western part of the kiln had been disturbed at some time in the recent past and Mr. Gascoigne had extended this disturbance. In

Photo: J. K. St. Joseph

Plate II. Shouldham: the area of cropmarks around the site of the kiln to the north of Abbey Farm (Fig. 24).
(Cambridge University Collection: Copyright Reserved: No. OD8)

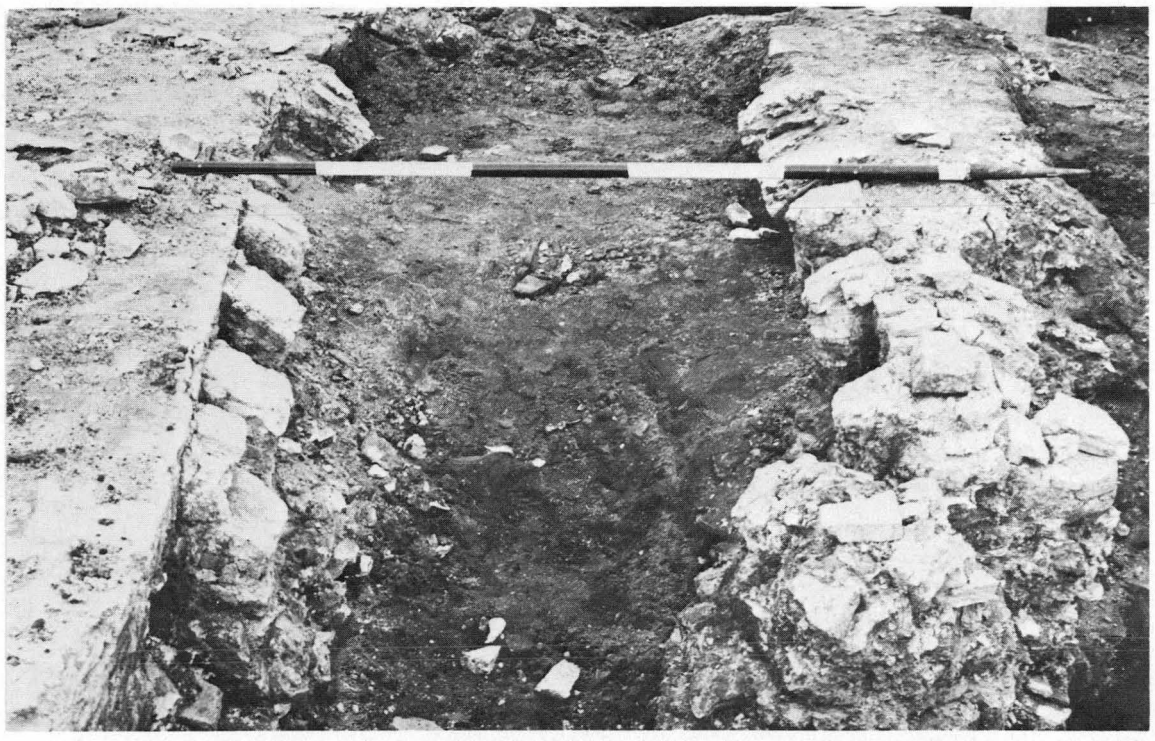

Plate III. Shouldham: view taken from the west in the early stages of the excavation showing the central support and paired arches in the northern half of the kiln.

Plate IV. Shouldham: view of the floor of Phase 1 and of the west wall of the kiln taken after soil disturbed in recent times had been removed and the features exposed had been cleaned. Part of the floor of Phase 2 is also visible together with a number of wall cavities.

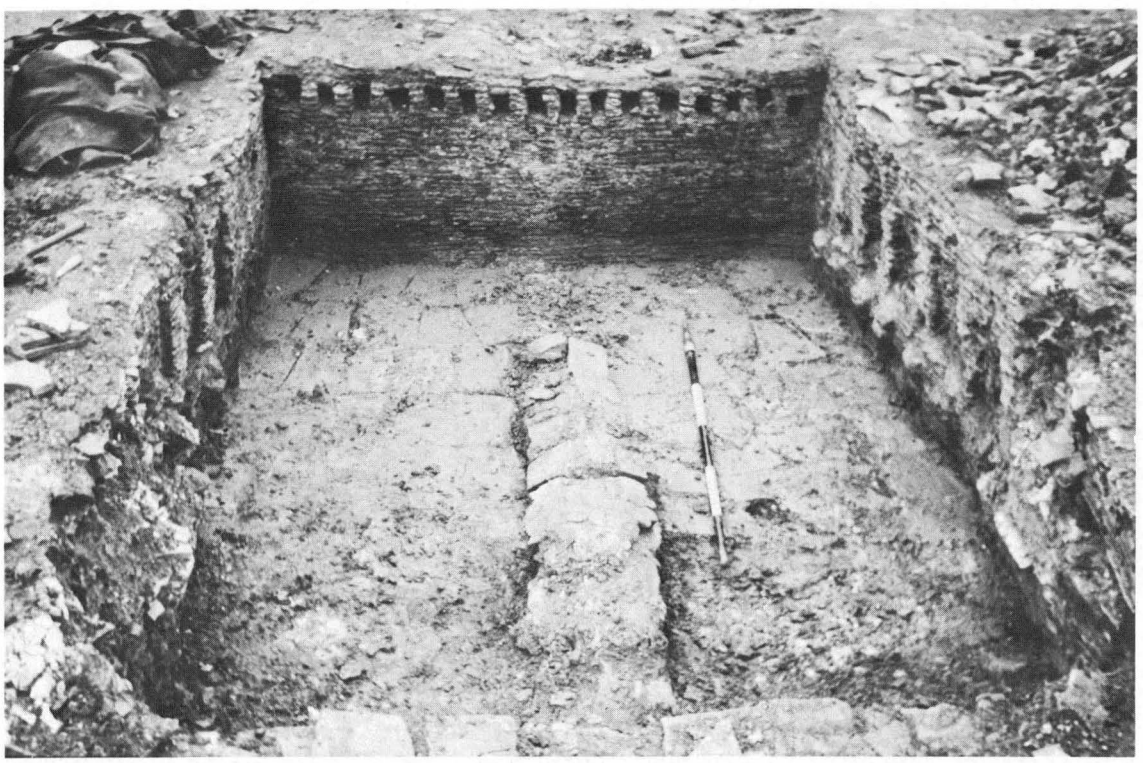

Plate V. Shouldham: general view of kiln from the east, showing the Phase 1 floor of trapezoidal tiles, the remains of the central supporting piers and the emplacements for the arches. The cavities of Phase 2 are visible in the west wall. In the foreground is the retaining wall constructed at the east end of the kiln in Phase 4.

clearing the kiln three phases of reconstruction were identified, but the western part of the final phase had been destroyed by the plough (see Plates III-V).

Phase 1

After completion of part of the kiln walls, a floor consisting of trapezoidal tiles was laid (Fig. 25). This was continued as far as the offset formed by the flue arches, which seem to have been four-centred and were constructed of 12 mm tiles set in clay. Within the main body of the structure the firing floor had, in this phase, been supported by a series of paired arches presumably similar in form to the flue arches. Larger tiles, again set in a mixture of sand and clay, had been used in the construction of these arches, and formed supporting piers on the centre line of the kiln. This system of arches had been almost entirely obliterated in the reconstruction. However, traces of the engaged pillars from which the arches sprang were visible as irregular and shallow recesses in the facing of both the north and south walls. A break in the partial vitrification of the sand beneath the kiln floor, (which extended from the last surviving central support tile to the west end of the trench), confirmed that this system of arches had continued to the end wall during this phase. Above the floor a deposit of ash up to 15 cm thick had accumulated.

Phase 2

This began with the dismantling of the, by then possibly ruinous, superstructure of Phase 1. Whatever the reason there was a substantial reconstruction, with the external walls alone of the original kiln being retained. The floor level in the body of the kiln was raised up to 33 cm by a layer of consolidated tile rubble, over which was spread a thin layer of clay, which was finally covered with rectangular tiles extending as far as the flue arches. On this tiled floor a fresh range of central supports were placed and the arches supporting the firing floor, which must also have been raised, were reconstructed. At this stage these arches may have been linked to a fresh set of engaged pillars attached to both the north and the south walls of the kiln. Although the relevant deposits at the west end of the kiln had been destroyed, it was reasonably clear that the system of arches supporting the firing floor had not at this phase been extended as far as the west wall. Probably associated with the arrangements for supporting the firing floor in the western sector was the series of sixteen small irregular rectangular cavities built into the thickness of the wall. They had been plugged with clay, presumably at the time of a subsequent reconstruction. They may have been emplacements for fire-bars, which would have been necessary in the absence of arches and floor at the western end. However the extent of destruction and the lack of surviving fire-bars make this interpretation uncertain.

Phase 3

After some use the kiln floor was again raised. It is tempting to see in the thinness of ash associated with Phase 2 evidence for a rapid further reconstruction. However, the thickness of the ash deposits at each stage may simply represent the frequency with which the ash was raked out of the flues during or between firings. In this phase the rammed rubble used in raising the floor level was once more not tiled over. Nevertheless the centre supports were again renewed and, at this stage, a further series of engaged pillars were constructed along the side walls of the kiln. There was no evidence that the entrance flue was modified either at this stage or in Phase 2.

Phase 4

With Phase 3 the sub-floor of the main part of the kiln had been raised to a level considerably higher than that of the floor beneath the entrance flue arches. This may have inhibited satisfactory firing. In any case the entrance flues were now dismantled and rebuilt. The level of the flue floor was raised and consolidated with a layer of clay into which were pressed broken tiles laid vertically. At the same time a retaining wall

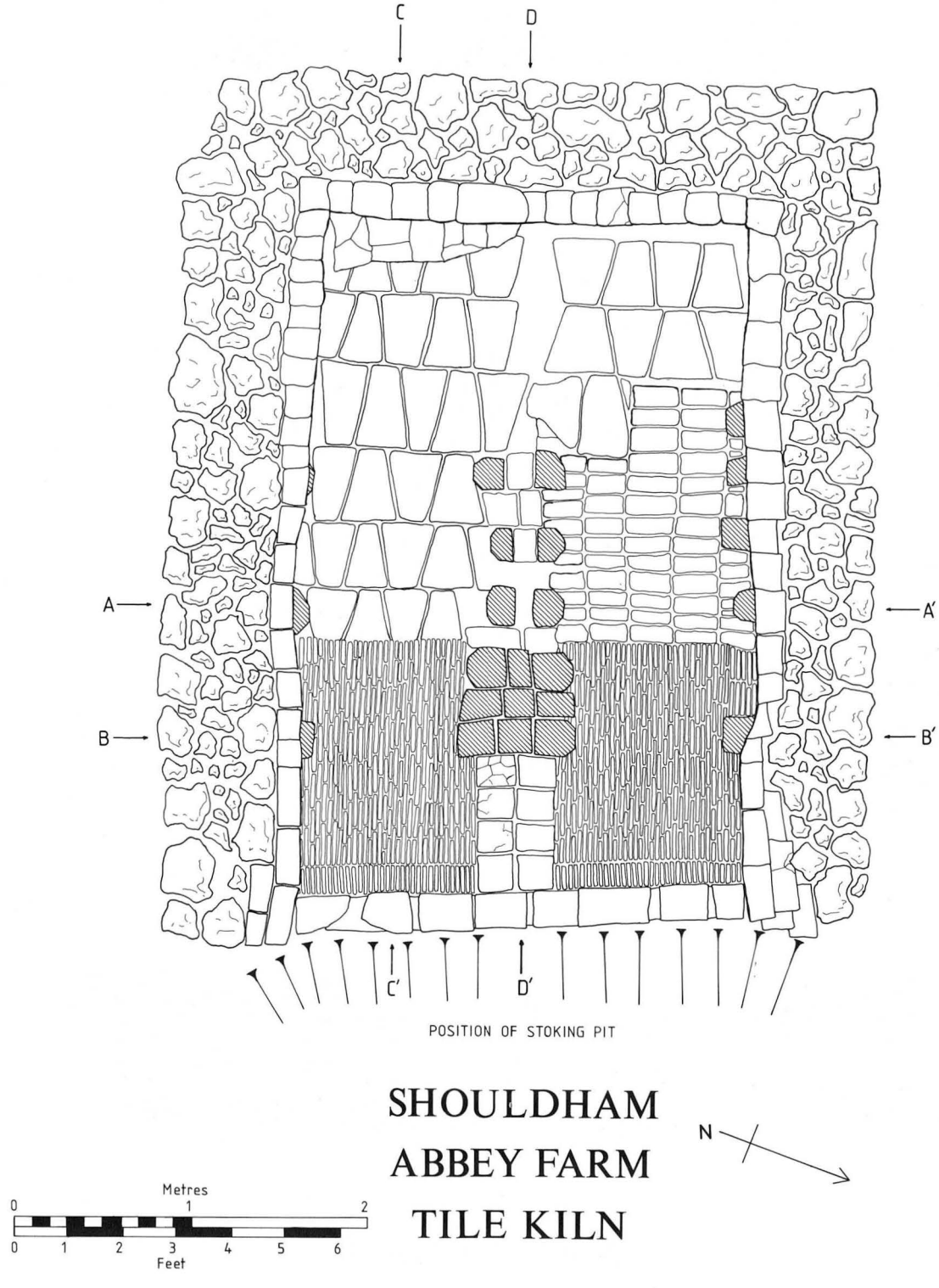

Fig. 25. Composite plan of tile kiln showing outline of structure, site of stoking pit, and make-up of floors in Phases 1, 2 and 4. The trapezoidal tiles represent a part of the Phase 1 floor; the rectangular tiles in the northern part of the central area of the floor were Phase 2; the compacted broken tiles at the east end were Phase 4.

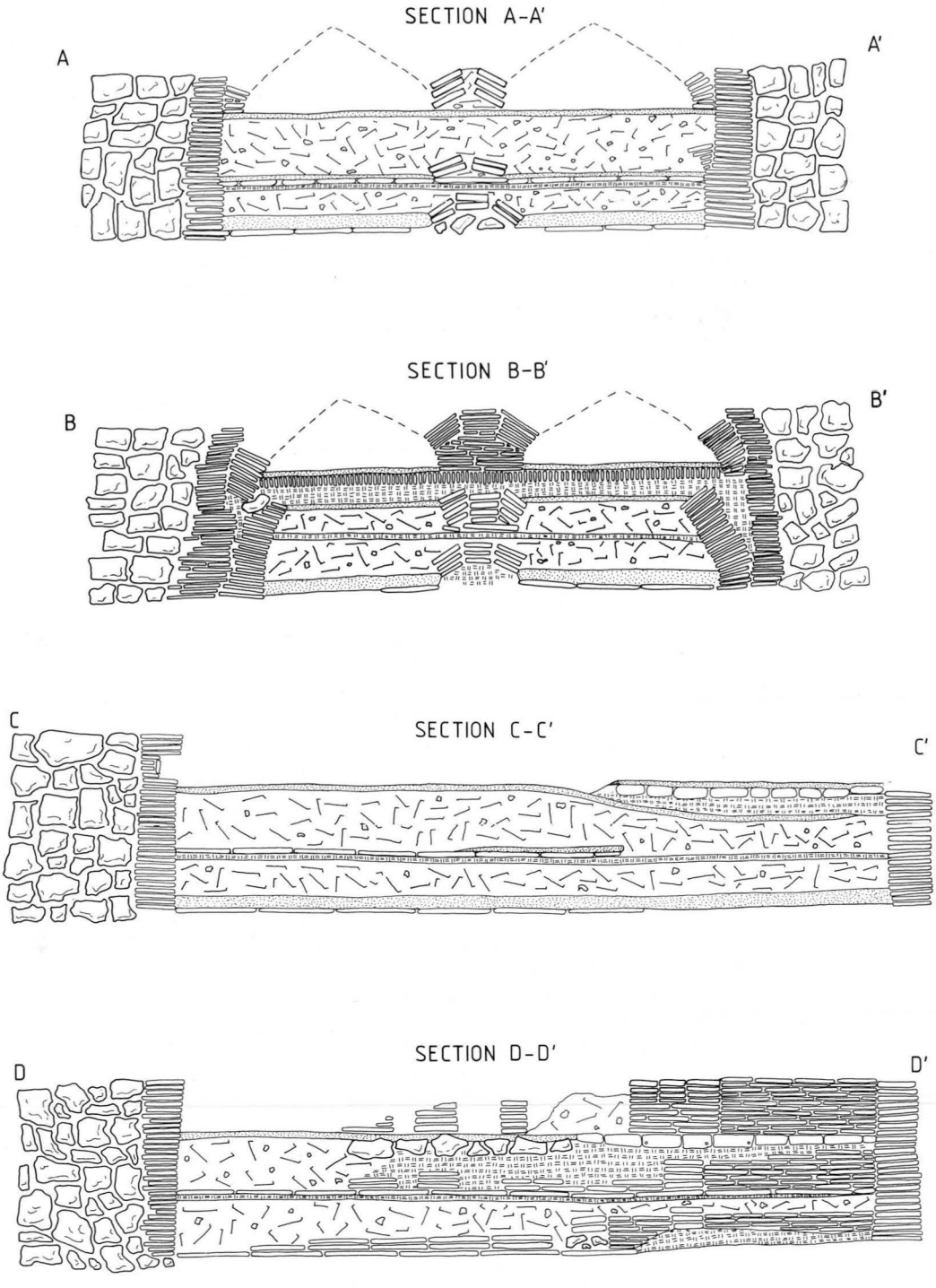

Fig. 26. The four sections through the kiln.

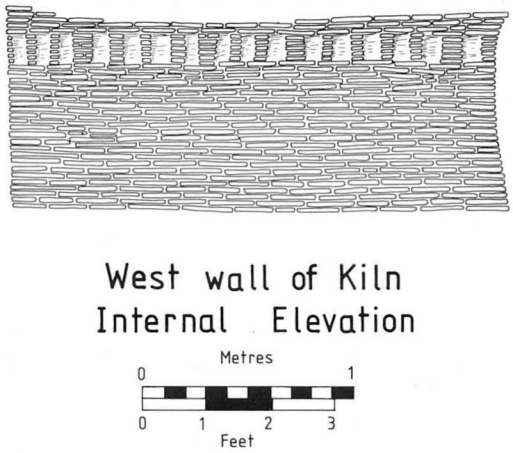

Fig. 27. Elevation of the west wall of the kiln.

was constructed, presumably to prevent any part of the kiln structure collapsing into the stoking pit. The entrance flue arches were completely renewed. The main part of the kiln was probably not tampered with at this stage.

Traces of any further alterations were obliterated by ploughing.

V. KILN PRODUCTS

The Shouldham kiln site is remarkable for the apparent absence of waster dumps. There is no trace of wasters on the surface of this field which is under regular cultivation. It is possible that either the dumps were sited at some distance from the kiln or that the wasters were removed, possibly as rubble. This kiln unlike that at Bawsey [1], although producing floor tiles, does not appear to have produced stamped in addition to glazed varieties. Perhaps variations in quality and firing may have been acceptable thus reducing the numbers of rejects considerably.

With the absence of waster dumps a discussion of the kiln products is entirely dependent on the material recovered in the excavation of the kiln. Here the tiles incorporated into Phase 1 can hardly have been produced in the kiln itself. Even with the material incorporated into the rebuilds, either structurally or into the make up of the floors, we cannot be certain how much was purpose-made, and how much was superstructure reused. All that can be done is to describe each type and comment on the probability that it represents a product of this kiln.

Note: imperial measurements have been deliberately retained for describing dimensions of tiles and bricks.

1. Trapezoidal roofing tiles (Fig. 28, No. 1)

These averaged 40 cm (16 in) in length and tapered from about 25 cm (10 in) to just under 15 cm (6 in). They were about 2.5 cm (1 in) thick and weighed on average 4 kg. Most had a single peg hole sited centrally and about 6 cm ($2\frac{1}{2}$ in) from the narrow end of the tile, but occasionally the peg hole was omitted. Arranged alternately they formed the floor of the kiln in Phase 1. No trace of them was found anywhere else in the kiln. They may have been intended for use in roofing either an apsidal or conical roofed building. It is improbable that they were made in the kiln. Their thickness and weight would suggest that they are typologically early, perhaps even dating from before A. D. 1300, but in the absence of evidence this must remain purely speculative.

2. Rectangular roof tiles (Fig. 28, No. 2)

Rectangular roof tiles comprised the bulk of the ceramic material recovered. Amongst these were some large examples, which weigh about 2.5 kg and measure roughly 36 x 23 x 2 cm (14 x 9 x $\frac{3}{4}$ in). They were few in number and only occurred in Phase 2. These tiles were provided with both peg holes and protrusions to help secure them to the roof timbers. There can be little doubt that roof tiles were produced here at all periods.

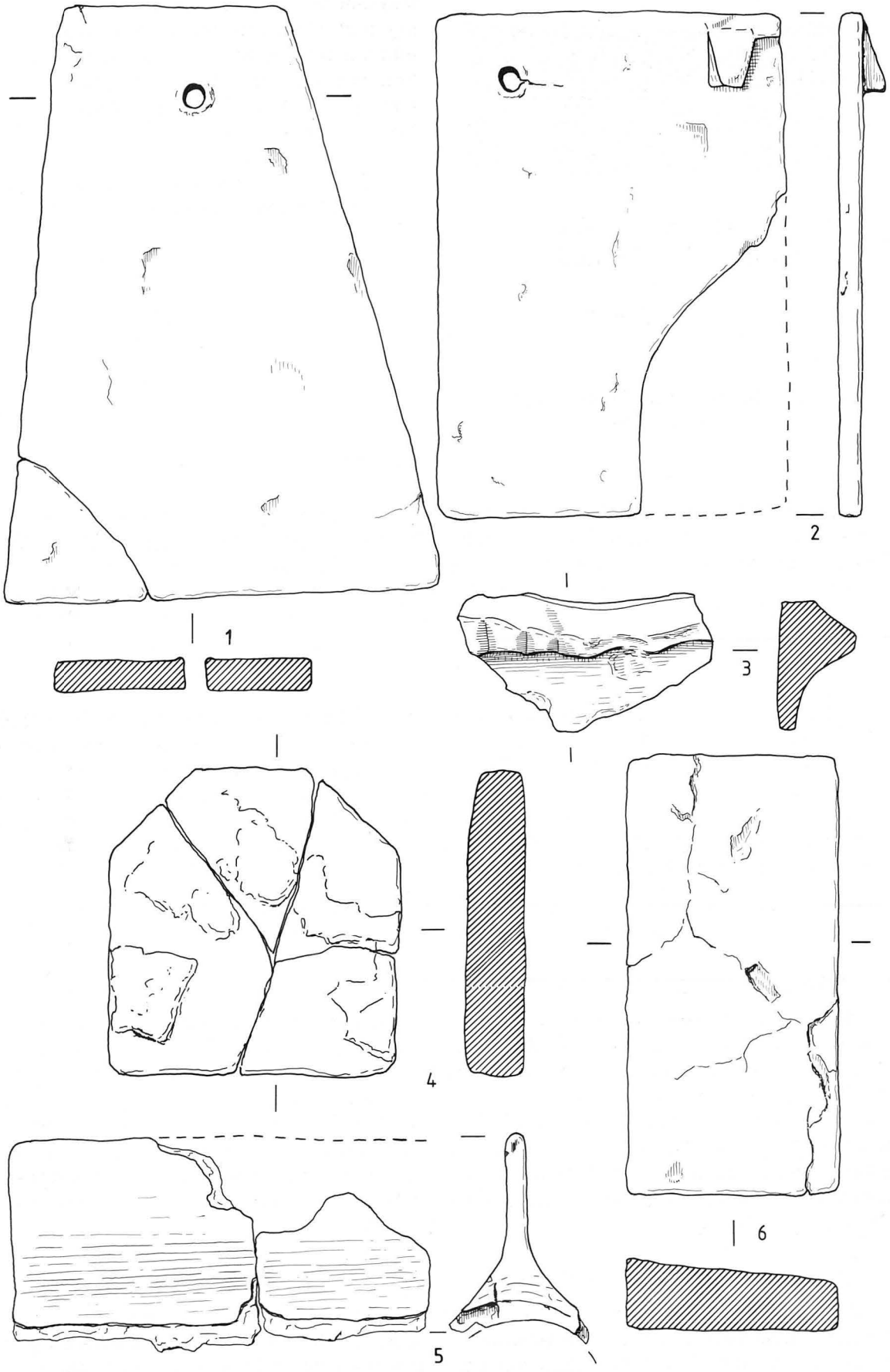

Fig. 28. Selection of kiln products. Scale all 1:4 except No. 3 Scale 1:2.

(A much larger number of smaller, thinner, roof tiles was produced, but the surviving pieces were all too fragmentary to provide evidence for dimensions.)

3. Finial (Fig. 28, No. 3)

A fragment of what may have been a finial was found unstratified. This fragment is overfired and cracked. As items 2 and 3 were not incorporated in the surviving kiln structure it is reasonable to assume that both were kiln products.

4. Square-ended six-sided bricks (Fig. 28, No. 4)

These were employed in the construction of the arches supporting the firing floor at all phases. They appear to have been mould-made, and were probably placed in position in an unfired state. We had difficulty in recovering examples intact, as they tended to disintegrate very easily. A preliminary firing of the kiln must have been necessary before it could be charged.

5. Ridge tile (Fig. 28, No. 5)

A fragmentary ridge tile was recovered from disturbed levels.

6. Bricks (Fig. 28, No. 6)

A few fragmentary bricks were found in the central supports of the substructure of Phases 1 and 2. Only one was sufficiently complete to permit reconstruction. It measures 30 x 15 x 4.5 cm ($11\frac{3}{4}$ x 6 x $1\frac{3}{4}$ in). Bricks were probably, but not certainly, made in the kiln.

7. Small, square floor tiles (not illustrated)

A number of small square floor tiles had been incorporated into the central support for the firing floor. They occurred in both Phases 2 and 3 and must have been produced in the kiln. They were 12 cm ($4\frac{3}{4}$ in) square and 3 cm ($1\frac{1}{4}$ in) thick, and were mould-made. Some were found to be scored diagonally as if intended to be broken in half and set into a patterned floor. None were glazed although the presence of fragments of thinner glazed tiles in the disturbed levels and in the kiln superstructure indicated that some at least of the kiln's output might have been glazed.

Samples of the material recovered in the excavation of the Shouldham kiln have been placed in both the Norwich and King's Lynn museums [2].

VI. DISCUSSION

It is unfortunate that the excavation of the Shouldham kiln, the first medieval tile kiln to be dug in Norfolk, has left so many questions unresolved. It is nonetheless possible to say that, at least in its substructure, the Shouldham kiln resembled the Clarendon Palace tile kiln which may be dated, on documentary evidence, to around A.D. 1240 (Eames 1968, pl. XV and XVI). Even so, as more attention seems to have been paid to the products of medieval tile kilns than to the kilns themselves, it is not known how long this type of kiln continued to be built. On its form alone it would be rash to assign an early date to the Shouldham kiln.

However it is reasonable, from its location, to assume that this kiln was associated with the Gilbertine Priory of Shouldham. Shouldham Priory, one of a substantial group of monastic houses in the Nar valley, was founded by Geoffrey Fitzpiers, Earl of Essex, during the reign of Richard I and was endowed, at its foundation, with most of the manor of Shouldham (Blomefield 1810, VII, 417).

The Gilbertines were the sole medieval religious order of English origin. A Gilbertine house comprised a community of nuns following the Cistercian interpretation of the Benedictine rule, and a community of brothers who followed the Augustinian rule. The fact that this was a double order meant that all the buildings, except the priory church, had to be duplicated.

The remains of Shouldham Priory cover a considerable area. Some parts of the abbey buildings may be encased within the present farmhouse, but otherwise none of the priory buildings survives above ground level. There is, however, copious evidence of its presence. In the meadows to the east of Abbey Farm traces of buildings, an artificial water channel and a fish pond are visible (Fig. 24). In 1831 the abbey ruins were apparently removed (White 1845, 622), and in 1867 stone coffins were found to the north and to the north east of the farm buildings. The cemetery area in which the coffins were found extends into the fields to the east of the farm and has more recently yielded a group of medieval skeletons [3]. The priory site in fact extended over a considerable part of this field which is under cultivation. The bulk of the principal buildings seems to lie beneath the farm and its garden. Architectural fragments, often moulded or decorated have been recovered from the gardens. When the digging of a soakaway for the piggery in 1973 cut through the destruction layer of the priory the finds included thirteenth century and fourteenth century decorated stonework (C. B. A. 1973, 13).

Unfortunately there is little amongst the material evidence of the buildings which can shed light on the kiln. Mr. Gascoigne reports finding a tiled floor in the field to the east of the farm. Certainly tile fragments have been recovered from the surface of this field after ploughing. However they are scattered and generally heavily abraded, and confusion is possible with debris from the Roman industrial site which included at least one kiln producing tiles (C. B. A. 1971, 10). From the surviving fragments of building material reused in the farm buildings, it seems that a great deal of Barnack stone was incorporated into the Priory buildings. The presence of Northamptonshire stone at Shouldham is unremarkable: doubtless it reached the site via the Fenland waterways and was used on other monastic sites in the Nar valley, including Castle Acre. Clearly the proportion of stone which has survived to be incorporated into later buildings may not reflect the balance of building materials used in the priory. We cannot of course say whether the products of this kiln were intended just for use at the priory, or whether they were more widely distributed. The answer to this question will depend on excavation within the priory itself, on the identification of other kiln sites in West Norfolk, and on the study of building materials used in local medieval buildings both ecclesiastical and secular. All we can suggest at present is that, since the Shouldham kiln seems to have produced bricks and tiles rather than patterned floor tiles, it may not have served so wide an area as did the Bawsey kiln. At Shouldham the Gilbertines had a readily available source of clay which had already been exploited for tile and pottery making in the Roman period (C. B. A. 1971, 10). The production of decorated ceramic tiles, which had begun in England in the early thirteenth century (Eames 1968, 4), does not seem to have been undertaken in Norfolk until the later fourteenth century, when the Bawsey factory was established (Eames 1953) probably by the Cluniac monks of Castle Acre. However, the use of brick as a building medium is far earlier. Several buildings in brick at the Cistercian Abbey of Little Coggeshall, Essex, seem to date before A. D. 1200 (Pevsner 1956, 251). The building recently investigated in King Street, King's Lynn, has rubble walls containing thin tiles; this building has been dated to c. A. D. 1200 (Richmond and Taylor 1976). At Shouldham we have the trapezoidal tiles, which, although probably not made in the kiln, suggest that the roof tiles at least were in early use here, but there is no means of obtaining a more precise date from the evidence available.

December 1977

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A Moated Site at Hempstead, near Holt

by Andrew Rogerson and Nick Adams

I. SUMMARY

A small scale excavation in a single rectangular, stream fed, manorial, moated enclosure revealed the robbed walls of a three-roomed building measuring 14 m x 5. 5 m. The central room and one other were floored with glazed tiles. These included nineteen relief and counter-relief designs, two types with incised lines, numerous plain examples and a solitary two-colour tile.

II. ACKNOWLEDGEMENTS

Thanks are due to the landowner Mr. Richard Harmer who permitted the excavation and presented the finds to the Norfolk Museums Service [1] and to Mr. & Mrs. Bertie Harmer for their unswerving help and encouragement throughout three weeks of work.

III. INTRODUCTION

The site lies at TG 103 370 on the crest of the Cromer Ridge at 60 m O. D. within a valley containing a stream which flows northwards into the River Glaven (Fig. 29). The subsoil is glacial 'Marly Drift' under a thin covering of probably colluvial silty loam, 'cover loam' (Soil Survey 1974, 12-15, 17-19).

The moated site and its associated earthworks, site 6074, lay to the west of the parish church, and were first noted in 1968 by the landowner Mr. Richard Harmer, who gave details to Norwich Castle Museum. In March 1975 he informed the Unit that the site was to be levelled in the course of conversion of meadow land into arable. An earthwork survey was then undertaken. After the site had been bulldozed, Mr. Harmer collected several decorated tiles from the surface, all probably from the area of the western room. He also dug a small hole close to the eastern end of the central room, and found tiles in situ. The shallow depth of the tiles showed that a further ploughing would destroy the surviving extent of the pavement.

Following the harvest of the first crop, excavation was carried out over three weeks by the authors in September 1976. The whole of the area shown on Fig. 30 is now under cultivation. The south and west arms of the moat have been 'dyked out' and straightened, while the north and east arms have been filled in.

THE EARTHWORKS (Fig. 30)

These were surveyed tachiometrically. The western arm of the moat contained the stream which flowed to the north through a maintained ditch at the bottom of the moat. The rest of the moat, except in the southern part of the eastern arm, also contained

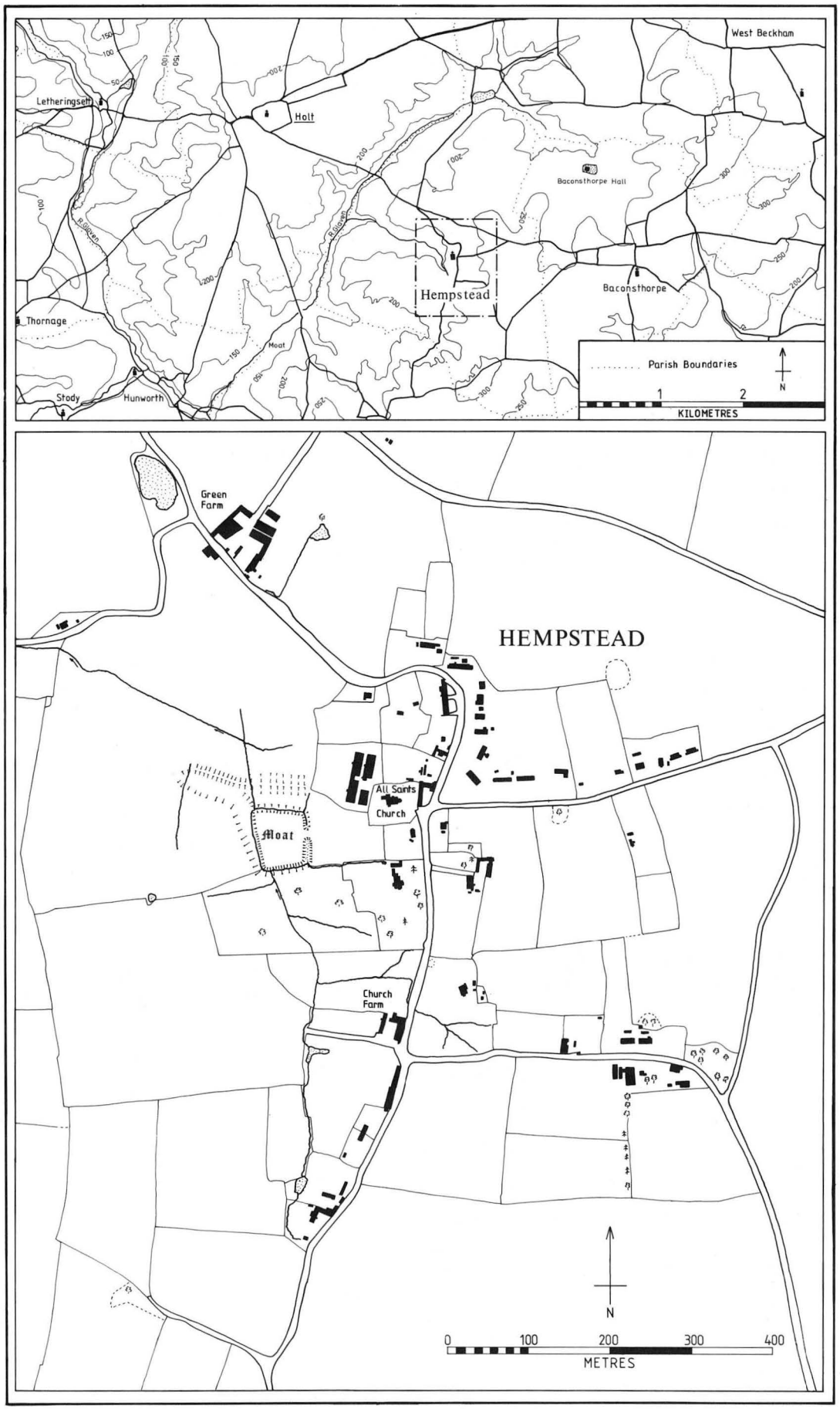


Fig. 29. Location maps.

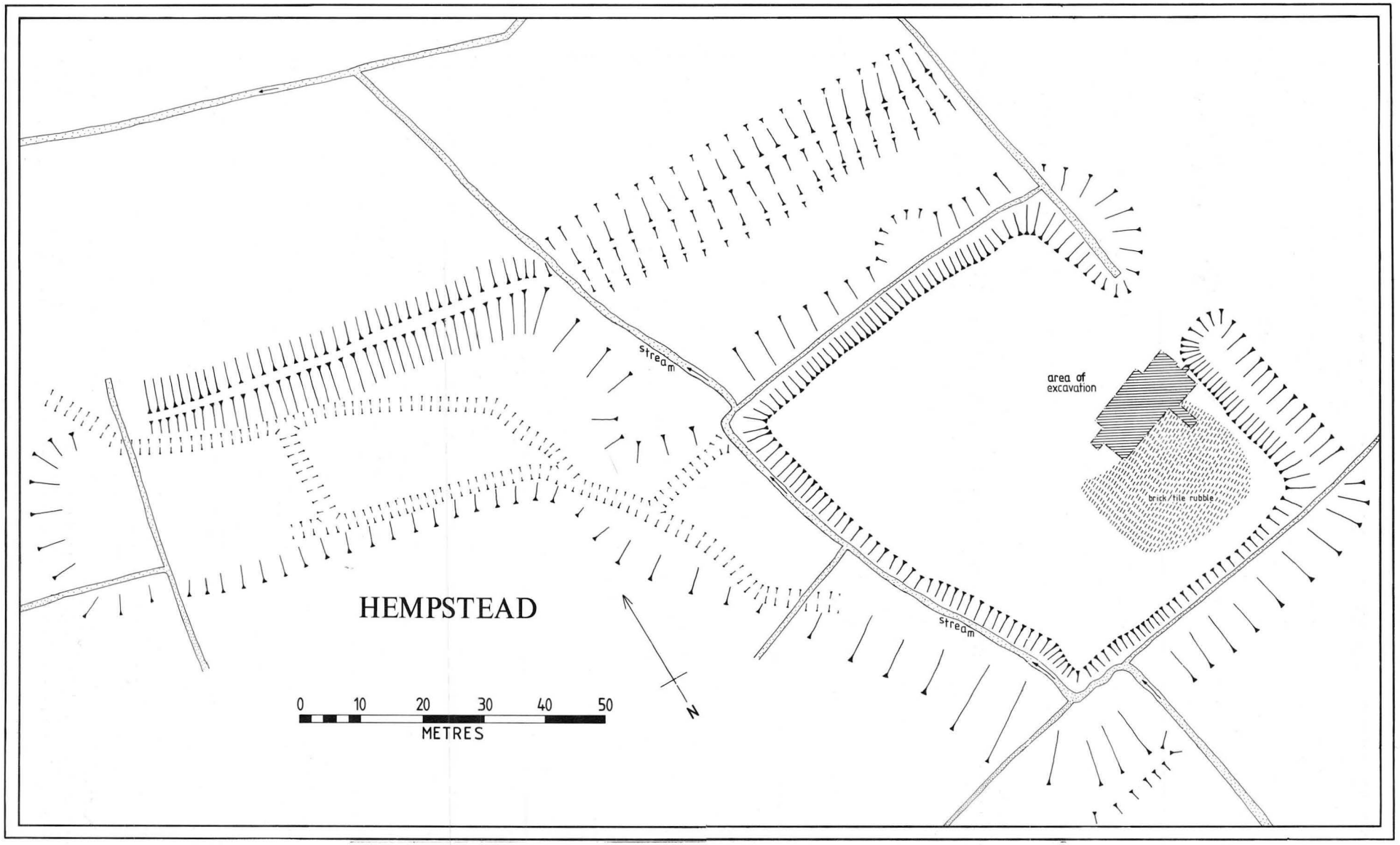


Fig. 30. Plan of earthworks, showing location of excavation.

drainage ditches. Their average depth below the interior surface was 1.7 m. The island was not raised above the level of the surrounding land except in relation to the field to the east which was c. 40 cm lower than the island at its western end.

Although levelling operations involved a considerable amount of earth moving, it was possible to plot with reasonable accuracy the different soil marks within the moated enclosure. The western half was covered with loamy 'garden' soil. The north eastern quarter consisted of spreads of gravel with patches of clay, while the south eastern quarter contained loamy soil with brick, tile, and mortar rubble.

North of the enclosure was an east to west double bank with traces of a ditch on its north side. The banks were 35 to 45 cm high.

To the north west an approximately rectangular area was defined on the north by a bank c. 75 cm high, while the west and south sides were scooped into the natural slope of the valley side. The approximately flat interior of this area, which bulldozing showed was covered by black peaty soil, was cut by several linear features, presumably ditches, c. 1.50 m wide and 10 to 25 cm deep. One of these shallowed out and became untraceable after it passed through a gap in the north west corner which was heavily disturbed by a modern drainage ditch. Whatever may have been the original function of the rectangular area it seems likely that the smaller linear features are secondary attempts at drainage. After bulldozing they disappeared, while the substantial northern bank was shown to be constructed of yellow chalky clay.

IV. THE DOCUMENTARY EVIDENCE
by David Yaxley

The documentary evidence that survives for the parish of Hempstead by Holt is remarkably scanty. A rental, undated but possibly of fourteenth century origin, gives the names of a number of tenants and a few fields and locations (Norfolk Record Office, DCN R232D Box 2). A rental of the later sixteenth century (NRO, NRS 23368), besides relating mainly to parts of the manor of Netherhall in Bodham and Baconsthorpe, is useless for topographical purposes, and the surviving court books begin only in 1613 and, as is usual with this class of document, yield no information about the manorial sites (NRO, NRS 23877). The muniments of the family that held the manors in the nineteenth century are, at the time of writing, uncatalogued and inaccessible.

The entry for Hempstead in Domesday Book is hardly encouraging. Under the royal manor of Holt we find: 'To this manor belongs 1 outlying estate in Henepstede of 30 acres. Then as now 5 bordars and 1 plough and half a plough belonging to the men. Wood for 6 swine. Then as now 8 swine. Then it was worth 5 shillings and 4 pence, now 33 shillings and 4 pence and it is 1 league in length and 1 in breadth and renders 7 pence in geld' (Domesday Book, f. 112; V. C. H. 1901, 42). If we ignore the Pond Hills area in the south of the parish the measurement seems to be more or less the right proportion. Also in Hempstead was an outlying estate of the bishop's manor of Thornage, but no statistics for this are given (Domesday Book, f. 192; V. C. H. 1901, 115). Nothing seems to be known of the descent of the main estate for a hundred years after Domesday Book, but in 1182-3 one Simon de Hempstede was lord of the manor. The de Hempstede family held it until shortly before 1239-40, when Richer, son of Hugh de Causton, and Stephen de Causton, both of whom married heiresses of the de Hempstedes, were lords (Blomefield 1808 IX, 392). According to Blomefield, this Richer son of Hugh confirmed land in Hempstead to Thomas, son of William de Lose, thus presumably creating the manor subsequently known as Lose Hall (Blomefield 1808 IX, 393). In 1292-3 William de Ormesby was lord of the original manor, perhaps obtaining it through marriage as his wife Agnes joined with him in a grant of the advowson of the church to the Prior of Norwich. The manor continued in the de Ormesby family until at least the middle of the fourteenth century. In 1350, when Sir John de Ormesby died, it was called the manor of Hempstede

with the market; no market grant has been found, however, and the name may simply refer to Holt market as one way of distinguishing the village from the other of the same name in East Norfolk (Blomefield 1808 IX, 392; Cal. Inq. IX, no. 535; Cal. Close 1349-54, 165). Sir John's inquisition shows that after his death the manor reverted to his kinsman, William Caly. In 1399 Sir William Caley of Oby was lord, but he died soon after this and in 1401-2 it was held by his widow, Lady Alice Caley. Her daughter Agnes married Sir John de Harsike of South Acre, and the de Harsikes held it until Joan Harsike took it as dower when she married Richard Dorward, who was lord in 1454-5. From the Dorwards it went by marriage to the Wingfields of Great Dunham, and in 1536-7 it was conveyed to Thomas Jermyn (Blomefield 1808 IX, 392-3; Bryant 1890-1906, 65). The descent in the next hundred years is obscure, but it may well have joined Lose Hall manor in the hands of the Heydons of Baconsthorpe, for in 1638 both manors appear in a conveyance which resulted in Robert Baynham of Edgefield becoming lord. As the conveyance included much land in Baconsthorpe it is reasonable to assume that the manors had been part of the Heydon estate, which was now in decay (NRO, NRS 10177; NRS 23877-8; the court books in the latter reference contain both manors from 1613 onwards, but no lord's name is given until 1638). A good series of court books for both manors enables the following manorial succession to be compiled:-

1649 Thomas Berney Esq.
1674 John Berney Esq.
1681 John Hobart, John Mingay, and John Herne Esqs.
1683 Thomas Newman
1698 William Newman
1729 Michael Russell
1787 Michael Collinson
1796 Emerson Cornwell and Thomas Collinson

(NRO, NRS 23877-23883; HET 1 & 2)

Soon after this both manors passed into the hands of the Gurney family, who had been interested in Hempstead since at least 1774 (NRS, HET 2, sub 1774).

The manor of Lose Hall had an equally involved history before the seventeenth century. Following the original grant, the de Lose family held it from the middle of the thirteenth century, and William de Lose was seised of it at his death in 1287-8 (Blomefield 1808 IX, 393). According to Blomefield, after the death of William's son Thomas without heirs it passed to his sister Claricia, wife of Thomas de Ubbeston, and Blomefield repeats this descent in his flimsy account of the manor of Lose Hall in Plumstead (Blomefield 1808 VIII, 147). The Nomina Villarum of 1316, however, gives Beatrice de Lose as one of the lords of manors in Hempstead, which throws doubt on Blomefield's further assertion that at this time the manor was in the hands of the Prior of Norwich. In any case, the Prior was named as the second of the manorial lords in the Nomina Villarum (Blake 1952, 273; Blomefield 1808 IX, 393). John de Loose still held lands in Hempstead in 1340 (Cat. Anc. Deeds, II, 158). Blomefield goes on to state that the Prior granted Lose Hall manor to Henry Heydon in 1483-4 on his releasing lands in Hindringham to the Priory, but he also says that John Heydon, who died in 1479, 'died lord' (Blomefield 1808 IX, 227, 393; Bryant 1890-1906, 66, cannot be right in putting the date of the grant to Henry Heydon at 'about 1400'). Whatever the date of the grant to the Heydons, Sir Christopher Heydon was lord at his death in 1579, and in 1591-2 Sir William Heydon assigned it to Thomas Fermor of East Barsham. 'Soon after this,' says Blomefield, Thomas Croft and Thomas Oxburgh had a praecipe to deliver it to Edmund Stubbe and Thomas Thetford. It was certainly in the hands of the same lord as the original manor, Netherhall, from 1613, and its subsequent descent has been traced above.

The Prior of Norwich had land in Hempstead in the late twelfth century, and was named as a manorial lord in the Nomina Villarum of 1316 (Blake 1952, 273). The rectory was appropriated to the Priory in 1249 and a vicarage settled (Blomefield 1808 IX, 393).

There was, presumably, a small rectory-house, but the records of the Dean and Chapter are almost completely innocent of references to the 'estate'. It yielded an income of £1 in 1254 and 1291 (Hudson 1910, 97) and the value of the farm of the rectory was £2 13s. 4d. in 1535 (Dugdale 1823, 22). In 1629 the rectory, parsonage house, and barn were mentioned in a leasing agreement between Edmund Britiffe senior and junior and the Dean and Chapter (Williams and Cozens-Hardy 1953, 68), and in 1704 the Dean leased to Edmund Britiffe 'the scite of the Rectory' and the parsonage impropriate (NRO, NRS 12052). The 'scite of the rectory' and the barn 'or Ruins of barn' were the subject of a lease to the Earl of Buckinghamshire in 1761 and 1781 (NRO, NRS 15057-8) and although the Dean and Chapter do not occur as owners in the tithe award of 1841 they were still leasing the rectory to Lady Suffield in 1837 and 1844 and to the Marquess of Lothian in 1865. The muniments of the Dean and Chapter are still in the process of being sorted and catalogued, and it would have taken an inordinate amount of time to sort through the mass of leases, grants, and deeds.

So we have three manors: Netherhall, Lose Hall, and the rectory. It is certain that the excavated site was a manorial one, for the earliest surviving glebe terrier - a copy made in 1677 from an original of 1613 - describes the site of the vicarage as 'adioyning to the churchyard south and abutteth upon the high way east and upon the mannor close west' (NRO, Hempstead Glebe Terriers). Which manor was it? Blomefield, under the heading of Lose Hall manor, says 'The manor-house, now demolished, stood in a close adjoining to the church' (Blomefield 1808 IX, 393). He gives no evidence for this identification, but it seems likely that he based it on the fact that the other obvious site, Hempstead Hall, was that of the manor of Netherhall. This lies in a shallow valley half a mile to the west of the church, so that in this context 'Nether' must mean 'lower'. Nethergate occurs as a road-name in the rental tentatively dated to the fourteenth century (NRO, DCN R232D, Box 2). The field road running due south from Hempstead Hall is called Narrowgate Drift on the tithe map of 1841. The earliest reference found to 'Hempstead Hall' is in the court book of 1694, when there seems to have been a 'highway' leading direct from the church to the Hall (NRO, NRS 23883). As Lose Hall was a thirteenth-century offshoot of the original manor one might have expected the latter to continue to occupy the site of the church, a typical relationship for an early manor-house and church. However, it looks as if the de Caustons left the de Loses in possession of the original site while they themselves moved to a new site in the centre of the western half of the parish, perhaps recently brought under the plough[2]. It is also noteworthy that the leet jurisdiction, at least in the seventeenth century and later, belonged to Lose Hall and not Netherhall. The occupation of 'Hempstead Hall' as the main manor-house may date from the first half of the seventeenth century when both Netherhall and Lose Hall came into the hands of one man. The drawing of the house on a map of 1726 (NRO, HET 87), shows an L-shaped house with a main south-facing wing of six bays, with a slightly off-centre porch and three chimney-stacks. This is a form of house that was common in the period 1550-1660, with a preponderance of Norfolk examples coming from 1590-1650. It is unfortunate that none of the eighteenth century maps of Hempstead cover the excavated site, although the great probability is that there was no recognisable building on it by that period. However, it is slightly puzzling that although William Newman was lord of both Lose Hall and Netherhall at that time, the maps of his property made in 1726 and 1728 (NRO, HET 87; 74 BCH) cover only Green Farm, Barn Farm, and Hempstead Hall Farm, and omit our site. It is only in 1833, with the map of the estate of Richard Gurney's executors, that the site is included with the land of the other two manors (NRO, 1833 map on map rack).

Could our site be that of the rectory? The rectory occurs in the leasing agreement of 1629, which covered the rectory estate 'excepting the parsonage house and yard, and half the parsonage barn to be maintained by the vicar there'. By 1704 the rectory had become a 'scite', although this need not necessarily imply that there were no buildings there. The glebe terrier of 1613 places the vicarage to the south of the church and between the road and the manor close and describes it as 'a dwelling house and a barne

with one little outhouse commonly called by the name of the Vicarage house and Vicarage barne and of some the vicarage house and the parsonage barn both builded by the vicars here before Instituted'. It goes on to state (in 1677) that 'in the late times of the unhappy rebellion... the Vicarage house fell downe to the ground and was utterly demolished so that now we have no house upon the vicarage ground'. That the vicarage house and the rectory house were one and the same is proved conclusively by the Parliamentary Surveys of 1649-53, which describe a house, barn, and yard, which for many years have been allowed to the vicar for habitation (Lambeth Palace Libr., Parlty. Surveys XIII, 70). The site, therefore, cannot be that of the rectory house.

On balance it looks as if Blomefield's identification of the site as that of the manor of Lose Hall is correct. In that case the early fourteenth century floor tiles must have been installed by the de Lose family. By the nineteenth century all memory of the former manorial status of the site seems to have gone, for the title map of 1841, although recording the owner of the field as Richard Gurney, the lord of both secular manors, simply names property number 129 'Church Meadow'.

V. THE EXCAVATION
(Figs. 31 and 32)

METHOD OF EXCAVATION

The approximate point at which the tiled pavement had first been found, was re-located by rough measurement. The plough soil was then shovelled off by hand down to a depth at which only the scars left by the point of the plough were visible. The area was extended beyond where traces of robbed walls were noticed. Plough soil was removed from all the area shown in Fig. 31 but natural subsoil was only reached in a trench dug east to west through the centre of the building. The easternmost 1.30 m of Section A-A was excavated mechanically.

DESCRIPTION OF EXCAVATION

Features earlier than the building

A layer of brown silty sandy loam (9) lay over natural yellow silty loam beneath the eastern part of the building. Where it passed beneath the tiled pavement (6) it contained occasional mortar and brick fragments (layers 19 and 21). A post hole (10) was filled with soil similar to layer 9. Pit 12 appeared to be sealed by layer 9; its base was not reached. Linear feature 8 was filled with almost black silty sand and numerous fragments of calcined flint. It was cut into the surface of natural and was sealed beneath layer 9 (this is not apparent in Section A-A). Pit 11 was cut through feature 8 (Section B-B). It may also have cut layer 9, but the section was ambiguous. Fragments of mortar were found in the top fill (16) of this pit, but not in the bottom layer. It is likely that this lowest layer which contained a sherd of probable prehistoric pottery may have been derived from feature 8.

A probable ditch (20) appeared to be sealed beneath layer 19 (Section A-A, not shown on Fig. 31). It was cut through the natural silty loam into almost green chalky clay and was probably recut on several occasions.

The building (Plate VI)

The robber trenches for the north and south walls (4 and 5, Section C-C and D-D) had uniform fills of silty sandy loam with flints, often with mortar adhering, lumps of mortar, broken floor tiles and bricks, and fragments of plaster. At the west end of 5 a patch of mortared flints remained in situ. These formed part of cross-wall 23 which was first part recorded in plan and then later seen only in section slightly further north (Section A-A) as a feature filled with sand, mortar fragments, and clay. It was not possible to

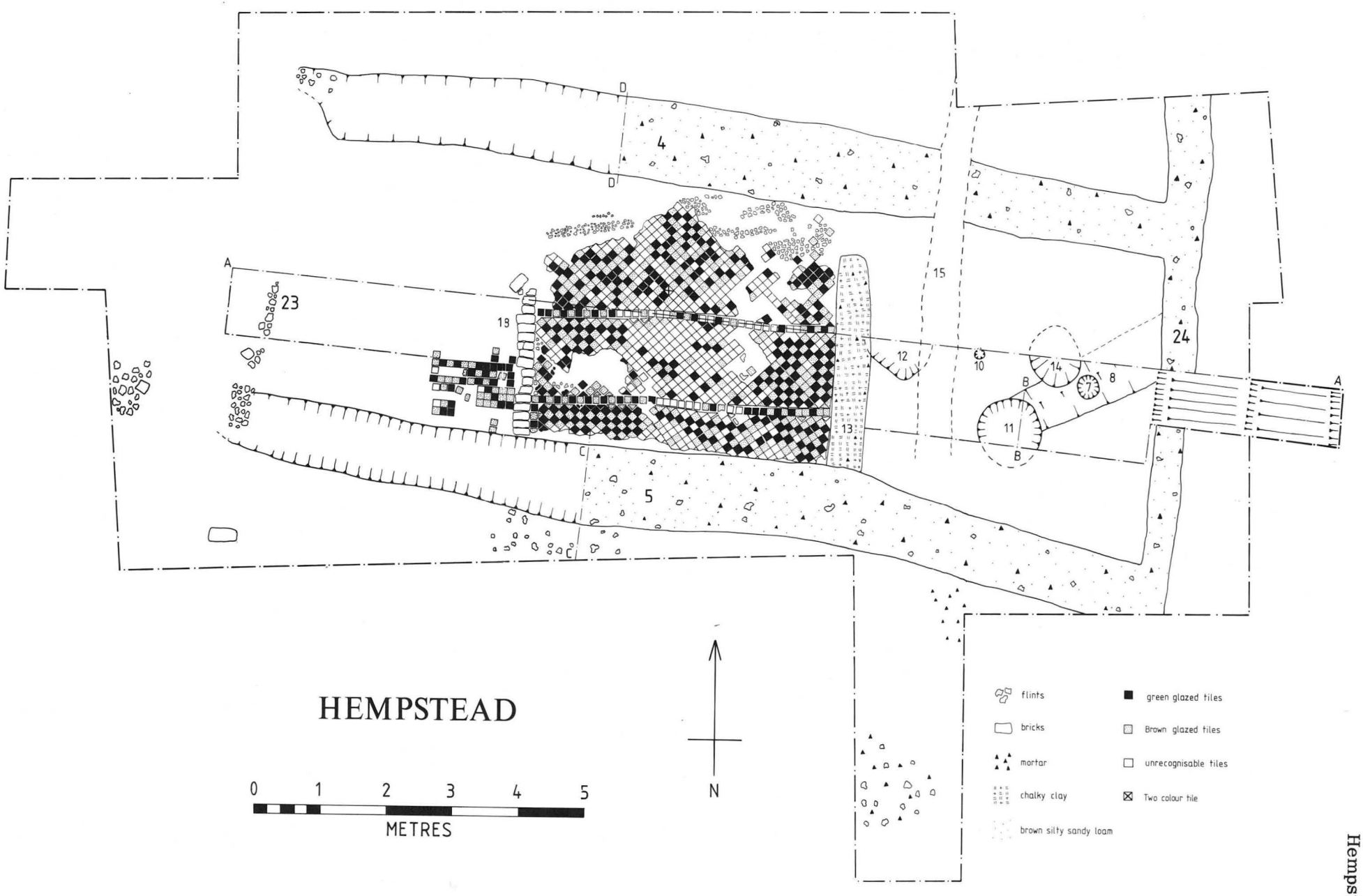


Fig. 31. Excavation plan, showing colours of tiles.

HEMPSTEAD the sections

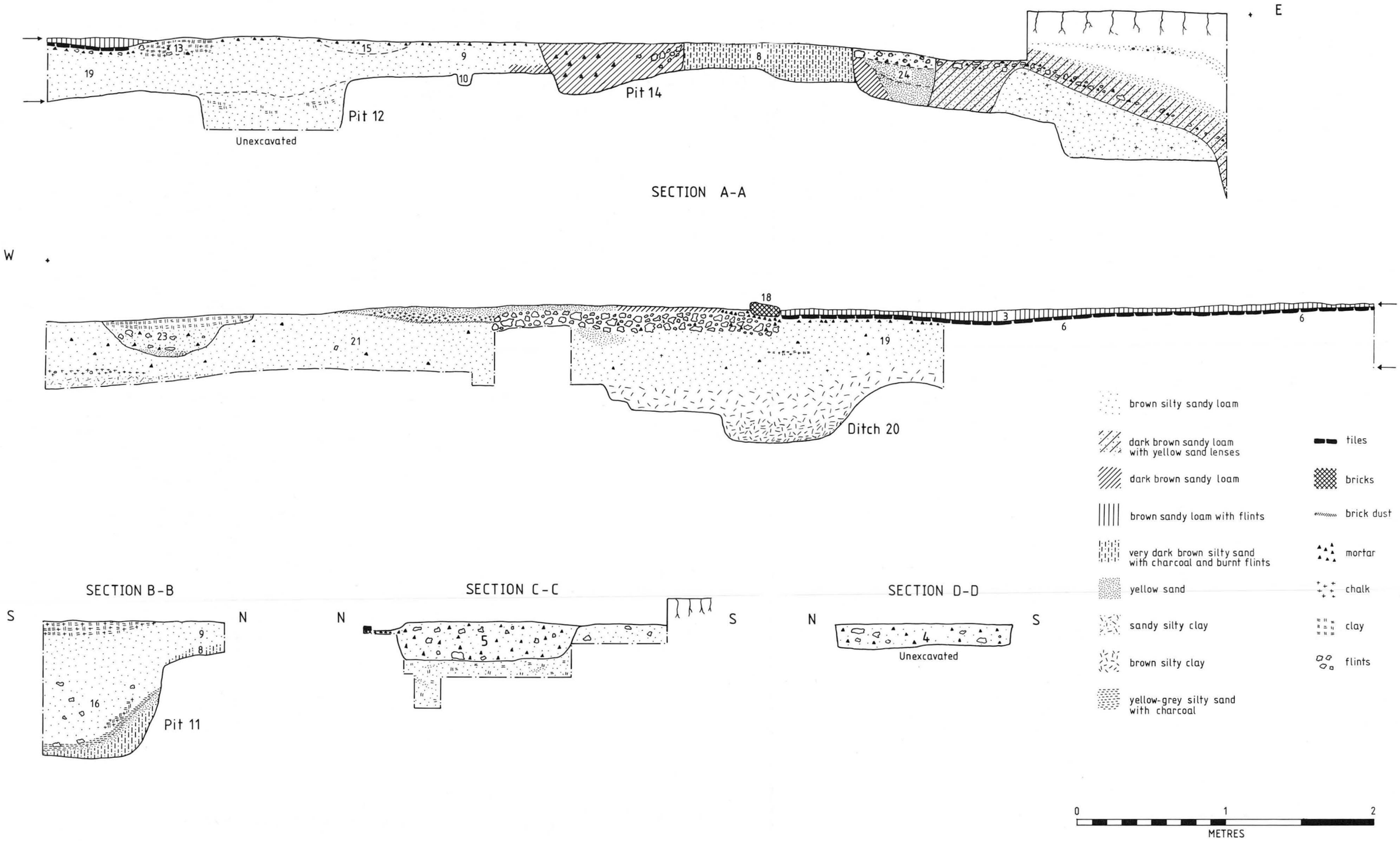


Fig. 32. Sections A-A, B-B, C-C, and D-D.

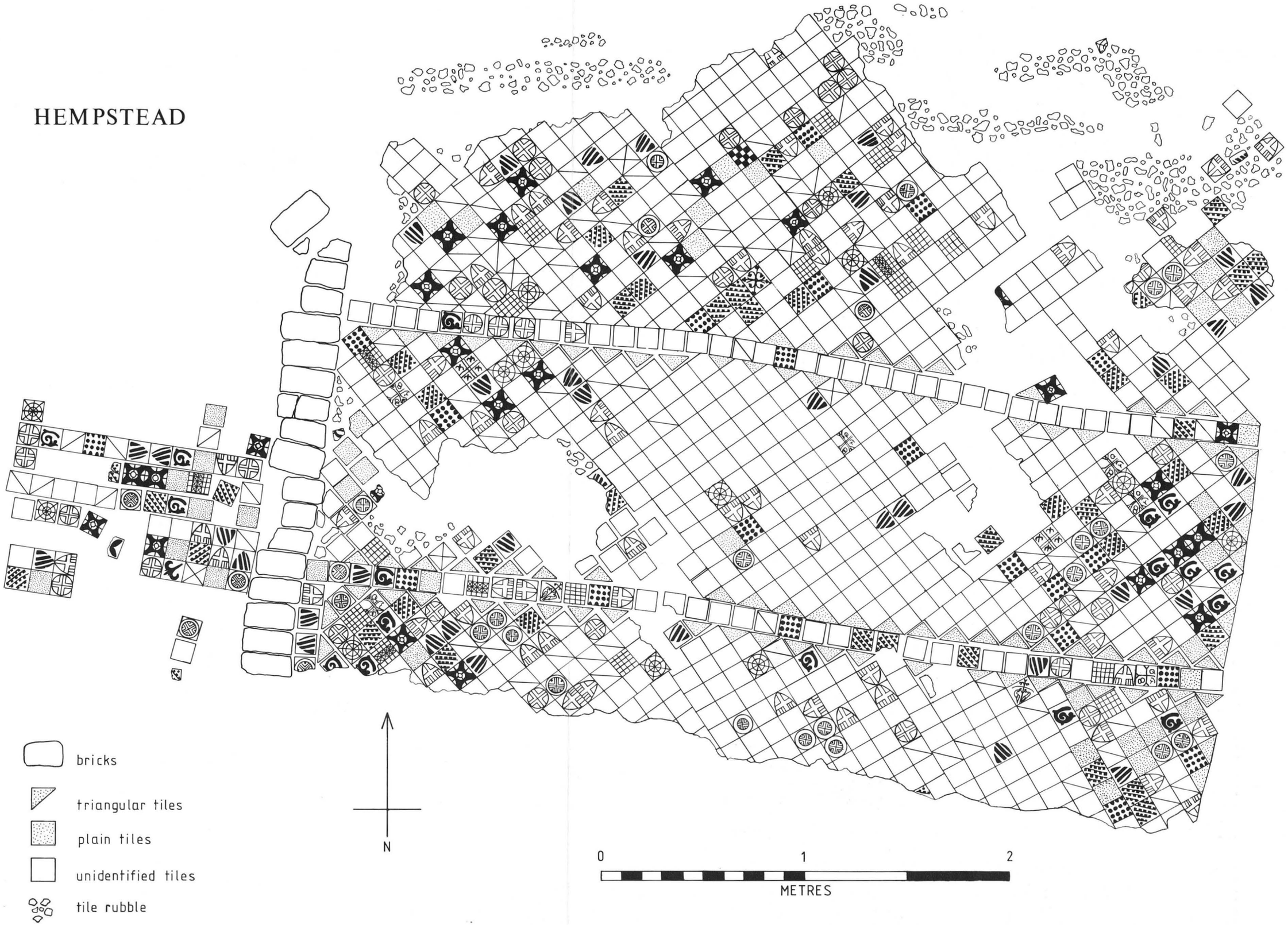


Fig. 33. Plan of tiled pavement.

Photo: Andrew Rogerson ZM 1A

Plate VI. Hempstead: general view of the excavation from the east.

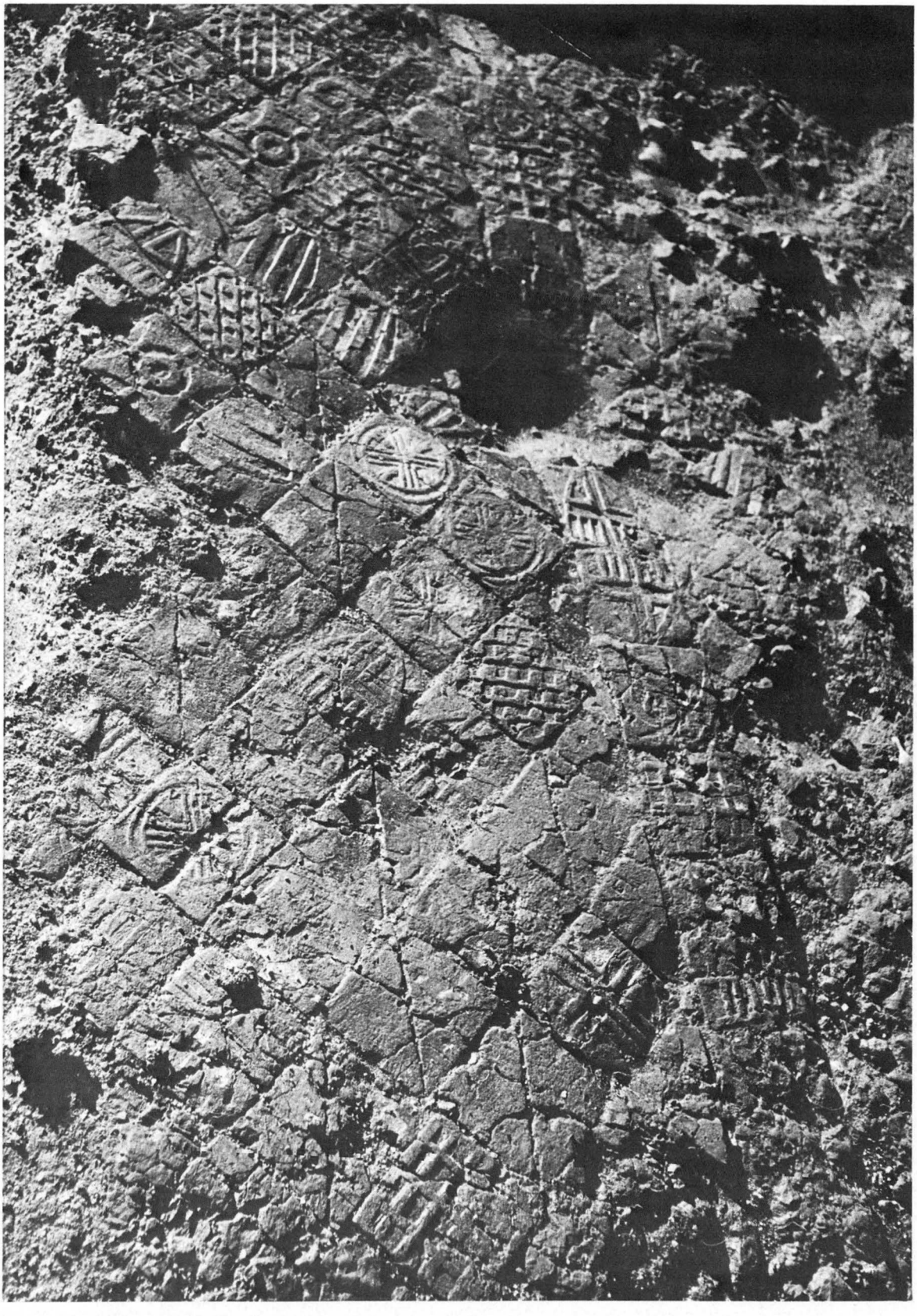


Photo: Margaret Durst

Plate VII. Hempstead: detail of south west area of the tiled pavement in the central room, from the east.

trace it in plan beyond the line of this section. The filling of the robber trench for the eastern wall (24) was not distinguished from those of 4 and 5. 24 extended to the north beyond its junction with 4. The evidence shown in Section A-A for feature 24 is difficult to understand. The rubble visible on the surface lay over a mixture of brown sandy loam and yellow sand, perhaps a bedding trench. This was cut into natural and into a chalk flecked soil which overlay a large flat-bottomed feature cut into natural. The western lip of the moat is visible at the eastern end of Section A-A.

Internal wall 13 consisted of a linear band of yellow/green chalky clay with mortar flecks. Its termination to the north probably represents a doorway. A post hole and a small pit (7 and 14) were cut through the disturbed top layer 9, as was a linear stain of slightly darker loam 15. No evidence of a floor survived between walls 13 and 24.

Wall 18 was constructed with bricks mortared together and set on a mortar bed. Below this a band of flints extended to the west. To the north of Section A-A ploughing had completely removed 18, but the underlying flint band survived up to 1.50 m north of the section line. A layer of yellow sand above these flints underlay the surviving tiled pavement to the south.

The tiles west of wall 18 were set on a 2 to 4 mm thick layer of grey sandy mortar which overlay the yellow sand mentioned above. The distribution of disturbed tiles in the ploughsoil showed that the pavement had extended northwards towards wall 4, but not very far to the west, perhaps no further than the west end of the underlying band of flints. The yellow sand extended further westwards, but there, no trace of floor survived.

The central room, between walls 13 and 18, had originally been totally tiled, the tiles being set on a bed of hard light grey mortar. The northern part had been so heavily disturbed by ploughing that few tiles remained in situ.

The areas of unidentified tiles on Fig. 33 correspond to the areas of greater wear. The middle of the central room was the most worn, many tiles being without their upper surfaces and totally smashed, although still in position. In some areas no tiles survived, and the underlying mortar had been disturbed. Examples in the western room were generally in much better condition. In the southwest corner of the central room an area c. 60 cm north to south and 2 m east to west, contained particularly unworn tiles (Plate VII). Perhaps they were protected by a piece of furniture, although less wear might be expected in the corner of a room. A strip along the western side of wall 13 was also in good condition.

Immediately north of Section A-A (where it is just visible) and east of the north end of wall 18 the floor had subsided by c. 10 cm forming a roughly circular hollow, c 1.50 m in diameter. This probably reflects collapse into an underlying feature.

The whole of the central room, except for the northern disturbed part, was covered by a layer of dark brown sandy loam with numerous unmortared flint pebbles and occasional fragments of tile and brick (3). This layer was not present in the other rooms. It did not contain obvious demolition rubble as did the overlying ploughsoil, and probably represents some secondary use of the building prior to its demolition.

VI. THE ARTEFACTS

IRON

Thirty square-sectioned nails were scattered throughout layer 3 over the central room. The largest is 8.5 cm in length, the smallest 2 cm. 66% are between 4 and 4.5 cm long.

STONE

Three fragments of fairly soft calcareous limestone were found in the ploughsoil over the western room. One has a face showing clear but uneven claw marks. Another has three surfaces with fine claw markings, and appears to be part of a rectangular block with a plain chamfer across one arris.

THE POTTERY

The small quantity of pottery found on the surface of the enclosure is predominantly medieval, but includes some post-medieval material. The excavated ploughsoil produced ten medieval sherds and eighteen post-medieval and modern sherds.

The stratified material comprises: possible prehistoric flint gritted sherd (pit 11); sherd of Early Medieval Ware (eleventh to twelfth century, post hole 10); ten medieval cooking pot sherds (thirteenth to fourteenth century, layers 19, 21 and ditch 20), five sherds of glazed Grimston ware with line and dot decoration in brown slip (thirteenth and fourteenth century, layer 19), and the examples illustrated below.

Fig. 34, No. 1 Rim and body sherds of cooking pot, pit 12. Sandy, micaceous, fairly hard, grey, sooted external surface with rough finishing on neck; Early Medieval rim form (Hurst 1963, fig. 8) but medieval fabric (Rogerson 1976, fig. 56, no. 69).

Fig. 34, No. 2 Rim and handle of pitcher, pouring lip missing, layer 21. Sandy, micaceous, fairly hard, grey with light red surfaces; patchy underfired pinholed matt pale yellow glaze on exterior and handle; medieval.

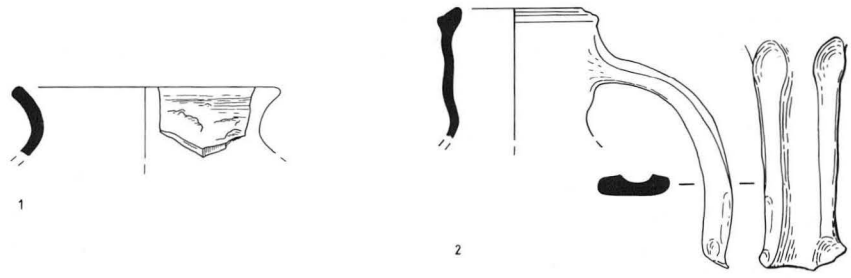


Fig. 34. Pottery. Scale 1:4.

BRICKS

Moulded bricks were found unstratified, in robber trenches 4 and 5, and in situ within wall 18. All fall within a close range of measurement; 26.5 to 28 cm x 11.5 x 14 cm x 6.5 to 7.5 cm. Colours vary between and within bricks: yellows, pinks, and purples predominating. Many examples show a streaked section with lenses of different colours. The fabric is fine grained with occasional rounded pebbles up to 20 mm across. All faces are covered with a thin spread of sand, except for one long face (Harley 1974, 67) which carries a shallow recess along each long edge. This suggests that Harley's Method 4b was used in the shaping process. Straw marking is visible on all surfaces except for the long face with recess, and occasionally in section as well. One incomplete unstratified example was plain-chamfered at one corner. This was perhaps employed in a door or window jamb (Le Patourel 1973, fig. 34, 10 and 11; Smith 1975, fig. 16, no. 41).

THE FLOOR TILES (Plate VII)
by Elizabeth Eames

(Excavators' note: 972 rectangular tiles were recorded in situ in the central and western rooms. Of these 518 were unidentifiable. 61 triangular tiles, design Bii, also occurred. All these were certainly broken design Bi's and are shown stippled on Fig. 33. A further

thirty five complete tiles were found in the ploughsoil both before and during the excavation. Mostly, if not all, of these were from soil over the western room. Fragments of all the most frequent designs were recovered from robber trenches 4 and 5 and from the ploughsoil.

190 tiles were lifted at the end of the excavation and each was allotted a separate context number. In general the unworn tiles in the western room were lifted intact, while those in the central room, both worn and unworn, cracked into many fragments when moved. A selection of the more common designs and all recorded examples of the rarer designs were salvaged. The identifications and orientations shown on Fig. 33 were carried out on site before any tiles were lifted. In the case of the more worn examples, low-angled sunlight was particularly necessary to ensure correct identifications. In some instances tiles that were certainly decorated could not be definitely identified. It is very likely that the correct number of plain tiles was greater than Fig. 33 suggests. For, while tiles with relief decoration could often be recognised even when worn, this was not possible with undecorated examples.

It is possible that some design J's were in fact design K's. The latter was very close to design J, but only one example, and that unstratified, was identified.

Glaze colour has been divided into brown and green (Fig. 31). There was considerable variation within each colour, and in some cases they merged into each other. Colour was sometimes identifiable where the design had been worn away.

During preparation for drawing, all lifted tiles were visually compared, and drawings were then made from individual examples where possible. Drawings of designs R, T, and V (Fig. 36), however, were made from several examples because all were so fragmentary and/or worn. Design X (Fig. 37) the only example of a two-colour tile, retained its original surface, but because it was so obviously cracked, it was drawn before it was lifted.)

The remains of two tile pavements in adjacent rooms, one at a slightly higher level than the other, were recovered during the excavations. The tiles at the higher level had been badly disturbed by ploughing; those at the lower level, many of which were already worn, had been crushed by heavy agricultural machinery passing over the ground. Both groups had been set diagonally to the axis of the building, those in the lower room in three panels running down the length of the room separated by single rows of tiles set square. As far as the excavators could ascertain there was no systematic arrangement of plain and decorated tiles or of different decorative designs either in the panels or the borders. The position of the tiles in the pavements was planned and all that could be recovered were removed.

The excavators recognized three categories of plain glazed tiles, A-C, and twenty different decorative designs, D-X omitting I, and compiled a table of the number of each present either in position (p) or unstratified (u). They submitted one example or a representative number of fragments of each of the categories B-X. The tiles fall into three groups: I) plain glazed tiles, A-C; II) monochrome tiles with decoration in relief or counter-relief, D-W; III) two-colour tiles with decoration in white clay, X. All are about the same size, ranging from 106 to 119 mm across and from 21 to 27 mm thick, most being wider across one way than the other. They appear to be made of the same fabric and may be regarded as the products of the same tilery. There are no keys in the undersides, which are very rough and suggest that the clay was not pressed down in the form as hard as possible when the tiles were being shaped. The sides were cut in the usual way, some with a slight bevel in towards the base, others without one. The clay had been prepared to an average texture but retained some pieces of flint. All but a few of the tiles submitted had been underfired and the body is therefore rather soft. It is a

light orange-red with some pale grey reduced areas. Over this fabric the lead glaze looks golden brown and light olive, but it had not always reached a sufficiently high temperature to turn to glass and it then remains on the surface as a matt dun to khaki coating. The decorative designs were impressed with stamps made of coarse-grained wood and the marks of the grain are visible on many of the tiles. As far as I could judge from the tiles submitted the glaze had been either a lead glaze applied direct to the body to produce brown, or a lead/copper glaze applied direct to the body to produce dark green. Where the glaze had formed sufficiently for the colour to be accurately assessed it appears that insufficient copper had been present to distribute itself throughout the glaze, which therefore has some brownish patches or is mottled green and brown.

In the catalogue that follows the tiles described are those submitted to me, p: followed by a number indicates the number of tiles in the category identifed by the excavators in the pavement, and u: indicates the number found unstratified.

Group I, A-C (Fig. 35)

A. Plain tiles glazed brown or green. (None submitted, p:39; u:6)

Bi. As A but scored across one diagonal to be broken apart into two triangles, after they had been fired, for use at the edges of panels of tiles set diagonally to the axis of the room. These tiles had not been parted and were used as squares. This was common practice and one may conclude that too many rather than too few scored tiles were included in most batches sold. The tile submitted was underfired, one large piece of flint had erupted in the surface which has several small holes where other pieces have fallen out. It is worn with patchy brown and olive glaze, some unfused. (p:78; u:3)

Bii. As Bi but separated into two triangles. (None submitted, p:61; u:0)

C. As A but scored across both diagonals to be separated into four small triangles after they had been fired. These had not been parted but had been used as square tiles. The tile submitted has the surface mainly covered with matt, imperfectly fused glaze but there are a few areas of golden brown glaze. (p:6; u:0)

Group II, D-W (Figs. 35-6)

D. Design based on heraldic vair, set diagonally on the tile, a motif widely used in the later thirteenth century and the first half of the fourteenth, known in several different sizes and forms (Eames 1978, designs 2049-53). The version used here is apparently the same as that found on tiles in Clifton House, King's Lynn, where the cavities are filled with white clay to make the commoner two-colour tiles (Eames 1975, 7-8, fig. 3, pls. III-V). Laurence Keen published a different two-colour version from Campsea Ash Priory (Keen 1971, fig. 39:13). Tile submitted well fired; glaze lead/copper, most of the copper in one half, which is dark green, while the other is speckled green and brown with a few unglazed patches, suggesting that the glaze ran down the tile as it stood on edge in the oven, leaving bare patches at the top and concentrating the copper near the bottom. (p:43; u:5).

E. Quasi- heraldic design of alternate dark and light squares forming a repeating pattern set square on the tile. Such patterns based on checks but carried out in two colours are fairly widely distributed and known in various sizes (Eames 1978, designs 2015-21). Tile submitted underfired; glaze partially fused, speckled green. This tile was probably decorated with the same stamp as some in the British Museum from the site of Chertsey Abbey, Surrey (Eames 1978, 11,069 - 11,071, design 2016). These do not belong to the famous inlaid tiles from Chertsey but to another group of less well-made two-colour tiles, known as the 'Westminster' series, found at places ranging from Kent to Leicestershire and Warwickshire, and probably produced at a number of different tileries. British Museum tile 11, 067 shows an area of body clay at one side

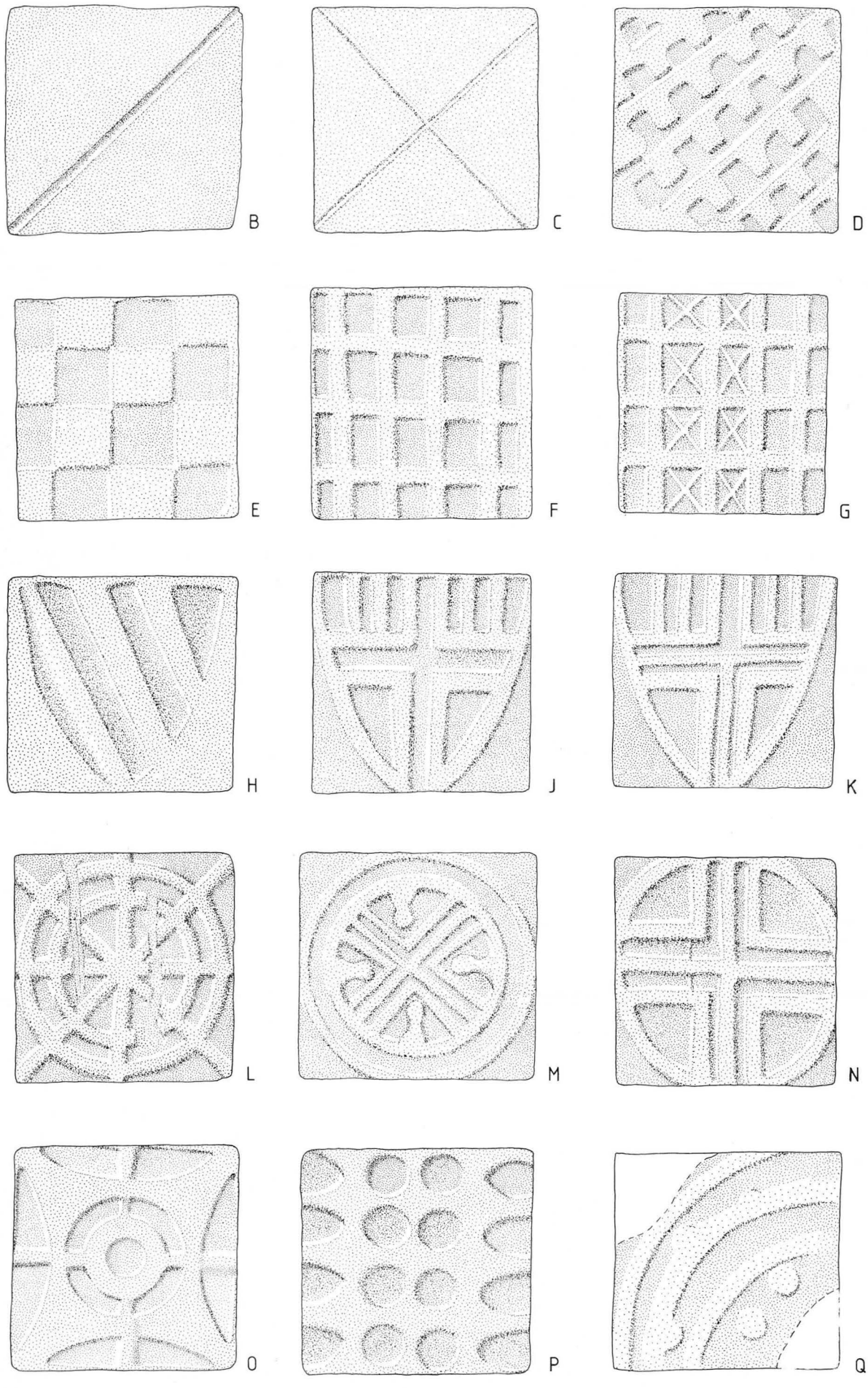


Fig. 35. Tiles: designs B-Q. Scale 1:3.

E. (cont.) where a piece of wood had chipped off the edge of one of the projections on the stamp with which it was decorated, and tile 11, 068 shows an area of body clay where the whole of the edge of the projection had split off the stamp. Design E shows this same defect, where the edge has split off the stamp at the side of the first square below the top right corner, and possibly another area at the bottom right corner suggests further damage to the stamp, which had been made for a slightly larger tile than that submitted. It may be assumed that the tile from Hempstead was decorated with the same stamp as those from Chertsey when it was even more broken. (p:1; u:1).

F. Quasi- heraldic design based on a fret or lattice, set square to the tile, forming a repeating pattern. Tile submitted broken into four pieces and very worn with only a little unfused glaze or slip remaining in some depressions. (p:15; u:0).

G. As F but with crosses added to two rows of the rectangles, not centrally placed on the tile, but running from edge to edge and therefore particularly suitable for use in a border, but not so used in these pavements. Tile submitted broken into five pieces, very worn, some golden brown glaze in depressions. (p:5; u:0).

H. Design a shield of arms, three bends dexter, set square on the tile. Probably the same arms as those on a tile in the British Museum from Swineshead Abbey, Lincolnshire (Eames 1978, 11, 177, design 340). Tile submitted well fired, worn at corners; glaze olive and light brown. (p:44; u:2).

J. Design a shield of arms set square, but not true heraldry; possibly derived from a fimbriated cross with a label of three points. Tile submitted satisfactorily fired, worn at the corners; glaze olive and light brown. (p:65; u:3).

K. Design similar to J but with added lines. Tile submitted worn; some brown glaze in depressions. (p:0; u:1).

L. Geometric design formed from two concentric circles and four lines crossing the tile from side to side and on both diagonals. Two or posssibly three pieces of the inner circle broken off the stamp. Tile submitted worn; some dark green glaze in depressions; marks of the wood grain of the stamp clearly visible. (p:14; u:1).

M. Geometric design a cross within two concentric circles, a small motif between the arms. Apparently the same as the decoration on an unprovenanced tile in the British Museum collections, which is the same size and probably the same fabric, fired successfully. Both could be products of the same kiln (Eames 1978, 13, 521, design 445). Tile submitted worn and damaged; imperfectly fused dull green glaze in depressions. (p:29; u:2).

N. Geometric design comparable to M. Tile submitted worn; some yellowish brown glaze in depressions; decorated with a cracked stamp. (p:37; u:3).

O. Geometric design based on circles and vesicas. Tile submitted well fired, worn; speckled dark green glaze. (p:27; u:4).

P. Repeating pattern of discs and shields, symmetrical on one axis only and therefore suitable for use in a border, but not so used in these pavements. Tile submitted worn; some golden brown glaze in depressions; marks of wood grain clearly visible. (p:21; u:1).

Q. A four-tile design based on three or possibly more concentric circles; outer corner missing, inner corner too worn to be interpreted exactly. It resembles three designs on tiles from the kiln at Bawsey, King's Lynn (Eames 1955, pl. XXVI,

Q.(cont.) xxix-xxxi). Tile submitted damaged, well fired; good mottled dark green and brown glaze in depressions; clear marks of coarse wood grain of the stamp. (p:0; u:1).

R. A four-tile design, on each tile a pair of addorsed birds under one quarter of a circle, which cuts across the conventional tree between the birds, leaving the stiff-leaved foliage outside it in the corner. Addorsed birds are common in Wessex designs in the thirteenth century and are known in many other areas but are not usually combined with the circle present here. If a circle is included it usually surrounds only one pair of birds in a design complete on one tile. This design is better drawn than the rest from this site. About half a tile submitted, satisfactorily fired; dark green and olive glaze; marks of wood grain clearly visible. (p:2; u:1).

S. Design based on a simple spray of stiff-leaved foliage. It looks like part of a scroll. Two examples placed with the open ends together would make a double figure. This design is apparently the same as one in the pavements in Clifton House, King's Lynn, where it is used as a two-colour tile (Eames 1975, pls. III and IV). There also no other part of a scroll is present and this design is sometimes used with several examples placed end to end in the manner suggested but it is also used singly. Tile submitted very worn and damaged; some areas of unfused or decomposed glaze. (p:17; u:1).

T. Design of intricate interlacing foliate sprays with developed stiff-leaved terminals, also present on tiles from Butley Priory, Suffolk (Ward-Perkins 1937, pl. VII: 2; Myres 1934, fig. 5: 1; Eames 1978, 3083-4, design 417; see also Keen 1971, fig. 38: 2 for an example from Campsea Ash Priory). One tile decorated with this design in relief is present in the pavement of the inner room at Clifton House, King's Lynn, where it is entirely different from the rest of the pavement but does not look like a repair. This design is of high quality. Six pieces of two tiles submitted, all very worn, one well fired with traces of dark green glaze, the rest underfired with some unfused glaze. (p:6; u:0).

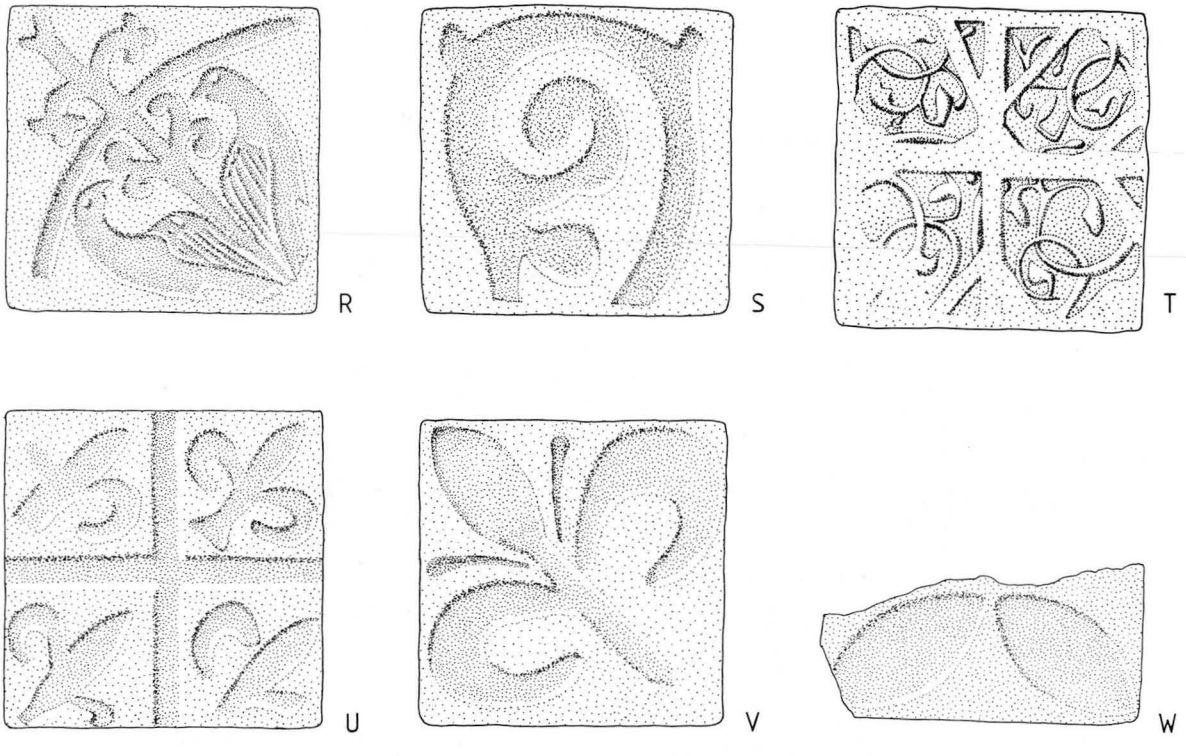


Fig. 36. Tiles: designs R-W. Scale 1:3.

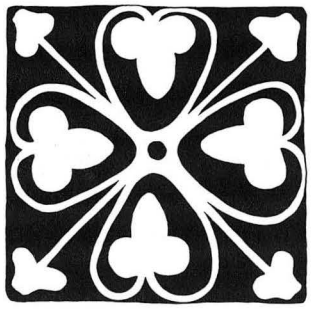
U. Design of four squares, each containing a fleur-de-lis. This is related to, but less well designed than, a design on tiles from the Bawsey kiln, in which all the fleurs-de-lis are placed with the base to the centre of the tile (Eames 1955, pl. XXVI, xxiv; Eames 1978, design 375 and two-colour designs 2205-6). Several fragments submitted, all very worn, most underfired, two with traces of dark green glaze. (p:2; u:0).

V. Design a fleur-de-lis in bloom, set diagonally, outer corner missing. This is a common motif. Tile submitted damaged, worn, underfired, some unfused glaze on the surface. (p:1; u:0).

W. Design a large quatrefoil with pointed petals springing into the corners of the tile. Apparently the same design as that on a two-colour tile in the British Museum belonging to the series made at Penn, Buckinghamshire, but not made of the same fabric (Eames 1978, 21, design 2282; Hohler 1942, 35 and 112, design P80). Half a tile submitted, worn, underfired, coated with unfused glaze. (p:½; u:0).

Group III, X, Fig. 37

X. The decoration is carried out in white clay to produce a two-colour tile. The stamped cavities in the surface are shallow and the white clay was introduced as slip which forms a thin layer in the base of the cavities. The design is a cross, set diagonally, with linked stiff-leaved terminals, closely related to a number of versions known from Wessex (Stevens 1936, pl. VI: 19; Eames 1978, designs 2484-7). (p:1; u:0).



X

Fig. 37. Tile: design X. Scale 1:3.

The excavators were able to identify the decoration or glaze on 550 tiles, of which 193 were plain glazed tiles, but 518 tiles were too worn or damaged for the decoration or glaze to be recognized. Designs D, H, J, M, N and O are represented by more than twenty five examples; designs E, R and U are represented by two or three examples and designs K, V, W and X by one example only. This does not necessarily mean that these designs were so rare in the pavements because other examples may have been present among the 518 unidentifiable tiles. It is, however, possible that the single example of design X was the only one and that it was the only two-colour tile in these two pavements of monochrome tiles just as an example of design T was the only decorated monochrome tile in the two pavements at Clifton House, where the rest of the decorated tiles were two-colour.

Although two designs, D and S, appear to be identical with those on the tiles in Clifton House the two sites were not supplied by the same tilery; the fabric of the bodies is entirely different, that of the Clifton House tiles containing various conspicuous inclusions. It is, however, possible that some of the same men were engaged in the production of both groups, neither of them known to be products of an established commercial tilery, and both probably manufactured locally by itinerant tilers, who possessed stamps derived from several sources. I have suggested the first half of the fourteenth century as the probable date of the Clifton House pavements (Eames 1975, 7-8). The pavements at Hempstead are likely to be roughly contemporary with those at Clifton House but there is unfortunately no feature present that could define the date more accurately. These pavements are important because they furnish another example of the use of decorated tiles in domestic buildings that were neither royal nor ecclesiastical, but the tiles are of poor quality, many of them underfired, and are decorated with designs in several different styles, some of them on stamps that were already cracked or damaged.

November 1977

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1. Accession no. NCM. 519. 976.
2. Recent field work has located a spread of late Medieval and early post-Medieval pottery and building debris in a valley half a mile south west of the excavated site. This concentration (site 11858) which lies close to the southern end of Narrowgate Drift could possibly mark an earlier site of Netherhall manor.

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221-222 Northgate Street, Great Yarmouth

by Stephen Dunmore

I. SUMMARY

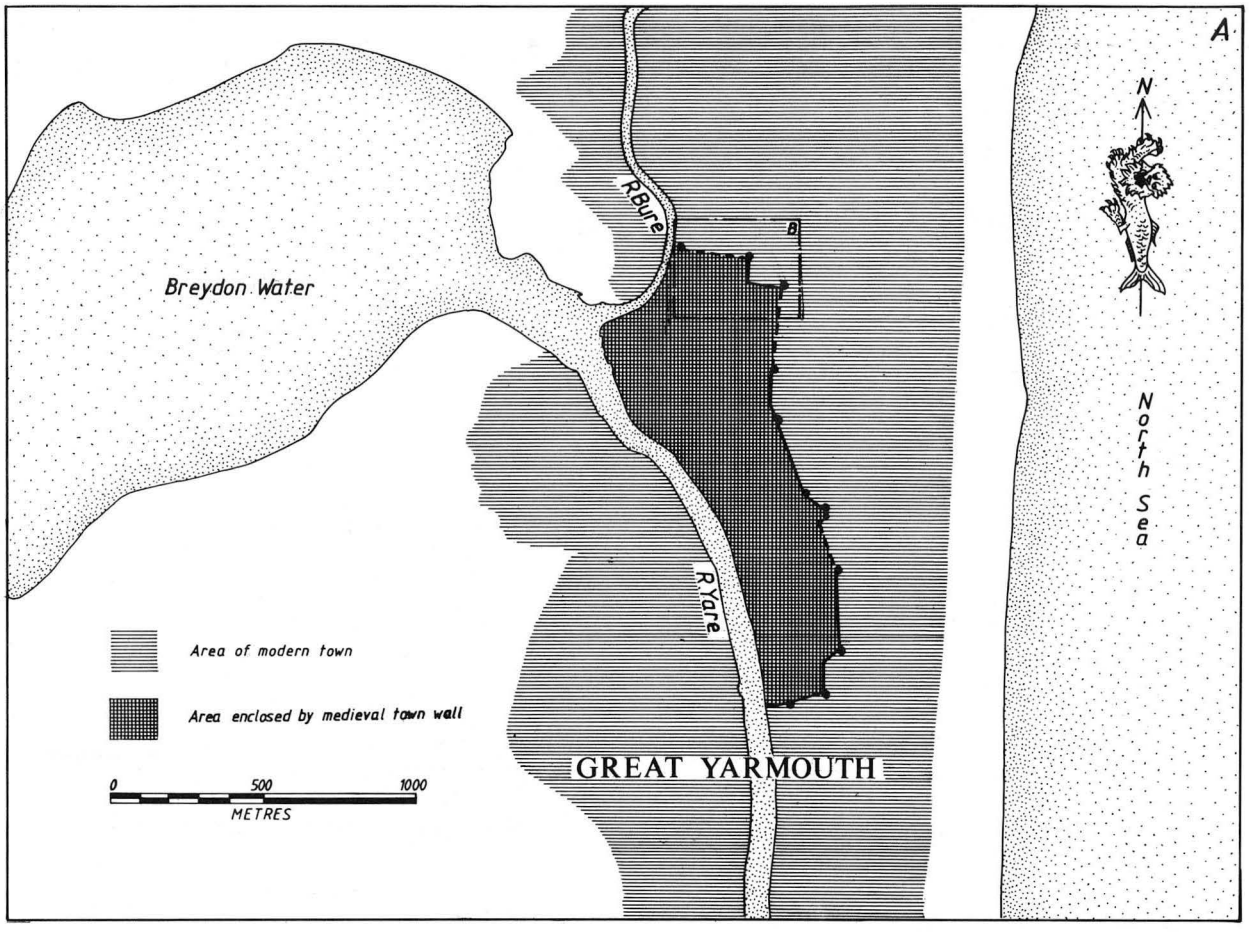
This report examines the historical and architectural development of Nos.221 and 222 Northgate Street, Great Yarmouth (TG 5239 0817, site no.2010). The rear wall of the building was originally part of the north end of a long medieval range which almost certainly stretched from the North Gate of the town to St.Nicholas' churchyard (Fig.38). Within Nos.221 and 222, this two-storied medieval range had been remodelled in the sixteenth and early seventeenth centuries. Further substantial alterations in the late eighteenth and early nineteenth centuries produced the present three-storied building, consisting of three houses (Nos.220, 221 and 222). The medieval rear wall, apart from providing a fine example of the early use of brick, is particularly important because so little domestic building survived the sixteenth and seventeenth century rebuilding in Yarmouth.

II. ACKNOWLEDGEMENTS

Thanks are due to Marie Dewhurst, Andrew Jones, Andrew Rogerson and Robert Carr who gave invaluable assistance in the often unpleasant task of stripping plaster and recording the features revealed. Andrew Rogerson and Robert Carr were also responsible for much of the initial interpretation on site. The writer is indebted to a number of people whose observations were the source of many of the ideas published - in particular, Sylvia Coleman, the late Donovan Purcell, Stuart Rigold, Paul Rutledge, and, not least, Hugh Richmond and Robert Taylor of the Royal Commission on Historic Monuments, whose site report provided guidance for the architectural description. Particular thanks are due to Hallam Ashley for the photographic record and to Nick Adams who prepared Figs.38, 40 and 41. Finally, and by no means least, the writer is grateful to the owners, Asta Properties Ltd., who kindly allowed access, and to Yarmouth Borough Planning Department who have given their cooperation throughout.

III. INTRODUCTION

In 1973, the owners of Nos.221 and 222 Northgate Street were given permission by Yarmouth Borough Council to demolish the building and, in outline, to redevelop the site. The houses had previously been listed by the Department of the Environment as being of special architectural and historical significance (Grade III). This listing was based only on observation of the very late eighteenth century facade (Plate IX).



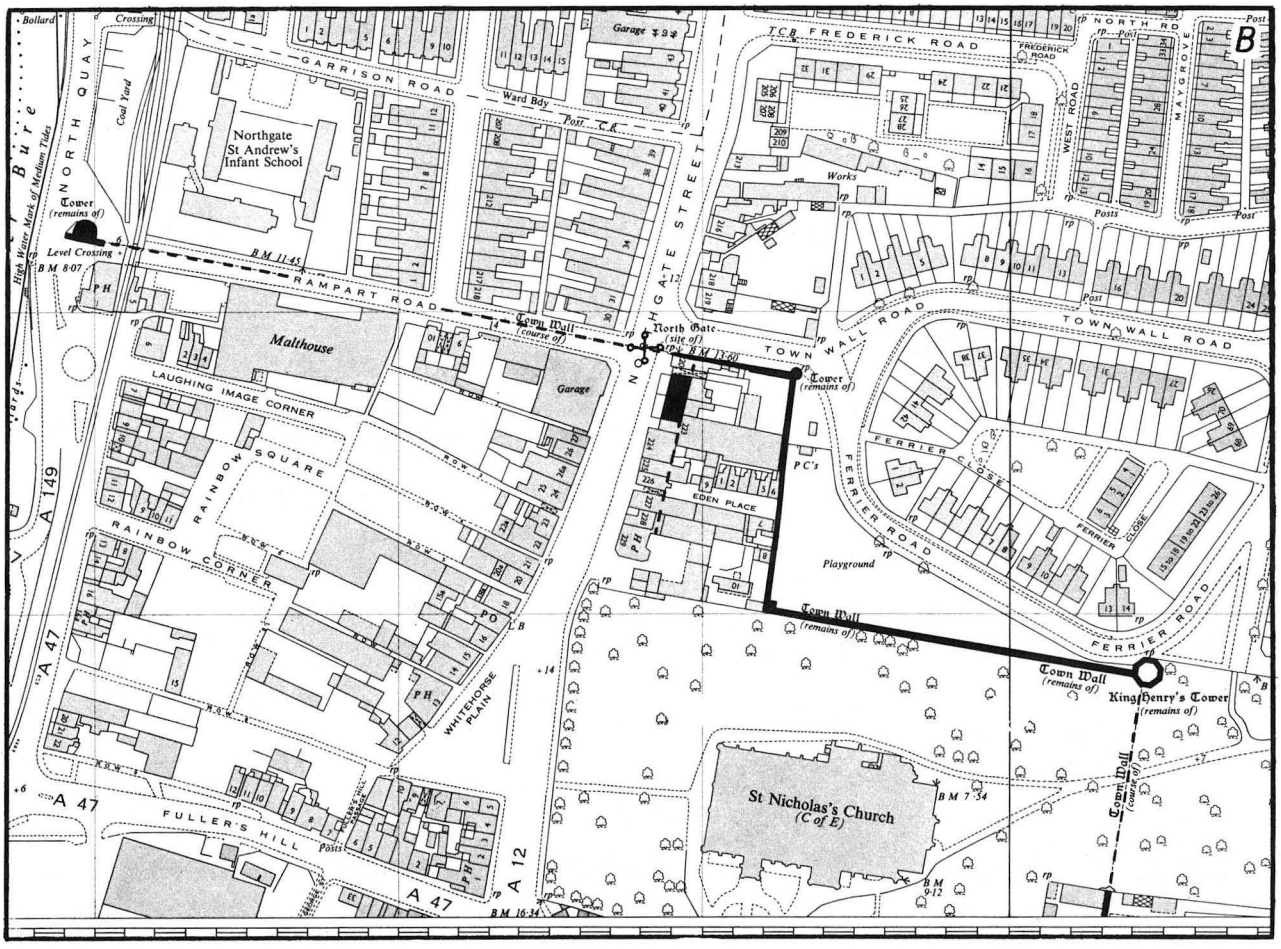


Fig. 38. Location maps of Nos. 221 and 222 Northgate Street including course of town wall, and conjectural continuation to south of the medieval range. B: scale 1:2500.

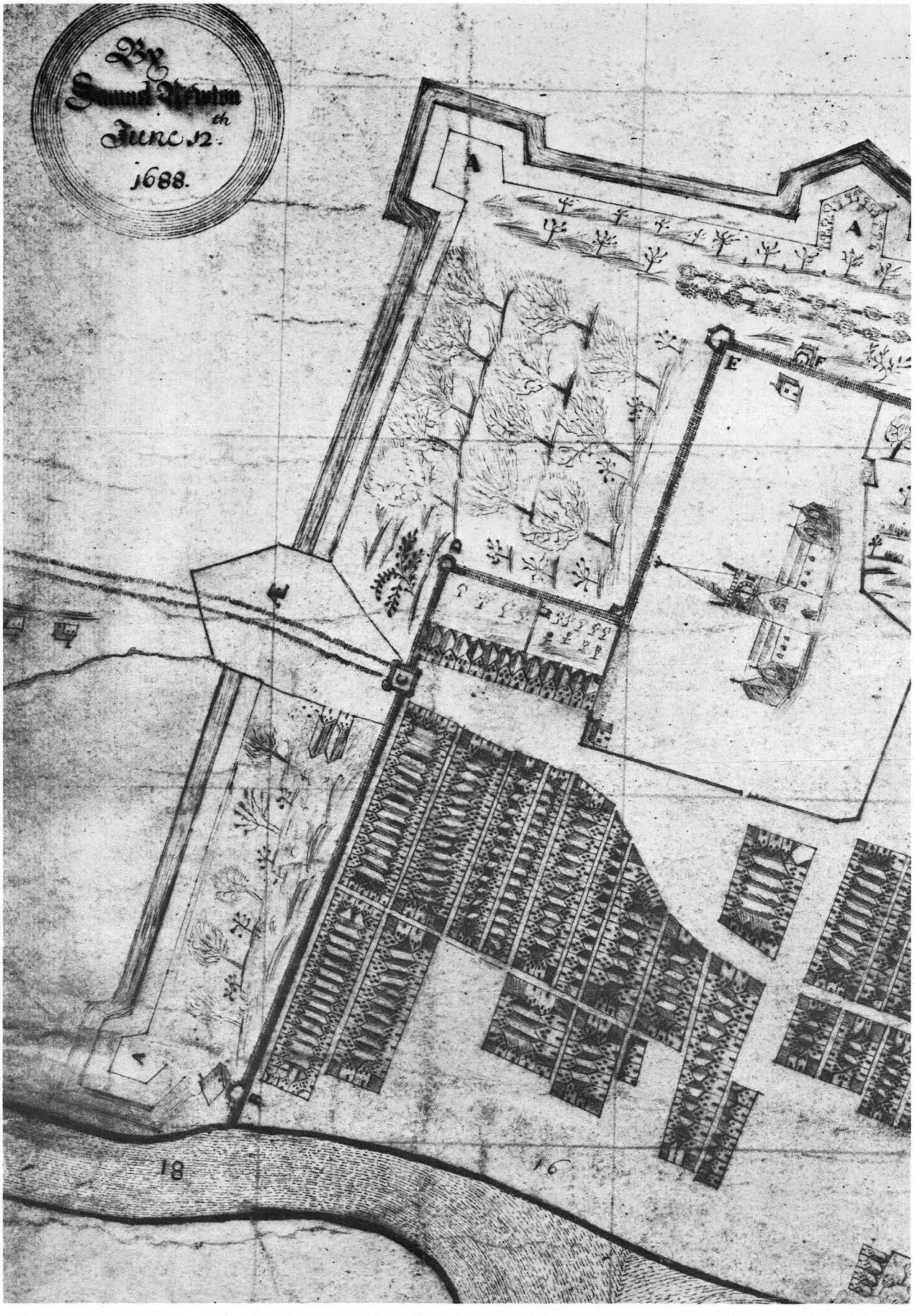


Plate VIII. Yarmouth: part of Samuel Newton's map of 1688 showing the north end of the town.
(Reproduced by permission of the Public Record Office, document no. MR 488)

Photo: Hallam Ashley

Plate IX. Yarmouth: Nos. 220, 221 and 222 Northgate Street, looking east. The medieval North Gate stood until 1807 in the centre foreground and the medieval town wall survives as part of the north wall of the houses.

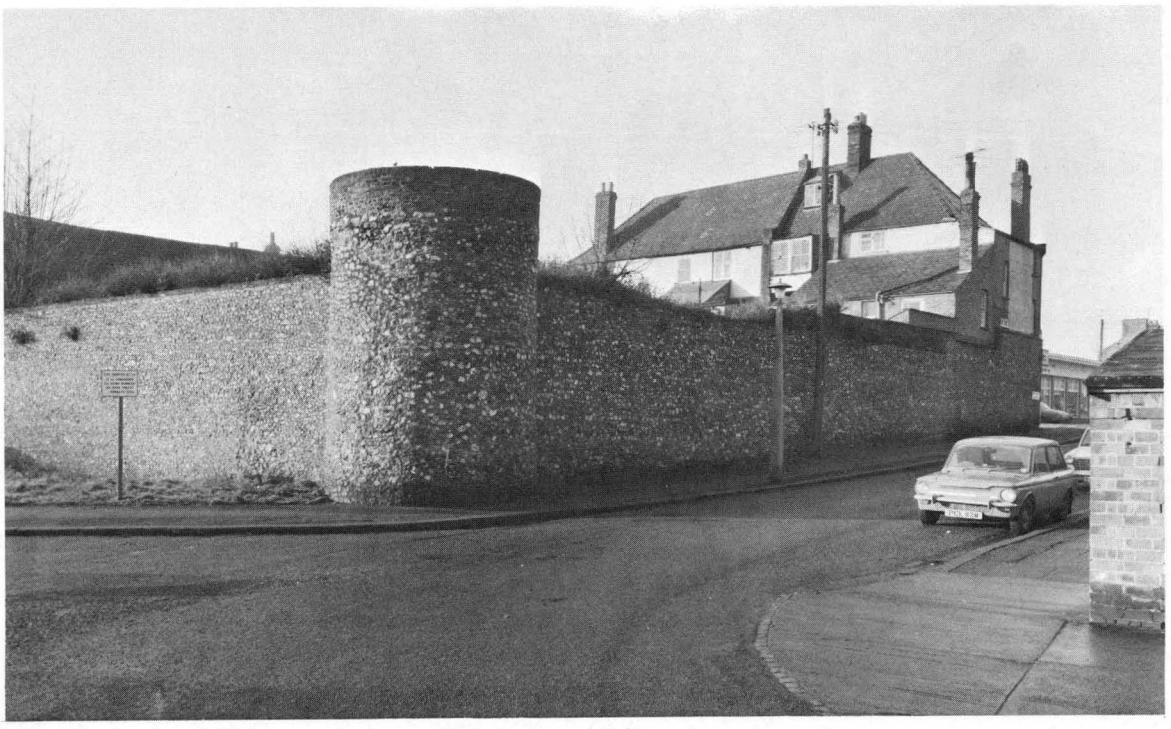


Photo: Hallam Ashley

Plate X. Yarmouth: Nos. 220, 221 and 222 Northgate Street, looking west. The building is shown in relation to the medieval town wall with the Fifteenth Tower in the centre.

Introduction

In October 1973, with demolition imminent, the Norfolk Archaeological Unit, already aware of the probability that there were medieval features within the structure, began a survey of the building. At the same time, the Department of the Environment upgraded the listing to Grade II, and the owners were obliged to re-apply for consent to demolish. In February 1974 the Borough Council approved this application in principle, subject to suitable conditions giving the Unit access for recording before and during demolition. In June 1974, however, the Secretary of State called in the application to be determined directly by the Department of the Environment. In March 1976, before the necessary public inquiry had taken place, the owners, following negotiations with the Borough Council, withdrew their application to demolish. It was hoped by all parties that the building, which had retained its integrity as an evolving structure from the medieval period, could be preserved within a future redevelopment scheme for the site. However, in June 1976 the Historic Buildings Council advised the Department of the Environment that they could not recommend a grant towards restoration. At the time of writing (March 1977), the owners and Yarmouth Borough Council are still seeking alternative funds to save the building.

This sequence of events, and particularly the transition from a situation of pre-demolition rescue recording to proposed preservation, means that this report does not comprise a complete survey of the building. A number of aspects cannot now be adequately studied - for example, the arrangement of the joists and floor structure above the sixteenth century ceiling; the possible presence of earlier work above the modern first-floor ceilings; or the possible survival of details of medieval roof carpentry at wall plate level on the original rear wall.

IV. DESCRIPTION

FOURTEENTH TO EIGHTEENTH CENTURY

The removal of plaster in Nos.221 and 222 revealed that the earliest building on the site was a two-storied medieval range lying parallel to the street. The only substantial survival from this period is the medieval rear wall (01), largely retained in later builds. A length of 15 m of this wall was exposed. 60 cm thick and c. 6 m in height from floor level to eaves, the wall is built of brick and flint with a rubble core, and mortared throughout. The facing consists of alternate courses of bricks, laid as stretchers, and flint cobbles (Plate XV). The bricks vary in size from $9\frac{1}{2}$ x 4 x 2 in (24 x 10 x 5 cm) to 9 x 4 x $1\frac{5}{8}$ in (23 x 10 x 4 cm), and there are frequent irregularities of shape within one brick, perhaps caused by distortions during firing. Light orange red in colour, they have quartz and flint inclusions and minute pockets of deep red clay. The fine-grained body material is fairly soft and probably derives from the sandy clay of the local Norwich Brickearth. The bricks are moulded, and an example removed from the wall has grass and straw marks on both the strike face, the opposite large face, and one long side (the stacking edge). Because of the irregularities of the flints and some of the bricks, the mortar joints tend to be wide.

All the original openings have chamfered dressings, using the best-fired bricks. The chamfers have been chopped on site, not moulded. An internal set-back (14), 10-12 cm deep, indicates the level of the original first-floor joists, and, at the south end of No.222, a course of headers, laid on edge, above a string course, both of which originally projected externally, marks the level of the eaves (11 and 12). Both faces of the wall show traces of rendering, and the relatively rough nature of the chamfers on the openings suggests that this may be an original feature (Plate XI).

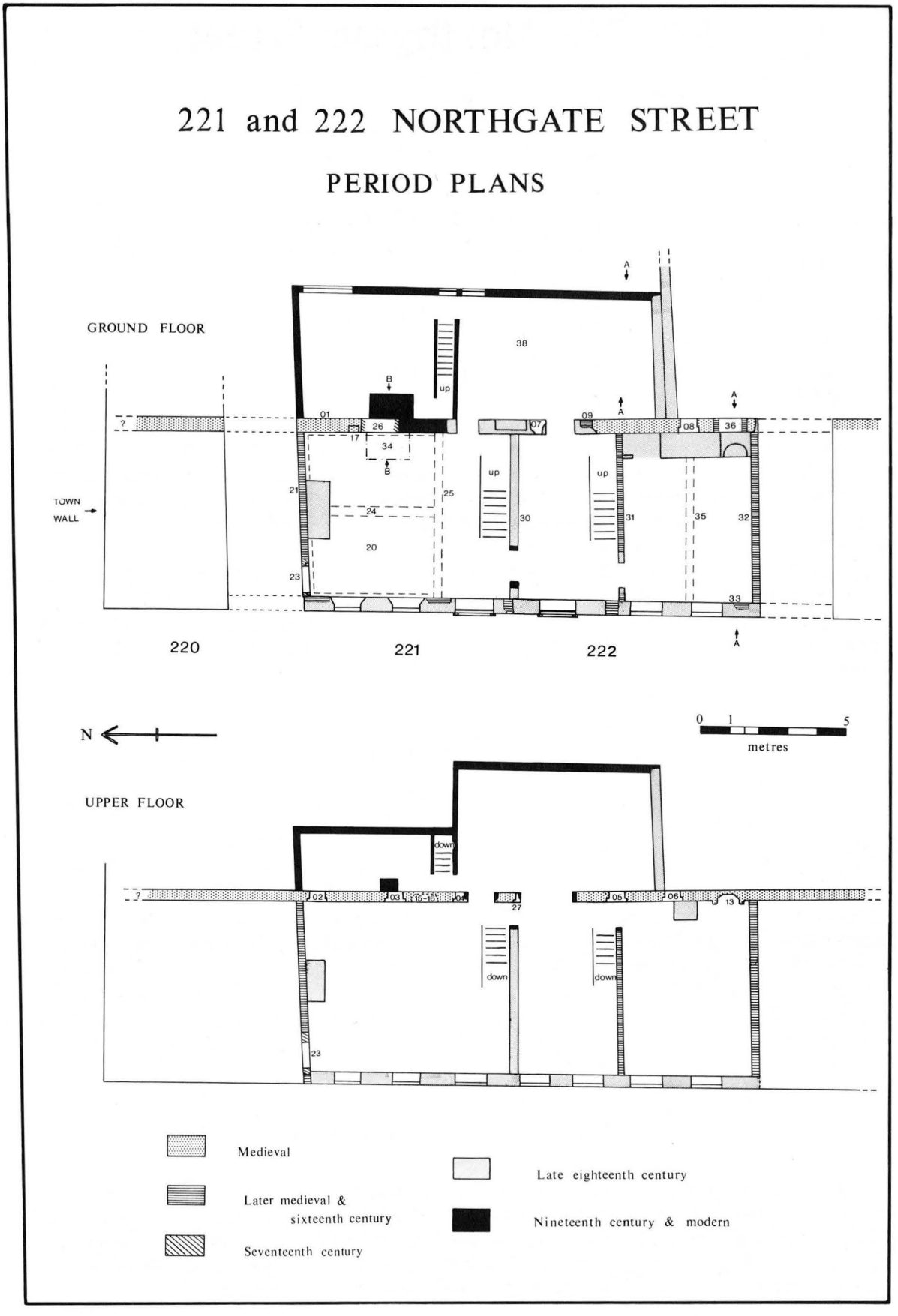


Fig.39. Plan of Nos.220, 221 and 222 Northgate Street showing the construction periods of the building.

221 and 222 NORTHGATE STREET

EXTERNAL ELEVATION WALL 01

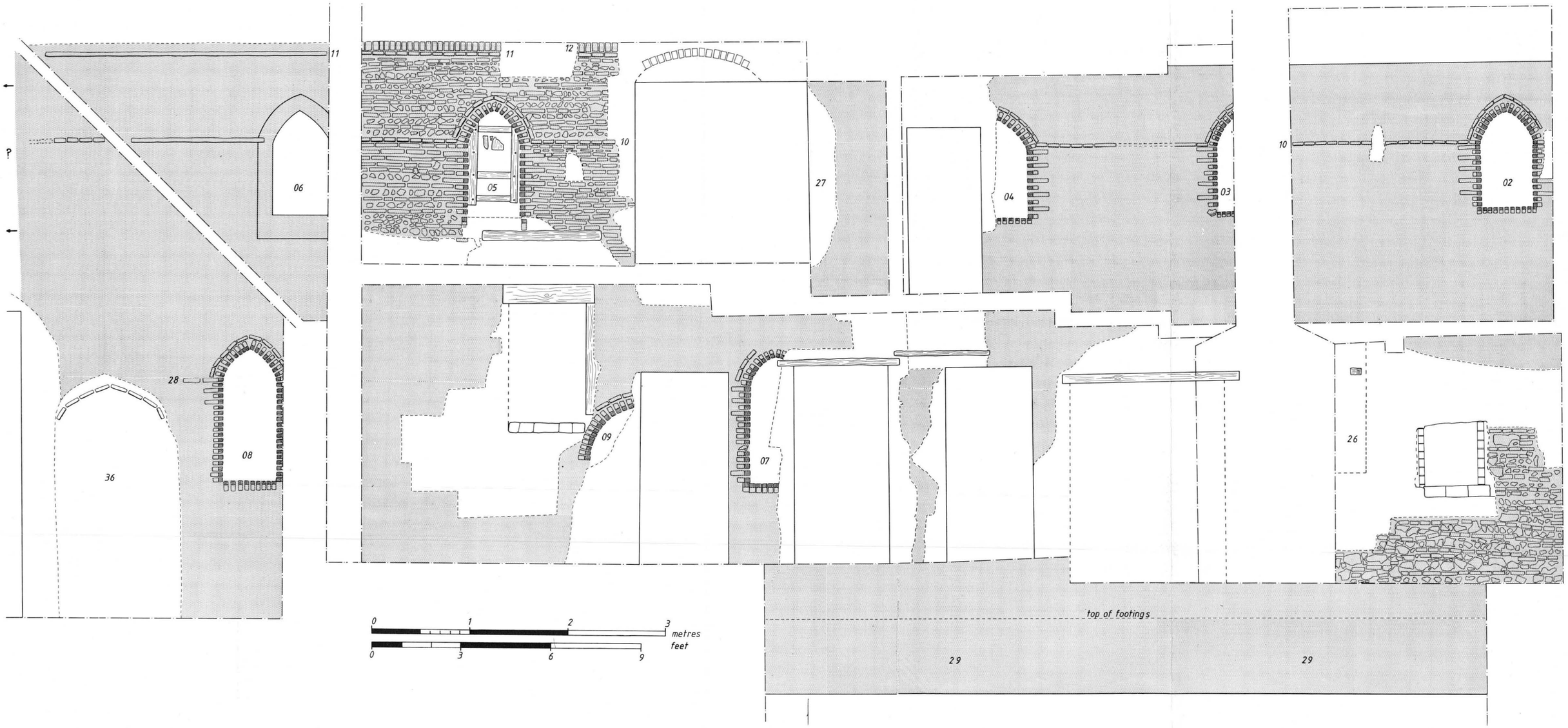


Fig.40. External elevation of rear wall at Nos.221 and 222 Northgate Street with surviving medieval fabric shaded.

221 and 222 NORTHGATE STREET

INTERNAL ELEVATION WALL 01

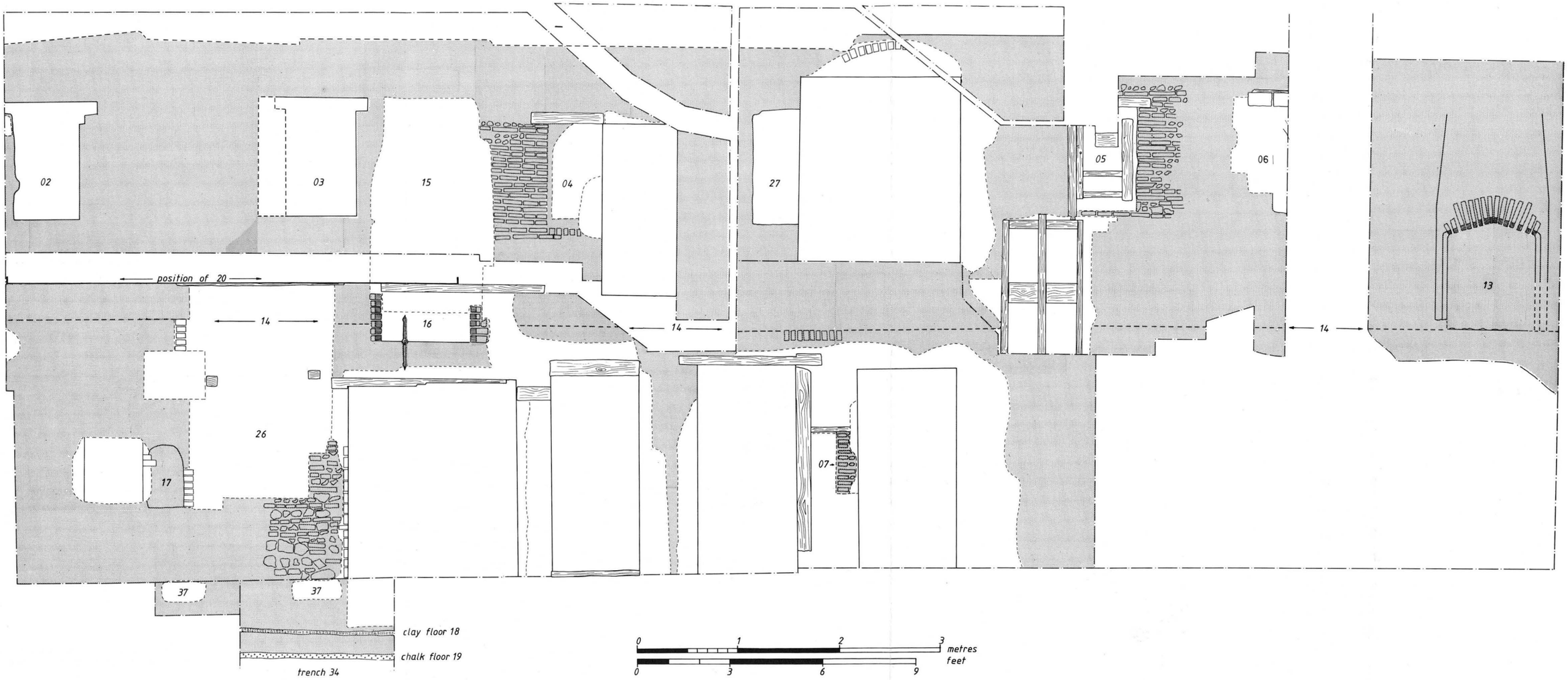


Fig.41. Internal elevation of rear wall at Nos.221 and 222 Northgate Street with surviving medieval fabric shaded.

Note: Feature numbers in the text can be related to Figs.39-42.

01	rear medieval wall
02-08	medieval windows, in 01
09	medieval door, in 01
10-11	string courses, upper storey 01
12	bricks on edge, wall plate level 01
13	medieval fireplace, south end 01
14	offset to hold first floor, in 01
15	chimney flue for fireplace 16
16	medieval fireplace remains, north end 01
17	wall recess, in 01
18-19	medieval floor levels, trench 34
20	sixteenth century ceiling
21	(?) late medieval north cross-wall
22-23	seventeenth century doorways, in 21
24	sixteenth century ceiling beam, part of 20
25	seventeenth century ceiling beam, added to 20
26	(?) seventeenth century window opening, in 01
27	medieval window, in 01
28	string course, lower storey 01
29	footings of 01
30	(?) late medieval cross-wall
31	modern cross-wall
32	(?) late medieval south cross-wall
33	front wall
34	excavation trench
35	sixteenth century ceiling beam, south end
36	medieval doorway, south end of 01
37	holes for (?) sixteenth century floor beams, in 01, trench 34
38	nineteenth century rear lean-to's
39	late eighteenth century third storey

On the ground floor, parts of two doorways (09 and 36) and two windows (07 and 08), all with two-centred heads, survive. The jambs and heads are chamfered, as are the sills, which are formed by headers laid on edge. At the north end of No.221, there is a small rectangular recess in the wall, plaster-lined and probably original (17). On the first floor, there are three complete and three damaged windows (02-06 and 27, Plate XI). Although shorter, they resemble the ground floor windows in style and construction, but here the internal arrangement also survives, consisting of a rectangular rebate and a flat timber lintel, in two cases still in situ (04 and 05, Plate XII). In the rebates of windows 03 and 04, holes for shutter gudgeons survive 25 cm above the sills. All the medieval openings have been blocked. It is likely that this took place in the sixteenth century since, where later intrusions have not led to re-blocking, the filling material is medieval brick. On both floors, a single-brick string course, largely cut back during later remodelling, runs along the wall at the level of springing of the window-heads, and continues over the windows as a label (10 and 28). A first-floor brick fireplace is built into the rear wall at the south end of the present building (13, Plate XIII). The fireplace rises from the internal set-back and has a depressed two-centred arch and a shallow hood supported on the jamb shafts. Both arch and jambs are chamfered and rendered. The plan of the hearth within the recess is semi-octagonal; the floor may, in addition, have supported a projecting hearth. At the rear of the fireplace the wall is, surprisingly, only half a brick thick. Near the centre of the present building, there are fragmentary remains of a second flue and fireplace on the first floor (15 and 16). The complete rebuilding of the medieval wall below this point suggests that the flue may have also served a fireplace on the ground floor.

Immediately south of No.222, the distinctive masonry of the medieval wall can be identified continuing in the adjoining building; and to the north, the thickness of the rear wall in No.220, at ground and first floor level, indicates continuation towards the line of the town wall.

No original internal partitions survive, but where the later north wall (21) joins the medieval rear wall, the latter retains evidence of bonding bricks for a contemporary brick or brick and flint partition. Other original partitions may have been timber-framed, since no 'scars' suggesting brick partitions are traceable elsewhere on the rear wall, and it is unlikely that all original cross-walls would have been removed if they were of brick. The possibility of brick partitions throughout remains, however, since the example of a late fifteenth century house on Pottergate, Norwich, has shown that original internal walls were sometimes only butt-jointed to external walls (Carter 1974, 45).

The medieval building was substantially remodelled in the sixteenth and early seventeenth centuries. In the main ground-floor room of No.221, removal of the nineteenth century ceiling revealed the remains of a sixteenth century ceiling (20, Plate XVI), suggesting that the medieval first floor level had been raised by c. 60-70 cm at that period. This process was apparently continued at the south end of the present building, where removal of nineteenth century casing uncovered a sixteenth century roll-moulded cross-beam (35). The sixteenth century ceiling in No.221 has roll and ogee trimmers on the rear medieval wall, the front wall, and the north cross-wall, and a roll and ogee axial beam (24). The mouldings and beams are continuous, not stopped, and large amounts of red ochre survive. The early ceiling joists are almost square in section. In the late seventeenth century, an ogee cross-beam was inserted, about 3.75 m south of the north cross-wall, moulded only on its north side but without any mortices for a partition below (25). The north wall of No.221 (21) is secondary and only very crudely keyed to the medieval wall. Roughly built in brick and occasional flint, it is cut by an

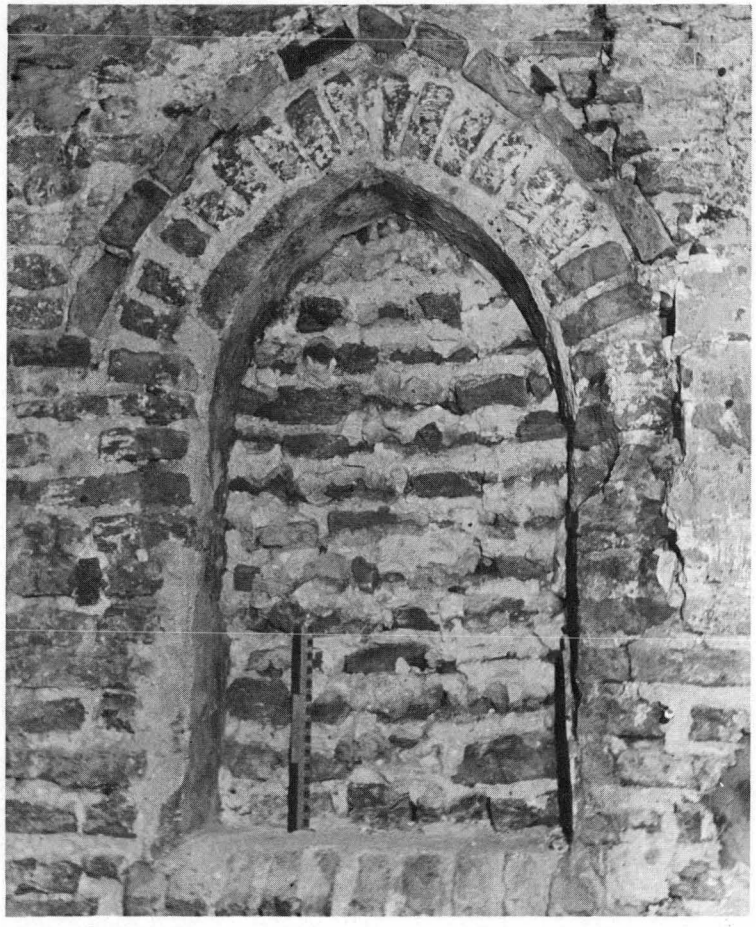


Photo: Hallam Ashley

Plate XI. Yarmouth: external view of medieval window (02) showing the remains of the original rendering, and the mutilated string course and label (10).

Photo: Hallam Ashley

Plate XII. Yarmouth: internal view of the remains of medieval window (03) showing the infilled rectangular rebate and the original wooden lintel.

Photo: Hallam Ashley

Plate XIII. Yarmouth: medieval fireplace and hood (09), showing remains of original rendering.

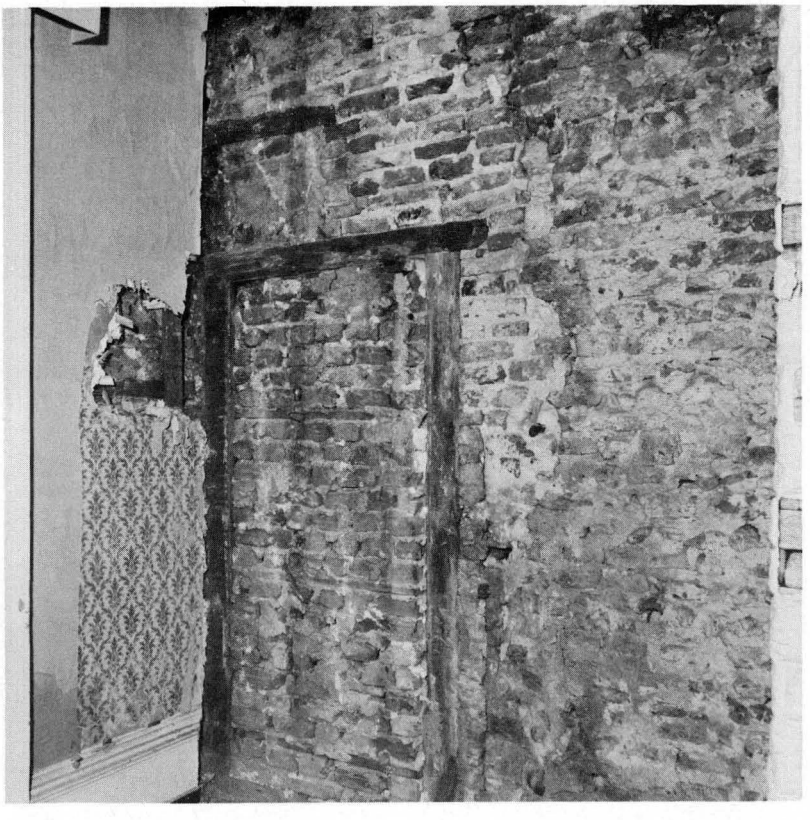


Photo: Hallam Ashley

Plate XIV. Yarmouth: the north partition wall (21) with the inserted seventeenth century door frame (23).

Photo: Hallam Ashley

Plate XV. Yarmouth: detail of the medieval wall (01), showing the construction of alternate brick and flint courses.
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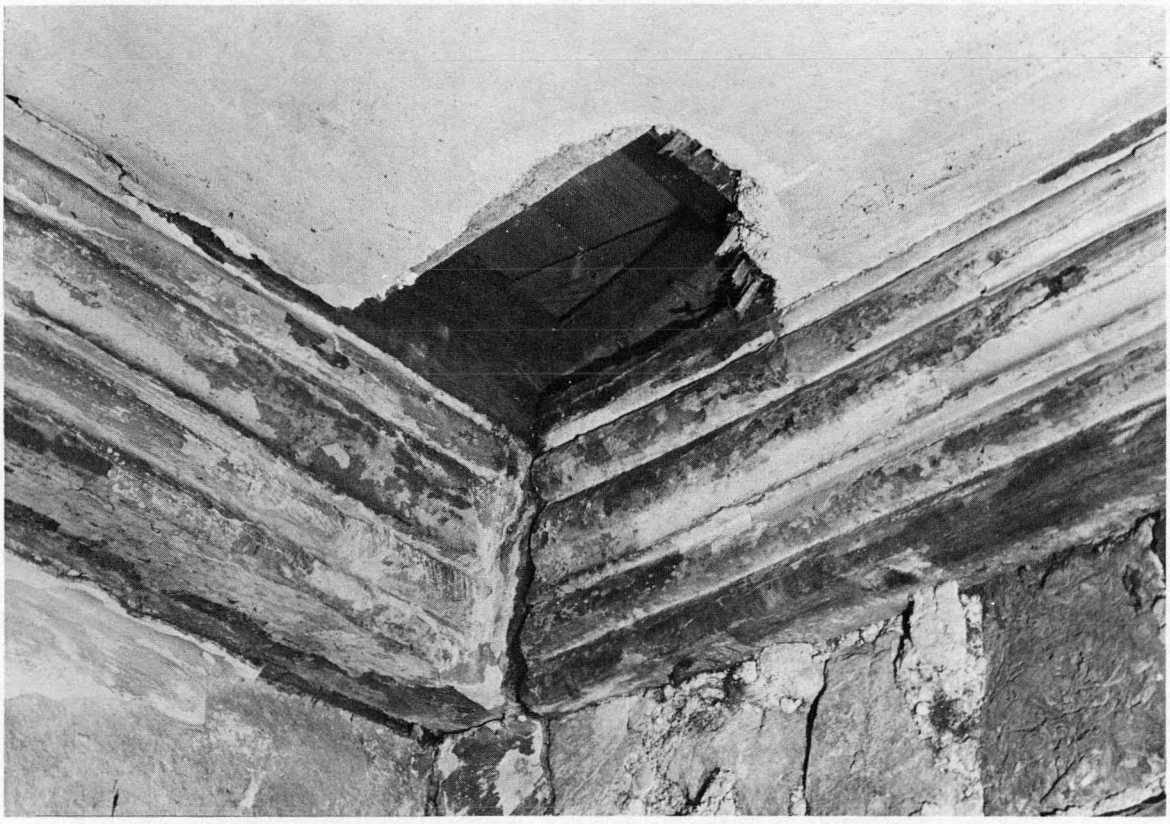

Photo: Hallam Ashley

Plate XVI. Yarmouth: detail of the sixteenth century plaster ceiling with moulded beams (20).
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Photo: Great Yarmouth Borough Planning Department

Plate XVII. Yarmouth: the back of the building in February 1978 after demolition of additions to rear.

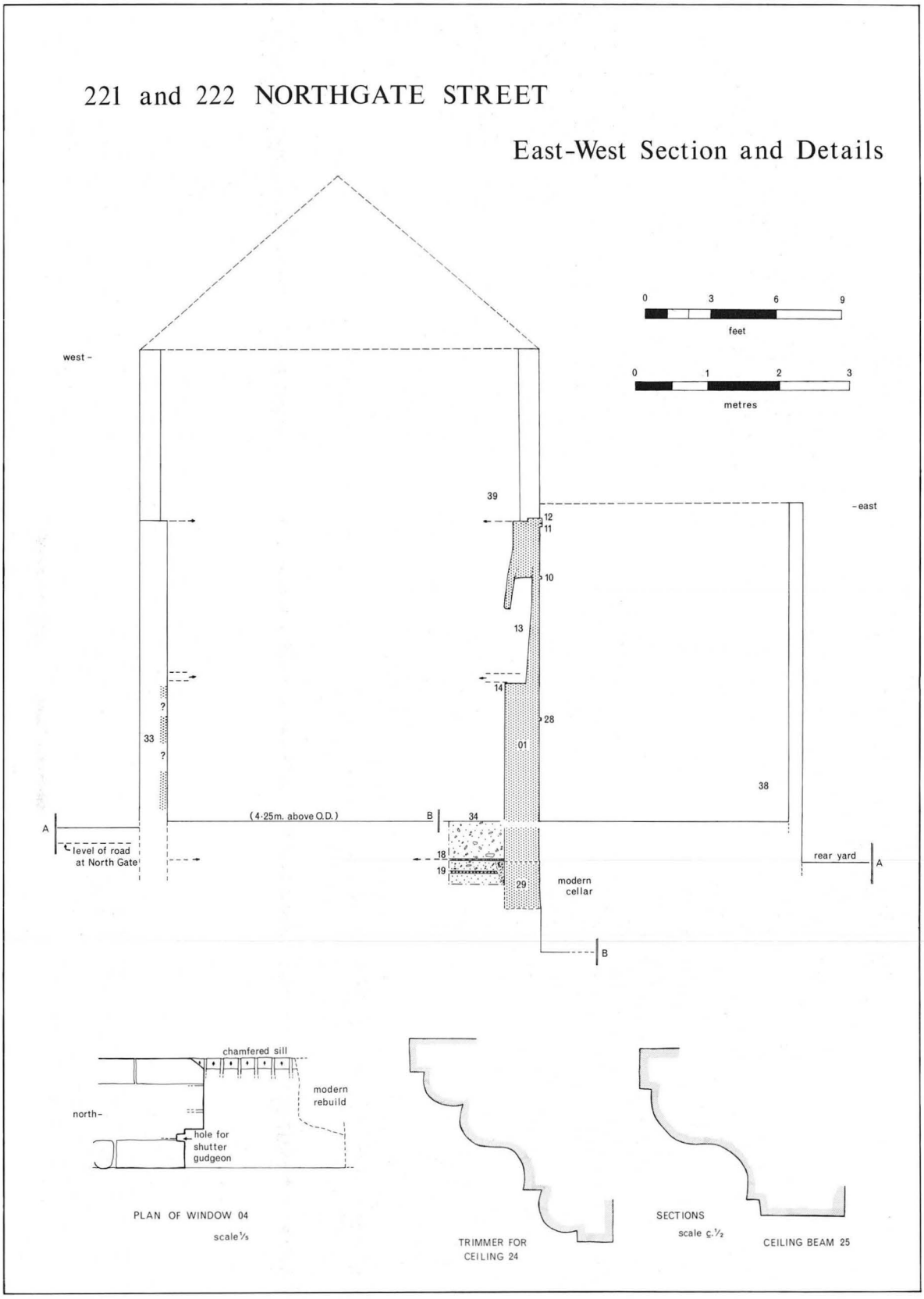

Fig.42. East to west section through Nos.221 and 222 Northgate Street showing probable position of medieval floors and wall plate.

early eighteenth century door on the first floor, and on the ground floor by the insertion of a seventeenth century wooden ovolo-moulded door-frame with draw stops at the bottom of the jamb-mouldings (23, Plate XIV). Both of these doorways were later blocked, probably in the late eighteenth century. The north wall is, then, pre-seventeenth century, and may date either from the late medieval period or, since it carries the sixteenth century trimmer comfortably, from the sixteenth century remodelling. Two of the three cross-walls further south (30 and 32), with similar structural characteristics and abutting the medieval rear wall, probably belong to the same period of construction.

On the ground floor, parts of the front wall (33) are roughly built in early brick, particularly at the north end of No.221, where the internal plastered face passes across the inserted north cross-wall. At this point, then, the front wall predates the sixteenth century, and may even represent the front wall of the original medieval building. On the first floor, since no early brickwork can be identified in the front wall, and the north cross-wall continues through to the external front face of the building, it is conceivable that the medieval and perhaps the sixteenth-seventeenth century range included a jettied, partly timber-framed frontage.

Two additional features, now blocked, may belong to the sixteenth-seventeenth century remodelling: an opening, perhaps a window (26), in the rear wall; and a wide opening in which the front door of No.222 is now situated.

A small trench (34), excavated against the internal face of the rear wall, revealed a compacted sand and clay layer, 2-3 cm thick, with a chalk skim on top (18), lying c. 45 cm below the present floor. This may represent the medieval floor level, since both the remnants of the plaster facing on the medieval wall and the regular brick and flint coursing cease at this point. The height of the medieval door (09) would accommodate such a floor level. 65 cm below the present floor was a second early surface, composed of chalk, 6 cm thick (19). This appeared to be cut by the medieval footings, and may represent occupation on the site pre-dating the medieval brick building. Investigation of the cellars beneath the nineteenth century lean-to's at the rear of the building indicated that the medieval wall footings (29) are 80 cm deep.

LATE EIGHTEENTH CENTURY TO MODERN

Before the investigation of Nos.221 and 222, only those phases dating from the late eighteenth century onwards were apparent. The most substantial alterations in this period took place at the very end of the eighteenth century, when the building, including the section between No.221 and the town wall, was completely remodelled and heightened to form the present three houses (Plates IX and X). These houses are of red brick, three storeys high, with a hipped Welsh slate roof. The northernmost house, No.220, conforms with Nos.221 and 222, but here remodelling may have been carried out a little later. More recently, No.220 underwent further modifications. The north gable end was built out to incorporate the remains of the medieval town wall; a wide carriageway was driven through the southern half of the ground floor, perhaps in part to compensate for the disappearance of the narrow passageway between the north gable and the town wall; and the northern half was converted into a shop. Since No.220 was still occupied at the time of the survey, no further examination was carried out.

In Nos.221 and 222, the late eighteenth century rebuilding produced an asymmetrical pair of houses, which have sash windows with rubbed brick lintels and identical doors with a wooden surround, fluted half-columns supporting an ornamental flat canopy, and a reeded inner frame with angle roundels. At the back of the main range are early nineteenth century lean-to service rooms with cellars (38). These rooms were recently altered to provide kitchens, when Nos.221 and 222 became a single guest house.

The south house, No.222, has a wide stair-hall with an early nineteenth century

plaster cornice. The stair is plain, with a ramped, moulded handrail, square balusters, plain turned newels and scroll-bracketed treads. Early nineteenth century doors have been cut through the medieval rear wall to the service rooms, and through the cross-wall between the main room and stair-hall. The main room has two-height panelling of very flat, plain type, probably late eighteenth century [1]. The styles are wave-moulded and the panels flat, with a small beading in place of a chair rail. Both the wooden cornice and the chimney stack, with a modern fireplace inserted against the rear wall, are also late eighteenth century. Flanking the stack are two round-headed cupboard doors with patterned glazing bars and wooden boards rather than glass. The north door gives access to a walk-in cupboard or closet and is unlikely ever to have been glazed; the south door, which was probably originally glazed, is part of a very late eighteenth century shell cupboard with ribbed half-dome and shaped shelves [2].

No.221 has a narrower entrance hall, from which a modern door gives access through the cross-wall to No.222. The stairs are almost identical to those in No.222, and once again an early nineteenth century door to the service rooms cuts the medieval rear wall. The partition between the stair-hall and the main room has been removed in modern times, and in this case the early nineteenth century fireplace has been placed against the north cross-wall.

The first floor in both Nos.221 and 222 has been largely remodelled to provide modern guest rooms. Two modern doorways cutting through the medieval rear wall on the first floor give access to rooms added on top of the early nineteenth century lean-to's.

V. DISCUSSION

The continuation of the medieval rear wall in Nos.221 and 222 Northgate Street, north towards the town wall, and south beyond No.222, has already been mentioned. Brief examination of the cellars in two of the houses between Nos.221 and 222 and St.Nicholas' churchyard revealed evidence of medieval fabric in the rear walls, suggesting strongly that the medieval range extended as far as the precinct wall of the Benedictine Priory attached to St.Nicholas' church (Fig.38). This conclusion is supported by the consistent rear line of existing buildings south of Nos.221 and 222 (Fig.38) and by a number of early manuscript maps of Yarmouth. The two earliest maps (the Cottonian map of c. 1585 and the Hatfield House map of 1588) give only the impression that the area east of Northgate Street was tightly built up. However, Samuel Newton's map of 1688 (Plate VIII), John Deleny's copy of a 1734 map, and Henry Swinden's map of 1753, all indicate a longe range of buildings parallel to Northgate Street, with gardens, partly built over by the time of Swinden's map, to the rear. A late eighteenth century drawing, looking south from outside the North Gate, shows the gable end of a two-storied building, roofed axially and with sixteenth century features (Great Yarmouth and District Archaeological Society 1971). This building appears to stop short of the town wall, as indicated on the map of 1734. Swinden's 1753 map, which is the first detailed and accurate survey of the town, does not show this gap, which may at that time have been occupied by a single-storied structure, or covered alley. Also clearly shown are buildings attached to the back of Nos.221 and 222, and this suggestion of rear lean-to's before the nineteenth century is confirmed by the survival of a seventeenth century wrought iron wall anchor on the internal blocking of one of the medieval fireplaces (16) (O'Neil 1953, 152-3, pl.LXI D).

The remodelled three-storied houses, including No.220, are shown on a late eighteenth or early nineteenth century engraving of the North Gate (Yarmouth Central Library C186). The drawing for this engraving was probably carried out before 1803, since St.Nicholas' church is shown with its old spire, taken down in that year. In addition, the engraving clearly shows that the narrow gap between the building and the town wall, was initially retained, as the architectural description suggested, in the late

eighteenth century remodelling. It is likely, indeed, that this 'passageway' originated, for defensive reasons, when the medieval range was first built.

Serious problems are encountered in dating the original building. The windows and doors, with two-centred heads, could have been constructed at any time between the thirteenth and fifteenth centuries. The fireplace (13), with its depressed two-centred arch, also provides no reliable guide to dating. The use of the flattened arch, normally four-centred, in fireplaces became general at the beginning of the fifteenth century (Wood 1965, 261-76; Lloyd 1931, 436), and there are many examples of such fifteenth century fireplaces in both brick and stone (Shuffrey 1912, 36-44). Earlier examples, however, are very rare, although this may be, in the case of brick fireplaces, due partly to the fact that so few domestic brick buildings from before 1400 survive. In the south east tower of Claxton Castle, Norfolk, (built in brick c. 1340), there is an original brick fireplace with a depressed two-centred arch (Cozens-Hardy 1960, 174). Such an early survival is in no way surprising, since the depressed two- or four-centred arch is very suitable for a fireplace, giving both width and opportunity for decoration. Brick construction, in particular, favours a flatter, although not flat, arch. There is no reason, therefore, why the form of the fireplace at Nos.221 and 222 Northgate Street should preclude even an early fourteenth century date for the medieval range. The use of a tapering hood with projecting arch and jambs may support an early date. Although the hood is necessary to achieve a deeper flue and hearth recess in a wall only 50 cm thick, by the fifteenth century such a technique would have been unusual and the method of building lintel and jambs flush with the face of the wall preferred (Shuffrey 1912, xxvii).

Turning to the fabric of the rear wall, dating medieval brickwork, whether on size of brick, technique of manufacture, or geological composition, remains virtually impossible. The predominant medieval method of preparing bricks in a mould appears to have been first used in England in the thirteenth century, and continued largely unaltered until the nineteenth century (Firman 1967, 299-300; Harley 1974, 64-66). While the evidence suggests that the smaller late medieval brick largely replaced the medieval Great Brick in the mid-thirteenth century, such bricks cannot be precisely dated by their dimensions, which have little variation from the thirteenth to the sixteenth century (Wight 1972, 43; Harley 1974, 73). A few generalisations have, however, been made about brick development within this period. Harley says that in the fifteenth century bricks become better fired, with fewer inclusions, and a more homogeneous body (Harley 1974, 75), while Firman detects a growing preference after c. 1440 for the use of stony boulder clays and stony alluvium, which fire red, rather than stoneless alluvial and estuarine silts (Firman 1967, 316). The degree of sophistication with which the bricks were used may also provide some guidance. With this general context in mind, the bricks in the rear wall at Nos.221 and 222 Northgate Street fall within the late medieval category. Several other examples of late medieval brickwork have been identified in the area around Yarmouth: for example, at St.Olave's Priory, Herringfleet, c. 1300; at Claxton Castle, c. 1340; at the Cow Tower, Norwich, c. 1386; and at Caister Castle, c. 1440. In Yarmouth itself, bricks from the adjacent section of the town wall, the North West Tower, and King Henry's Tower are all similar to those at Nos.221 and 222 Northgate Street, although noticeably longer and wider (10-10$\frac{1}{2}$ x 4$\frac{1}{2}$-5 x 1$\frac{3}{4}$-2 in or 25-27 x 11-13 x 4-5 cm). It is interesting that both the medieval rear wall and the town wall show the same method of alternately coursing brick and flint. Apart from its use in the construction of the Yarmouth defences, recorded in the building accounts from 1335-1346 (Swinden 1772, 79-92), brick was used at an early date in domestic building. The enrolled deeds in the borough court rolls make these references to brick-building in the first half of the fourteenth century: 1310/11, a brick wall; 1328/9, a brick solar; and 1347/8, a wall of stone and brick (Norfolk County Record Office, Y/C4/34; Y/C4/52; Y/C4/68). Sources for estuarine clay, silt, and brickearth are readily available in the vicinity, although the first reference to the digging of brickearth, on nearby Cobholm Island, does not occur until 1539 (Rutledge 1970, 26). None of this evidence provides conclusive dating for the medieval brickwork at Nos.221 and 222 Northgate Street.

However, the irregularities of form in the bricks, the thickness of the mortar joints, and the lack of any shaping apart from chamfers, may indicate a fourteenth rather than a fifteenth century date.

There are other contexts in which the problem of dating the building can be examined. During the thirteenth and fourteenth centuries, the ground surface in Yarmouth, which had previously shown enormous changes in level caused by wind-blown sand, was stabilised (Rogerson 1976, 134). Comparison of levels indicates that the medieval building on Northgate Street belongs to this period of stabilisation. Whereas the ground level at the west door of St.Nicholas' church is c. 1.6 m O.D., the probable floor of the medieval range on Northgate Street is at 3.73 m O.D., a little below the existing road level at the site of the North Gate (c. 4 m O.D.).

Similarities to the town wall in the alternate coursing of brick and flint have already been noted, and the relationship of the medieval range to the town wall, which was begun in 1285 and completed c. 1400 (Tingey 1914, 129-48) is significant in other respects (Fig.38, Plates IX and X). Work on the defences began near St.Nicholas' church, probably with King Henry's Tower, and moved southwards. It seems that the north section of the wall, between King Henry's Tower and the North West Tower, was completed last of all (Swinden 1772, 83; Palmer (ed.) 1847, xvii). The North Gate was reputedly built c. 1350 from profits made by those engaged in burying victims of the Black Death (Swinden 1772, 85). From King Henry's Tower, the north section of the wall follows an erratic course, first turning westward, probably to accommodate the precinct wall of the Priory, begun in 1287, then abruptly northward to the Fifteenth Tower, running roughly parallel to and c. 50-57 m east of Northgate Street, and finally turning westward again to the North Gate and the river. This final northern limit may have been predetermined by the built-up area of the medieval Rows to the west of Northgate Street. It might also be inferred that, since the town wall turns north to reach this limit 57 m east of Northgate Street, rather than following the pre-existing precinct wall further west, the long medieval range was either already in existence and specifically included within the defended area, or perhaps built at the same time. It must be admitted, however, that, for military reasons alone, the perimeter would follow this course to the Fifteenth Tower and the North Gate, in preference to following closely the east side of Northgate Street. A long north to south range on Northgate Street, with garden space behind, as shown on the maps of 1688 and 1734, would then be a reasonable method of utilising this anomolous and restricted space within the defences. Certainly, the area in no way conforms to the typical pattern of medieval growth in Yarmouth, consisting of Rows or access passages running laterally between the main north to south thoroughfares, and separating the long, narrow east to west tenements.

A broad date within the fourteenth century for the original building at Nos.220 and 221 Northgate Street is suggested both by architectural considerations and by a close relationship, on topographical and stylistic grounds, to the period of construction of the town wall. The economic development of medieval Yarmouth does not contradict this view. The period of Yarmouth's greatest prosperity as a provincial port was between c. 1280 and c. 1350. Thereafter, serious relative and absolute decline set in, following the silting of the original harbour and the Black Death (Hoskins 1972, 87-88, 236-39). In 1502 it was stated that the sites abandoned in 1349 were still 'gardayns and void groundes' (Swinden 1772, 390). Manship, writing c. 1610-1619, described the period as follows: 'Neither was this town so replenished as then it was, in 220 years after: for within these forty years last past, many void grounds be now builded (and the town is more than a fourth part both in buildings augmented, and in the number of inhabitants increased), which during that time lay waste and in a manner desolate' (Palmer (ed.) 1854, 35). The scarcity of remains of medieval houses in Yarmouth may be due both to the prolonged late medieval decline and the renewed prosperity of the late sixteenth century, which led to large-scale rebuilding. It is interesting that most of the handful of medieval buildings which have survived in Yarmouth - for example, the Tolhouse and

the Priory hall - date from the period 1280-1350. Given this economic framework, it is, perhaps, unlikely that a major medieval range, constructed in brick at a time when building was still predominantly of timber, would have been built in Yarmouth much after 1350. A later date for the building is, of course, possible. At a time of relative decline, when land values are low, new building may accompany a general contraction of settlement, as at Stamford in the late medieval period (pers.comm. Robert Taylor). Since contraction would most severely affect the periphery of a town, then the area east of Northgate Street, lying near to the church, might provide an optimum development site for a wealthy townsman to buy and amalgamate plots in, say, the late fourteenth century.

The function of the building remains enigmatic; no documentary evidence survives. An ecclesiastical connection with the adjacent Benedictine Priory at St.Nicholas has been suggested, but the size of the medieval range hardly seems compatible with such a modest cell of the Cathedral Priory at Norwich. The presence of fireplaces on the first floor raises the possibility of domestic accommodation situated above warehouse or commercial premises. All that can safely be said, however, is that the building was in a broad sense domestic, and may represent part of a row of medieval lodgings rather than a single house.

March 1977

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1. The panelling was carefully removed by the owners in anticipation of demolition.
2. This cupboard has unfortunately been destroyed.

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The Air Photographs Collection of the Norfolk Archaeological Unit: Third Report

by Derek Edwards

I. SUMMARY

The Norfolk Archaeological Unit has continued the programme of research flights for archaeology which is now in its fourth year. A review of progress in the year 31st March 1976 to 1st April 1977 is followed by reports on selected crop mark sites throughout the county including that of the Premonstratensian Abbey of St.Mary, West Dereham, an interrupted ditched enclosure and long barrow at Roughton, a long barrow at Marlingford and a possible Roman temple at Aldeby.

II. ACKNOWLEDGEMENTS

The assistance of the following individuals and organisations is gratefully acknowledged: N.Abigail for donating photographs; D.Bridson, R.Day, R.G.Gregory and J.Hoyte who have all given freely of their time and skill as pilots; J.N.Hampton, Air Photographs Officer of the National Monuments Record for supplying and processing photographic materials and Miss.E.A.Horne who has continued to assist with the project as well as donate photographs and information from records of her own flying programme.

III. PROGRESS REPORT

The concentration of effort previously reserved for the monuments of the Roman period has, with the cessation of the Unit's excavations at Brampton (Green 1977), Brancaster (Green in preparation) and Scole (Rogerson 1977), moved steadily towards the monuments of the prehistoric period. This shift in emphasis coincided with the barrow surveys of Norfolk and Suffolk which are shortly to be published (Lawson and Martin in preparation). However, aerial reconnaissance cannot be confined to the monuments of one period - or even to archaeological evidence alone. During the time when the detection and recording of the more transient evidence of our ancient past has been of primary concern, due attention has still been paid to both the changing face of the modern landscape - as it concerns the archaeologist and historian - and to the more substantial monuments of the medieval period. Many landscape features have until recently been obscured from the view of the aerial photographer, as have been the prehistoric flint mines known as 'Grimes Graves' in the parish of Weeting with Broomhill. This site provides an excellant opportunity to contrast the information content of earlier published air photographs (Clark 1963, pl. on pp 6-7) with that of a view taken in 1974 after the site had been cleared of tree and scrub (Plate XVIII).

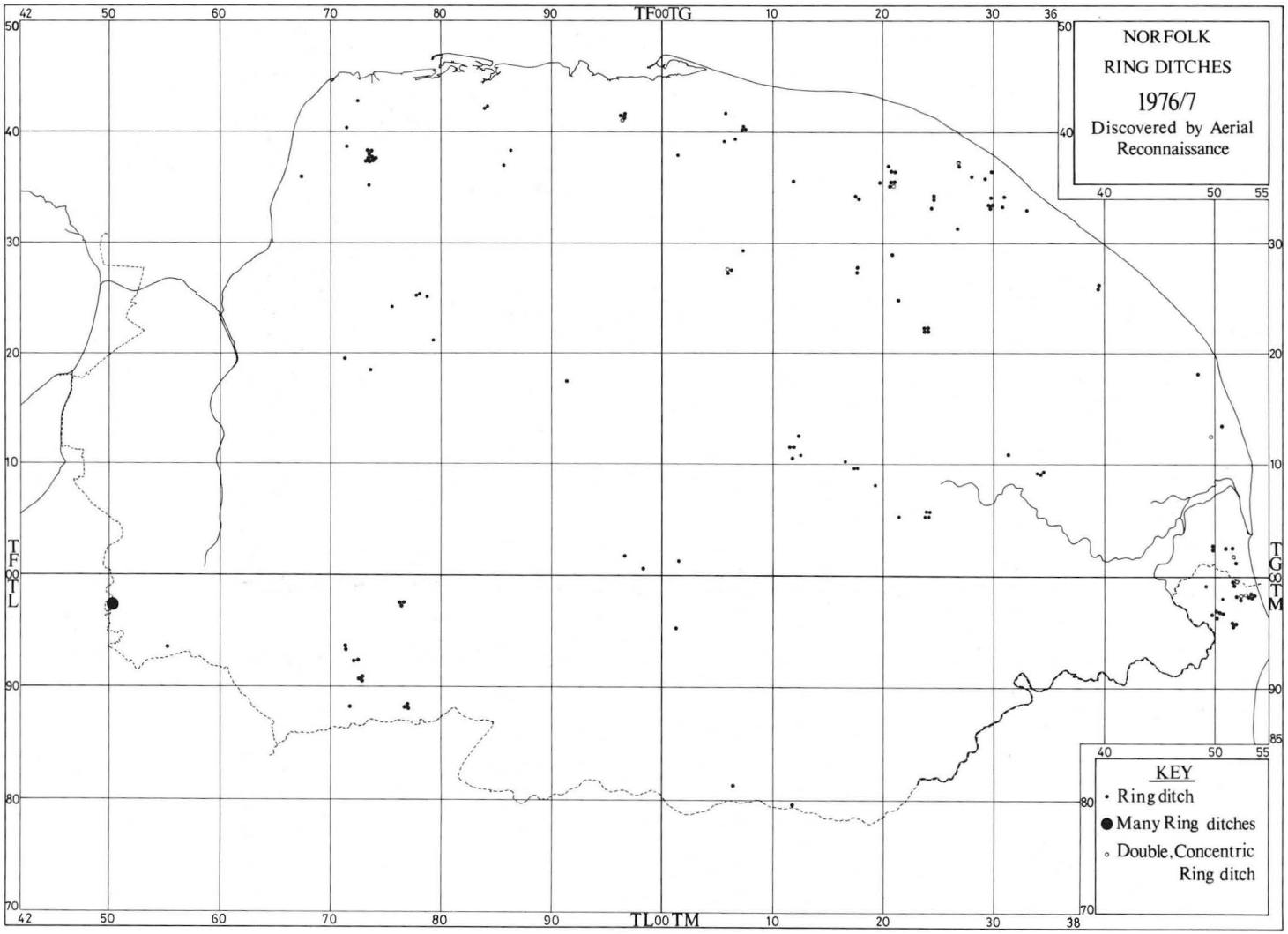

Fig.43. Distribution of ring ditches discovered by aerial reconnaissance in the year 1976/7.

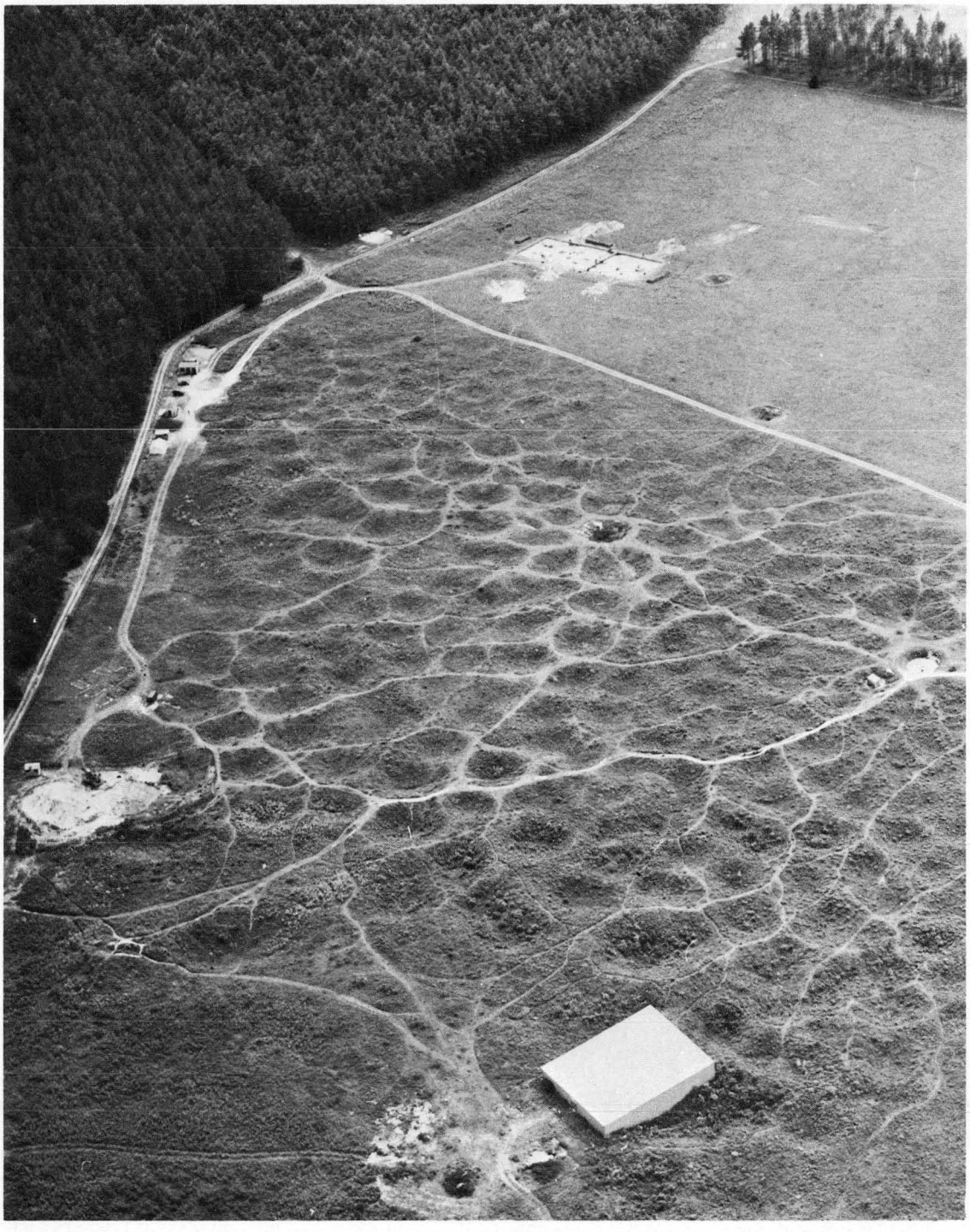

Photo: Derek A.Edwards TL 8189/A/ADG13

Plate XVIII. Weeting with Broomhill: the prehistoric flint mines known as 'Grimes Graves' after clearance, showing the covered over DoE excavations in the foreground and those of the British Museum at the left and in the middle distance, viewed from the north (12th July 1974).

Photo: Derek A.Edwards TF 6600/B/AFW22

Plate XIX. West Dereham: crop marks of the Premonstratensian Abbey of St.Mary, viewed from the south (8th July 1976).

YEAR 1976/7

During the exceptional drought conditions experienced throughout the country in the summer of 1976 reconnaissance in Norfolk continued at approximately the same level as in previous years, with a total of 33¾ hours of flying time recorded on thirteen flights between February and August. The period of greatest activity was between 17th June and 3rd August. The conditions of drought were so intense as to preclude the formation of crop marks on many attested sites. However, new discoveries were made, particularly ring ditches: 162 were discovered, many in the 'good loam' areas of the north and north east of Norfolk and the north eastern tip of Suffolk where exceptional conditions then prevailed (Fig.43).

Photographic coverage or partial coverage of 582 sq. km was achieved in 1976. This brings the total held to some 877 sq. km.

The most notable of all the sites recorded during the year were the villa complex at Fring (Edwards 1977, 234-6, fig.101, pl.XXV-XXVII; Frere 1977, 403, fig.22); the Roman marching camp at Stuston, Suffolk (Edwards 1977, 236, fig.104, pl.XXIX and XXX; Webster 1978, 106, pl.9); and the Premonstratensian Abbey of St.Mary's, West Dereham (Webster and Cherry 1977, 227, pl.XVIIB).

YEAR 1977/8

Twenty seven flights, totalling 52½ hours of flying time, were made during the period from 23rd May to 2nd October 1977. The majority of these flights took place during the months of July and August when crop marks were at their best. Principal sites recorded during the season include a possible long barrow at Marlingford (p. 92) and a small interrupted ditched enclosure and a possible long barrow at Roughton in north east Norfolk. These features resemble the excavated long barrow at Rudham (Hogg 1940, 315-31) and may form a regional group similar to that of the small oval long barrows of Sussex, in that each is totally surrounded by its quarry ditch (Drewett 1975, 137-44). The complete outline of the Roman marching camp at Horstead with Stanninghall, first reported in 1976 (Edwards 1976, 261, fig.71, pl.XXVIII) has been recorded and allows a revision of the area of this site (p. 100).

IV. RECENT RESULTS

THE PREMONSTRATENSIAN ABBEY OF ST.MARY, WEST DEREHAM, NORFOLK

Unlike many of the other religious houses in Norfolk, there is little above-ground evidence for this abbey, site 4396 (Fig.44). Situated above the Fen edge in a remote part of south west Norfolk, it is typical of the location chosen by members of the order of Prémontré - founded by St.Norbet and adopting the rule of St.Augustine - which at the height of its influence claimed only thirty two houses in England and a further one in Scotland. Newhouse was the mother house of the order in England and the parent of Welbeck from which West Dereham was colonised in 1188 by its founder Hubert Walter, when Dean of York.

West Dereham is one of three Premonstratensian houses in Norfolk. The others being at Langley in the south east and at Wendling in the centre of the county. Both were relatively unimportant and were valued at only £56 and £55 respectively whilst West Dereham was a thriving house valued at £208 in c. 1535 (Colvin 1951, 129ff; Knowles and Hadcock 1953, 183-93).

In 1199 a four day annual fair and a weekly market were granted and in 1291, when the Ecclesiastical Taxation roll was drawn up, the Abbey held property in thirty three

parishes in Norfolk as well as in the Dioces of Ely, Lincoln and York and by 1478 it also held five churches.

It is clear that much of the prosperity enjoyed by West Dereham was due to the grants of the founder and influence which he exercised on behalf of those who resided there. This was especially so during the time when he was Archbishop of Canterbury, when the Abbey and its tenants were exempted from all tolls and taxes.

Nine visitations to West Dereham are recorded between 1475 and 1503, and finally in 1536 when Legh and Ap Rice (Cox 1908, 417) described the house as being:

> one in which the canons were all incontinent, and were ready to confess themselves as such, longing to marry and believing that the King had been sent on earth to bring this about.

Petition for dissolution was made in 1538 and granted, Abbot Roger was granted the unusually large pension of £66.13s.4d. with smaller sums to five of his canons on the 6th November 1539 (Cox 1908, 418).

In 1682 the lands of the Abbey passed from Sir Henry Dereham, who died without issue, to Sir Thomas Dereham who built the house known as 'Dereham Abbey' on the site of the former religious house and described by Blomefield (1807, 326) as being:

> about a mile south of the parish church; the old gate-house or tower is still standing, and entire, and seems to have been built in the reign of Henry VI. It is a noble, lofty, four square pile of curious workmanship of brick embattled; at each corner arises an octagonal tower, with quoins of freestone, and over the arch of the gate, which is of stone and lofty ... On each side of this elegant gate or tower adjoining to it, Sir Thomas Dereham, the envoy, built a long, stately and lofty wing, with a quadrangle and a cloister on the south side, containing many grand rooms, galleries &c...

Within the ruins of this emparked house only a few buttressed walls remain of the earlier Abbey (Goldie 1912, pl. facing 12) and it is likely that the crop marks to the east (Fig.44, 17) of this ruin indicate the east range of the seventeeth century house (Fig.44, 18). Earlier air photographs of the site taken by Professor St.Joseph indicate crop marks within the park, which is defined by the present boundary of trees, but further information was not available until the summer of 1976 (Fig.44, Plate XIX-XXIII).

The Gate House (Fig.44, 7, Plates XIX-XXIII)

Initially photographed under a crop of sugar beet on 8th July 1976, when the remainder of the abbey was under cereals, the plan of the gate house indicates a structure 14 m deep and 18 m wide, with a passage 7 m wide. It was not until the following year that it became apparent that the structure was heavily buttressed externally and that the internal arrangements of the gate passage reduced the roadway to approximately 2.5 to 3 m in width. A small chamber in the rear of the gate house is well defined, as is a small annexe attached to the south west corner. The precinct wall adjoins the north west buttress but the wall on the east does not appear to join the structure. The negative crop mark of a well-made road gives access from the gate house to the western range of the Abbey.

The early authorities are quite definite that the former Abbey gate house was built into the residence of the Dereham family. This is brought into question by the crop marks of the structure in the north west of the precinct. Three alternatives may be considered. First that the early authorities were wrong and that the Dereham's house did not contain portions of the monastic gate house. Secondly, that this 'gate' may have been

Photo: Derek A.Edwards TF 6600/H/AFW17

Plate XX. West Dereham: a near vertical view of the crop mark site of the abbey (8th July 1976).

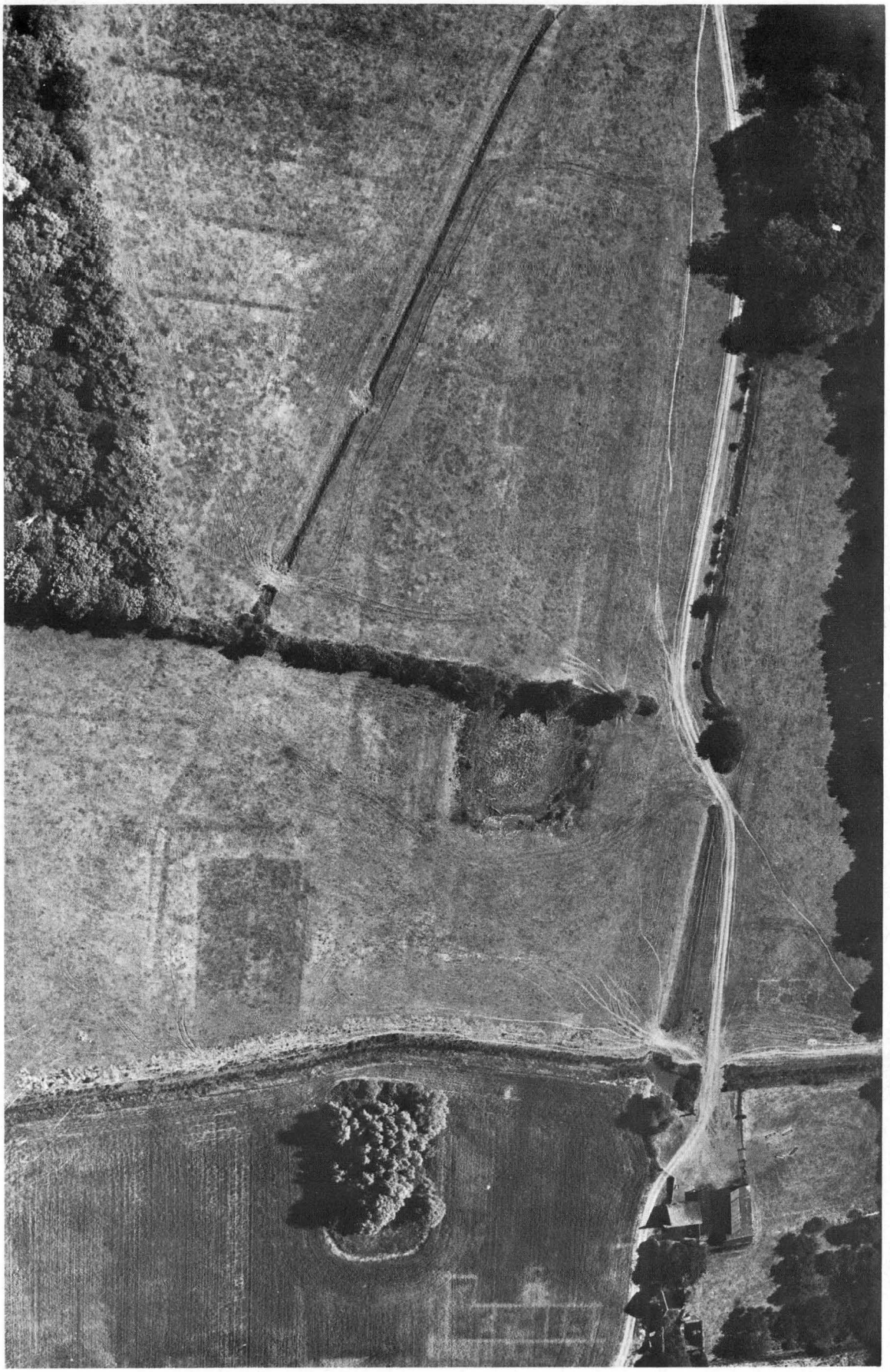

Photo: Derek A.Edwards TF 6600/M/AFW21

Plate XXI. West Dereham: a near vertical view of the southern half of the abbey precinct. The location of the fishponds is indicated by areas of high moisture retention in the pasture (8th July 1976).

Photo: Derek A.Edwards TF 6600/J/AFW18

Plate XXII. West Dereham: a near vertical view of the gate house and Great Barn of the abbey, seen as a crop mark in sugar beet. The quality of the crop marks, although good, should be compared with that of a cereal crop (Plate XXIII) under stress on the same site in the following year (8th July 1976).

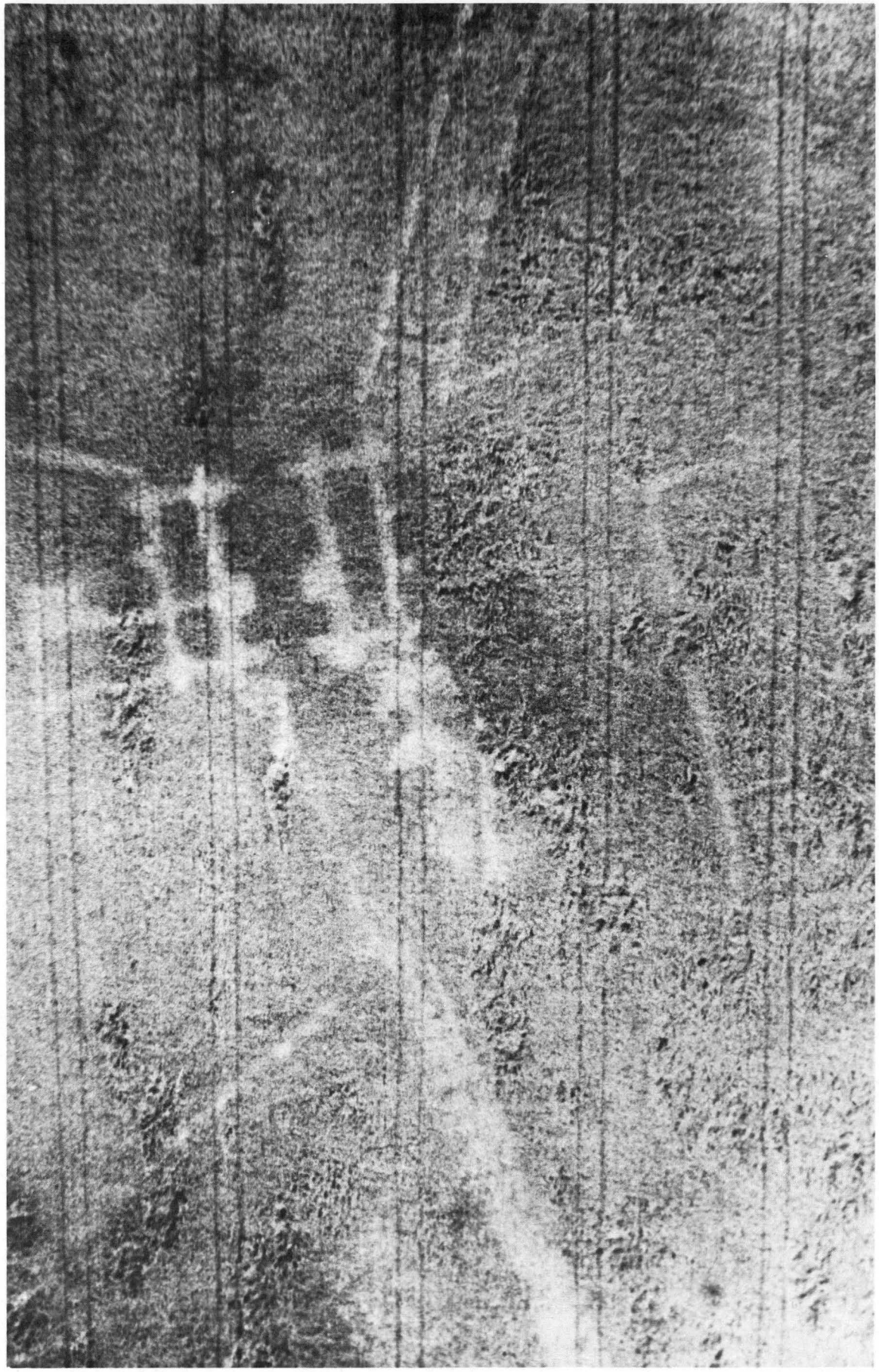

Photo: Derek A.Edwards TF 6600/AC/AMB2

Plate XXIII. West Dereham: a near vertical view of the gate house and Great Barn of the abbey, seen as a crop mark in cereals. Photograph via an internegative from GAF 500 ASA Colour Reversal Film (29th July 1977).

WEST DEREHAM, NORFOLK

Grid N

S

St Mary's Abbey

4396

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

3000⁰⁰

5660⁰⁰

KEY

UNDIFFERENTIATED CROP MARKS

PARISH BOUNDARY

STANDING STRUCTURE

20m 0m 100m 200m

compiled and drawn September 1977 by D.A.Edwards

Fig.44. West Dereham: plan of crop mark evidence for the Abbey of St.Mary's.

a very large porch, like that at Leiston in Suffolk which is surmounted by octagonal towers such as that described by Blomefield. Thirdly, that there were two gate houses. Clearly there can be little doubt that some early structure was incorporated in the house and so one should consider the other two alternatives. Had the 'gate' been a large porch it would have given access to the west end of the Abbey church and not the cloister. Therefore this possibility cannot be considered. It is common for large monastic houses to have two or more gateways into the precinct and it is here that the answer may be sought. However, it is possible that at the time Dereham's house was being erected that no trace of the north gate house remained. Otherwise some reference as to which structure became incorporated into the house could be expected in contemporary descriptions.

The Great Barn (Fig.44, 2, Plates XIX, XXI and XXII)

Measuring some 30 x 10 m the Great Barn, 15 m east of the gate house, was entered by a doorway placed assymetrically in its west side. Internally the structure was divided by a cross wall placed 10 m from its southern end.

North Structure (Fig.44, 3, Plates XIX and XX)

Immediately north of the presbytery of the monastic church is a large structure, on an east to west axis, measuring 25 x 7 m.

The Monastic Church (Fig.44, 4, Plate XX)

Due to the spread of impervious material and debris from the demolition of the abbey, much of the detail of the church and cloistral area is masked by large areas of light or negative crop marks. However, it is possible to discern that the presbytery was of the long and aisless type, typical of the order, extending 6 m beyond the square-ended chapels of thirteenth century type. The abbey was founded in the final years of the twelfth century and it is possible that these represent the original plan and not a later rebuild. There is no crop mark evidence to the contrary. Nothing is visible of the nave and crossing.

The Chapter House (Fig.44, 5, Plate XX)

South of the church and on the east side of the Dorter range are the extremely clear crop marks of a large polygonal chapter house. That this stood apart from the east range is an indication of its height and that it was entered via a vestibule from the cloister. A circular crop mark in the centre of the structure suggests a vaulted ceiling supported by a pillar.

The Infirmary (Fig.44, 6, Plate XX)

The infirmary was located to the east of the main cloistral area and was composed of four separate buildings; two of the three which intercommunicate faced onto a small enclosed court. A passageway connected this area with that to the south of the Frater range (7) and the kitchen block (9).

The Frater (Fig.44, 7, Plate XX)

The Frater range on the south of the cloister is ill-defined but the indications are that the main room measured c. 10 x 7 m. The only entry apparent from the crop mark evidence is the south door which led to the kitchen block (9).

The Western Range (Fig.44, 8, Plate XX)

Little trace remains of this range but the western extent may be defined by the line of a single wall which is discernible from the spread of negative crop marks caused by debris overlying this area.

The Kitchen Block (Fig.44, 9, Plate XX)

The crop mark of the building presumed to be the kitchen measures some 8 x 10 m, and a linear crop mark, probably that of a drain, appears to connect it to the main water course (11) on the north side of the Reredorter (10).

The Possible Reredorter (Fig.44, 10, Plate XX)

A building which may have been the Reredorter is placed some 65 m south of the main area of the abbey. Whilst it is clear that it was supplied from a main east to west conduit which passed through the precinct (11), detailed arrangements for the service of the building cannot be distinguished. The structure is some 25 m long and 6 m wide with a return of 4 m at the east end and a large buttressed construction on the south side.

The Conduit (Fig.44, 11, Plate XX)

The conduit passed from east to west through the precinct to the north of the Reredorter but there is no indication of the method of supply to this feature. It is defined in places by two parallel lines of negative crop marks and in others by a single wide crop mark, thus indicating that the construction may have been of the barrel vaulted type and not an open sewer.

The Southern Structure (Fig.44, 12, Plate XX)

To the south west of the main abbey buildings is the crop mark of a simple rectangular structure measuring 25 x 7.5 m.

The Fishponds (Fig.44, 13 and 15, Plate XX)

One depression (15) is marked on the Ordnance Survey maps and it is highly likely that this and the crop mark of a large rectangular feature further to the east, caused by high moisture retention (13) were the fishponds of the abbey. This opinion is reinforced by the fact that each is served by a channel (16 and 14 respectively).

Conclusion

The importance of the abbey was already clear from the early records but now it is possible to determine the size and nature of the complex and a significant number of the buildings of which it was composed. The church, cloister and ancilliary buildings here described occupy c. 1.4 ha, an area greater than that of the equivalent structures at the Cluniac priory of Castle Acre.

The fortuitous conditions experienced in the summers of 1976 and 1977, together with the rotation of deep rooted crops (cereals and sugar beet) combined to produce exceptional crop marks which would normally never develop on such a low lying site. It is unlikely that such a chance combination of factors will recurr again for some considerable time.

AN OVAL ENCLOSURE AT MARLINGFORD

Recent aerial reconnaissance has revealed crop marks of an oval enclosure (site 13357) above the 75 ft contour and overlooking an oxbow of the river Yare. The enclosure is orientated at 20° to Grid North and is located some 125 m north of the parish church at Marlingford. The crop marks may indicate a long barrow approximately 15 m wide and 30 m long, the widest part of the feature being that to the south (Fig.45, Plate XXIV). There are no apparent breaks in the line of the encompassing ditch, which is rounded at either end and similar in plan to that recently discovered at Roughton (p. 93).

A DOUBLE-DITCHED ENCLOSURE AT GREAT WITCHINGHAM

In plan the crop marks (site 1018) indicate an irregular, double-ditched, enclosure approximately 32 m in diameter with a possible entrance 12° west of Grid North and

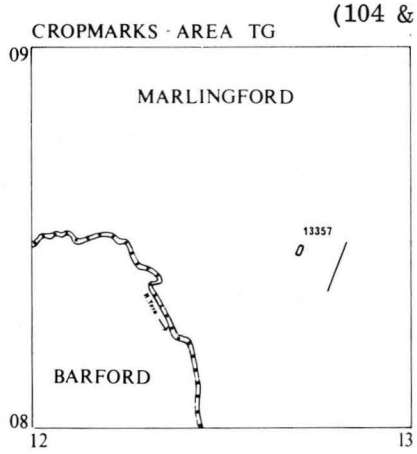

Fig.45. Marlingford: plan of crop marks in area TG 1208.

another 90° further to the west (Fig.46, Plate XXV). Within the ditches are a number of pits or post holes forming an internal circle or an irregular 'horse shoe' shaped setting around a central assymentrically placed feature. The remaining pit is placed almost on the line of the internal ditch but is distinct from it. In the general configuration of the ditches the site is closely similar to that of Dorchester XI (although Witchingham has only two, rather than three, ditches) and with Dorchester I in its external dimensions (Atkinson, Piggott and Sandars 1951, figs.4, 5 and 24).

The site is situated on the southern bank of a tributary of the river Wensum, in a location typical of a henge monument (Atkinson 1951, 84). If the site is a henge it would be only the second monument of this class in Norfolk, the other being at Arminghall (Clark 1936, 23 ff).

Situated 16 m south east of the enclosure, within a complex of curvilinear features is a rectangular crop mark 9 x 7 m, while a further 67 m to the south is a ring ditch 19 m in diameter.

AN INTERRUPTED DITCHED ENCLOSURE AND OVAL ENCLOSURE AT ROUGHTON

The same exceptional conditions which prevailed in the Wensum valley during July 1976 were also to be found in other areas of the county, especially in the north and north east where the high quality of the soil, together with the high level of soil moisture, usually precludes the formation of crop marks.

Beside the headwaters and tributaries of the rivers Ant and Bure many previously unrecorded sites were visible. By the Hagon Beck at Roughton, for instance, the crop marks of a small interrupted ditched enclosure were recorded on the 30th July (site 11358, Fig.47, Plate XXVI). Features such as these are now identified with Neolithic causewayed enclosures (Wilson 1975, 179; Palmer 1976, 161-86). The enclosure is almost circular and 1.22 ha in area. It is encompassed by a ditch which is approximately 3 m wide, as far as may be determined from the air photographs. The individual sections of the ditch appear to vary in length from 8 to 20 m. There are eleven causeways of which the largest are 12 to 22 m wide; but the apparently disproportionate size of the latter may be due to the masking of one causeway by crop marks of geological features.

Some 5 m within the enclosure, on the north east side, is the crop mark of an apparent palisade. Outside the enclosure to the south west is a possible 'outlier' (marked '?' on Fig.47). In having a single ditch, internal palisade and an area of 0.95 ha the enclosure closely resembles that at Melbourne, Cambridgeshire (Palmer 1976, fig.20). Few examples of this type of interrupted ditched enclosure are found in eastern and southern England, most having been found in Wessex, on the Upper Chalk and Greensands of

Dorset, Wiltshire and Sussex; the remainder, of which Melbourne is one, are all suspect in some way.

Causewayed camps and 'interrupted ditched enclosures' are both to be found in association with other monuments, usually funerary, of the same and later periods. Roughton is no exception to this. Within 3 km of the site there are some twenty two ring ditches and barrows, including an adjacent oval enclosure. Whilst it is common for long barrows to be found within 2-6 km of ditched enclosures or causewayed camps the crop mark at Roughton, 65 to 22-26 m (slightly larger than that at Marlingford p.92) is only 40 m distant. Beside this possible long barrow is another crop mark which might be interpreted as the eastern end of another long barrow; but this must await further clarification. The remaining crop marks seen in Plate XXV are those of recently removed field boundaries and trackways which were associated with a farmstead, of which little now remains.

A TRIPLE-DITCHED BOUNDARY AND GROUP OF RING DITCHES AT EARSHAM

During reconnaissance in the Waveney valley in 1975 two ring ditches and an apparent trackway were recorded adjacent to the Lay Pond, Earsham (sites 11676 and 11114 respectively).

Continued surveillance on the 6th July 1976 was rewarded with evidence of a further four ring ditches and a triple-ditched feature amidst a palimpsest of crop marks which included those of recent drainage trenches (Fig.48, Plate XXVII). The transient nature of these marks is emphasised by the fact that two days later, on the 8th July, again only two ring ditches were visible while the triple-ditched feature had resumed the appearance of a trackway, as it had previously been recorded [1].

All the ring ditches, which range in size from 10 to 44 m in diameter, lie to the west of the ditched feature which may be detected over a length of 270 m running north east from the A143 Harleston to Bungay road to the Lay Pond. No trace of it has yet been found between this road and the river Waveney to the south, or northwards from the Lay Pond.

The outer ditches are approximately 3 to 4 m wide and 18 m apart. That to the east has an apparent break 14 m wide, some 124 m from the line of the modern road. Here the ditches are slightly inturned as if for an entrance. Between the ditches is a third, discontinuous ditch approximately 2 m wide.

Features of this kind have long been known in the West Midlands and the Yorkshire Wolds, where they are often associated with pit alignments (Pickering pers.comm; Wilson 1978, 5, fig.1.1) and have been attributed there to the prehistoric period.

A POSSIBLE ROMAN TEMPLE AND RING DITCHES AT ALDEBY

The continued surveillance in the Waveney valley has allowed other sites, known but hitherto unrecorded by the author, to be photographed under the most favourable conditions. Amongst these sites are six ring ditches at Aldeby (site 12137) previously noted by Professor St.Joseph [2]. The ring ditches are set amidst a complex of linear and parallel features including a small 40 m square enclosure containing a penannular feature c. 18 m in diameter (Fig.49, Plate XXVIII). This could be interpreted as a Roman temple and temenos, similar in plan to that of Gallo-Roman type recently excavated on Hayling Island, Hampshire (Downey, King and Soffe, 1977a and 1977b). The square enclosure or temenos is defined by a 'positive' crop mark indicating the line of a ditch whilst that of the penannular feature (the cella) may be seen as a 'negative' mark in Plate XXVIII.

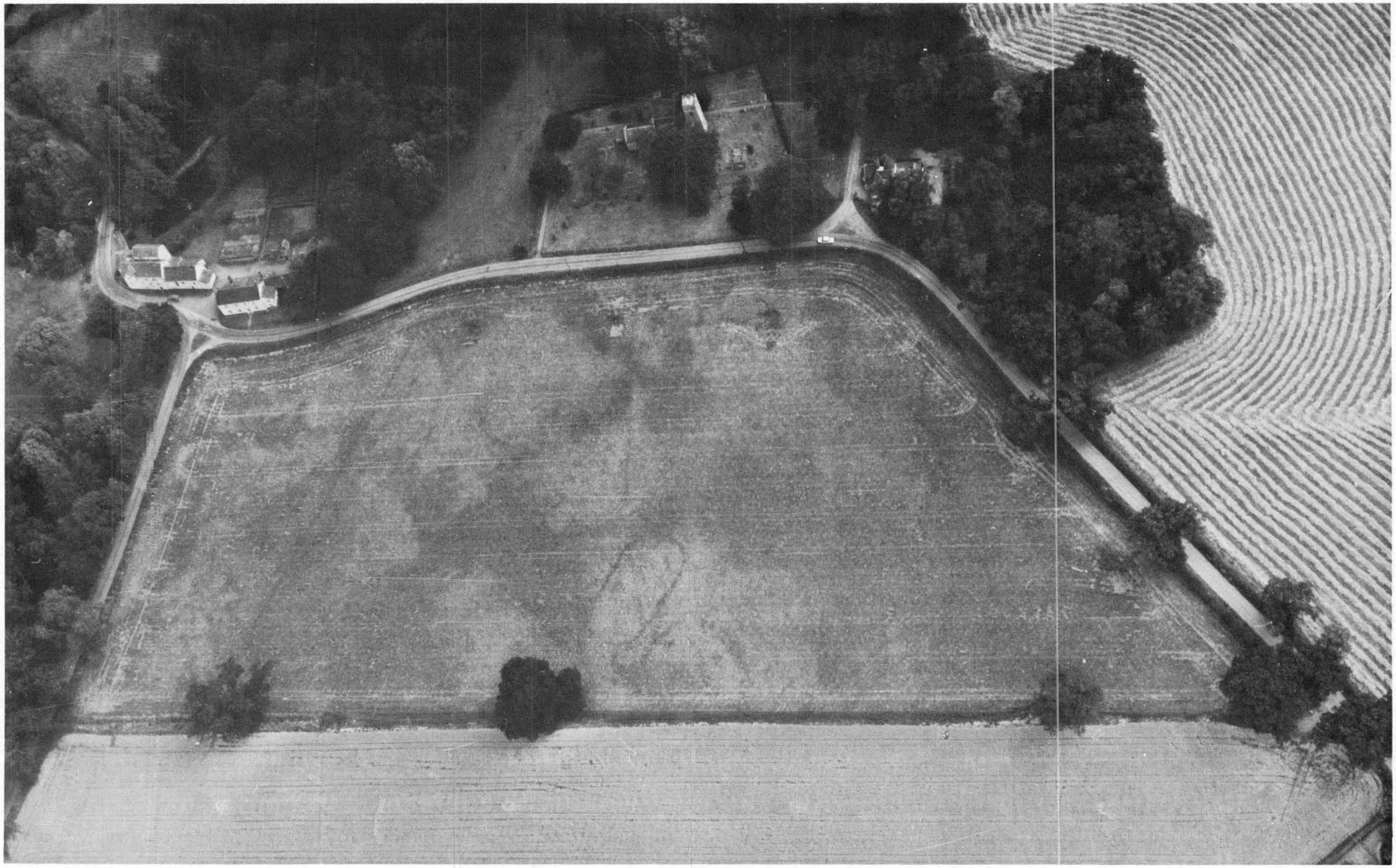

Photo: Derek A.Edwards TG 1208/A/AJ

Plate XXIV. Marlingford: crop mark of an oval enclosure to the north of the parish church, viewed from the north (20tl

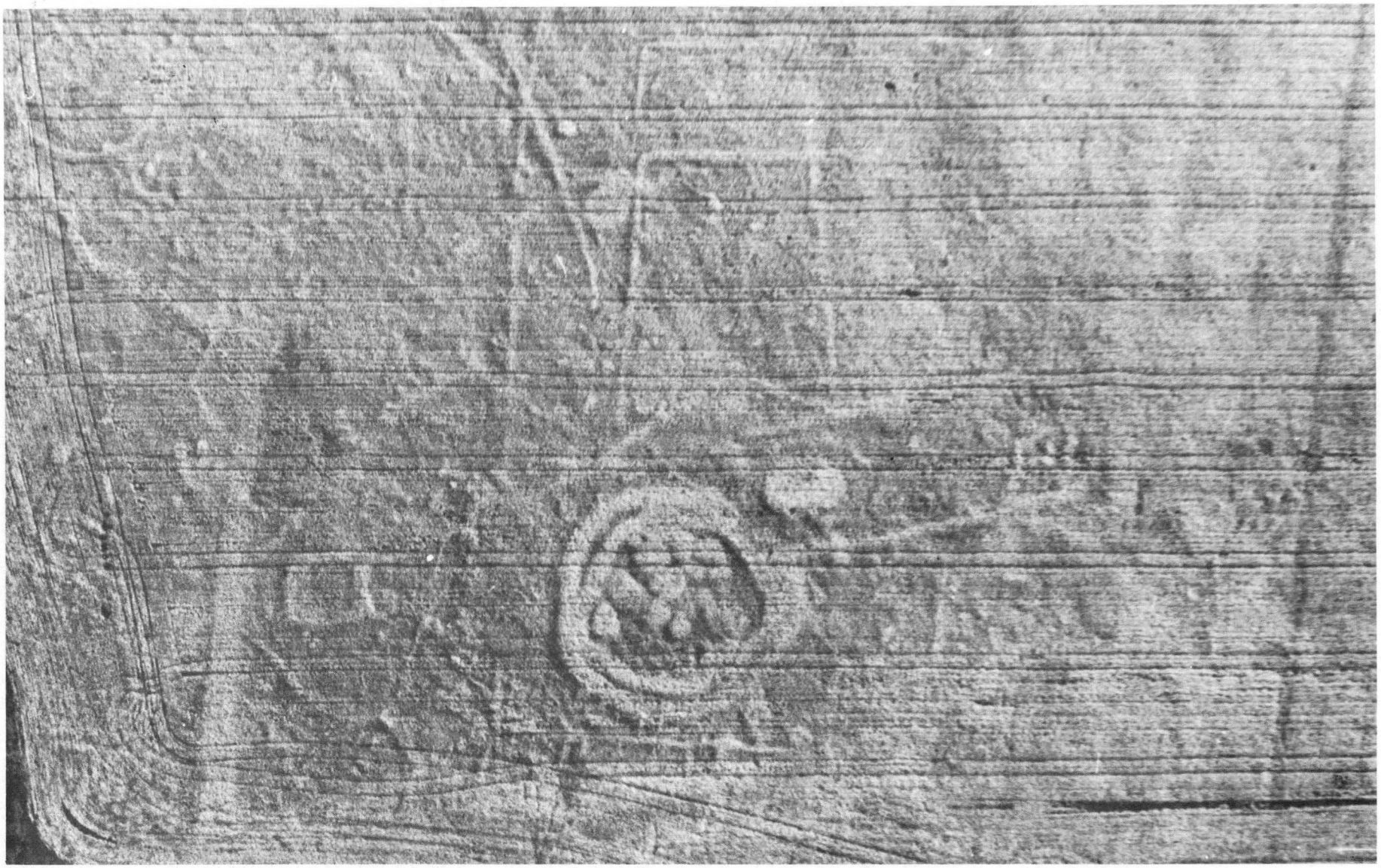

Photo: Derek A.Edwards TG 0918/AB/AKF6

Plate XXV. Great Witchingham: a near vertical view of a double-ditched enclosure and associated crop marks (30th July 1977).

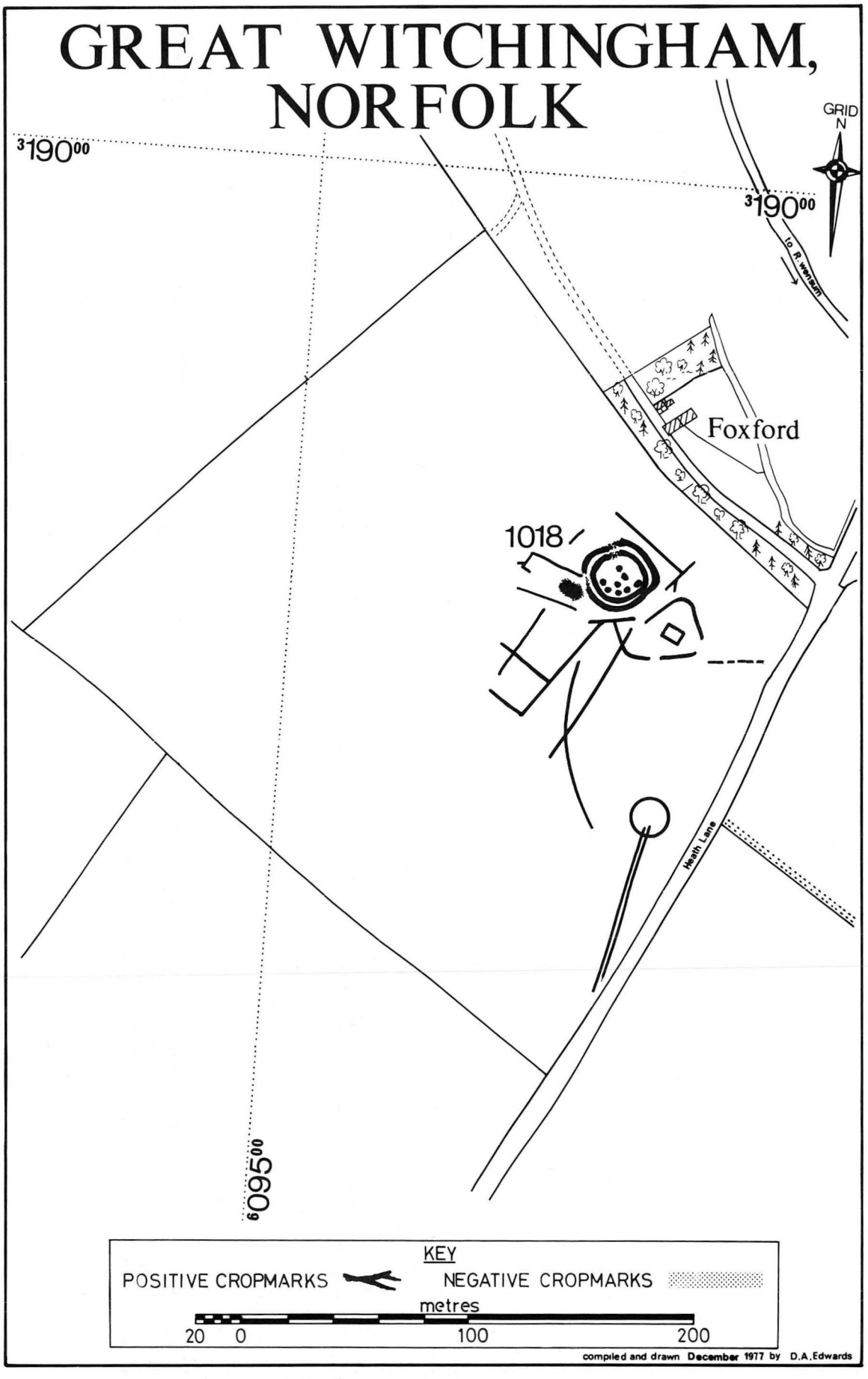

Fig.46. Great Witchingham: plan of crop mark evidence for the double-ditched enclosure and associated features.

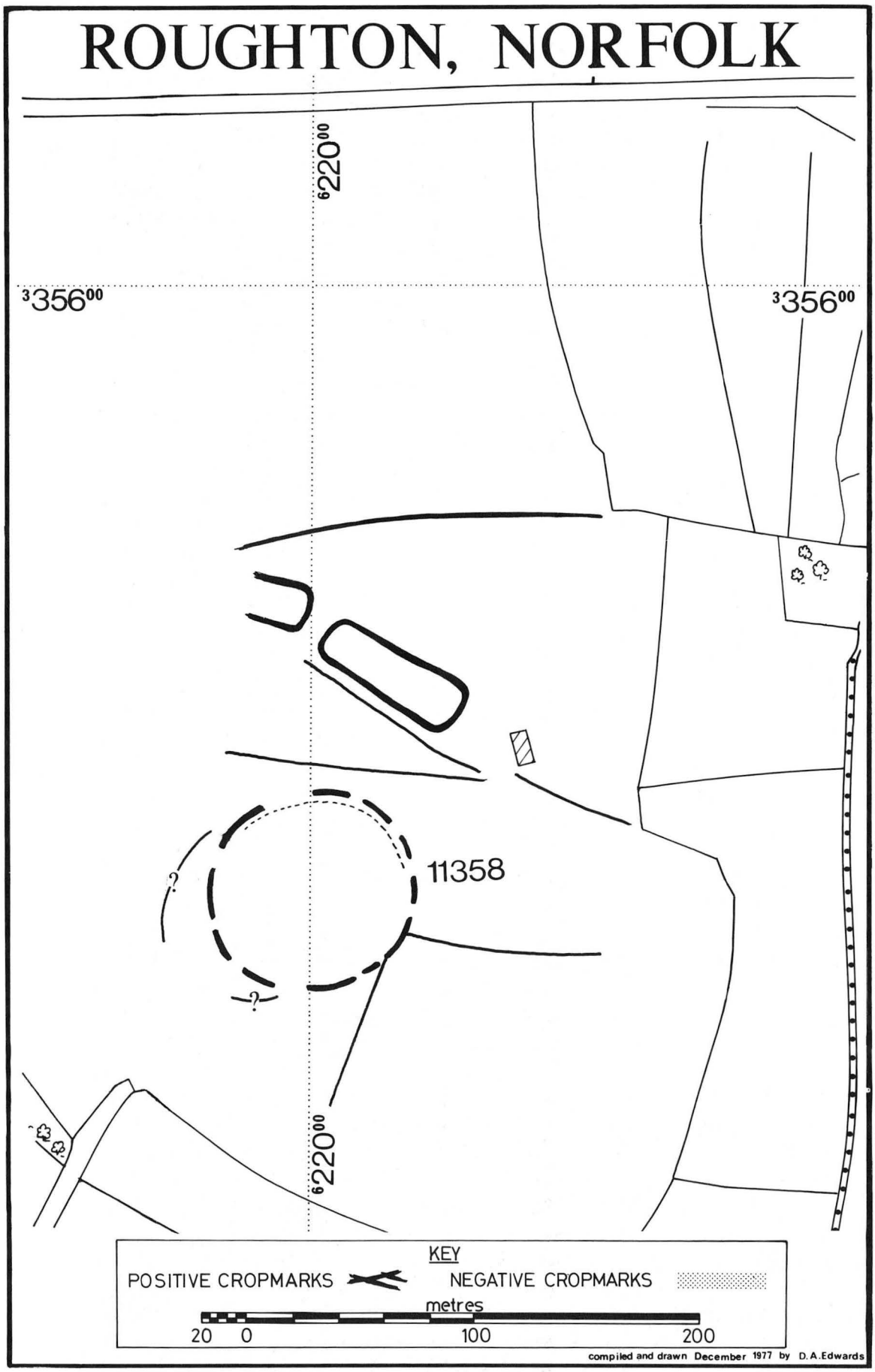

Fig.47. Roughton: plan of crop mark evidence for the interrupted ditched enclosure and oval enclosure.

Photo: Derek A.Edwards TG 2235/A/AKP23

Plate XXVI. Roughton: crop marks of the interrupted ditched enclosure and oval enclosure, from the west (31st July 1977).

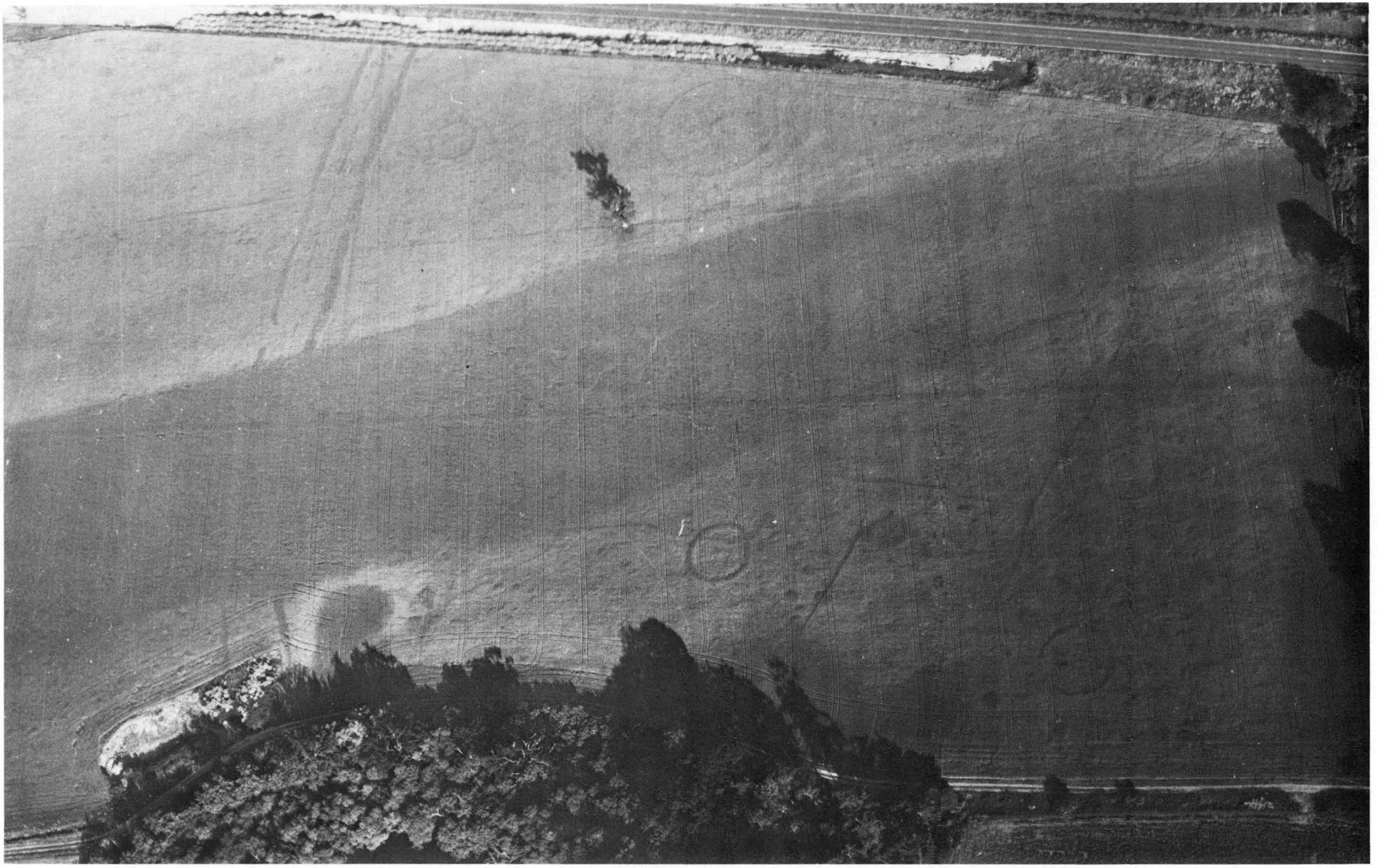

Photo: Derek A.Edwards TM 3087/H/AHQ13

Plate XXVII. Earsham: crop marks of triple-ditched boundary, five ring ditches and associated features (6th July 1977).

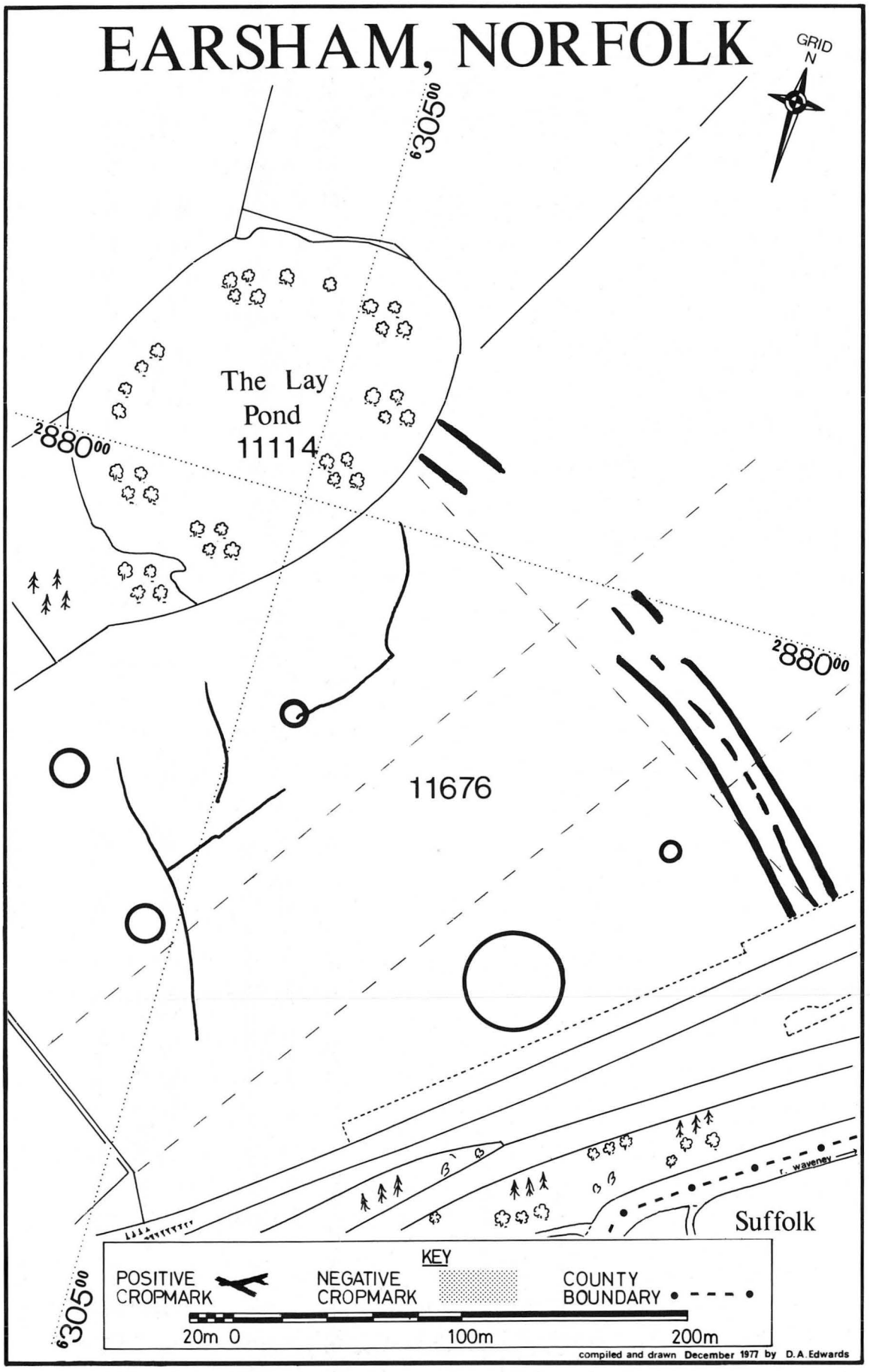

Fig.48. Earsham: plan of crop mark evidence for the triple-ditched boundary, ring ditches and associated features.

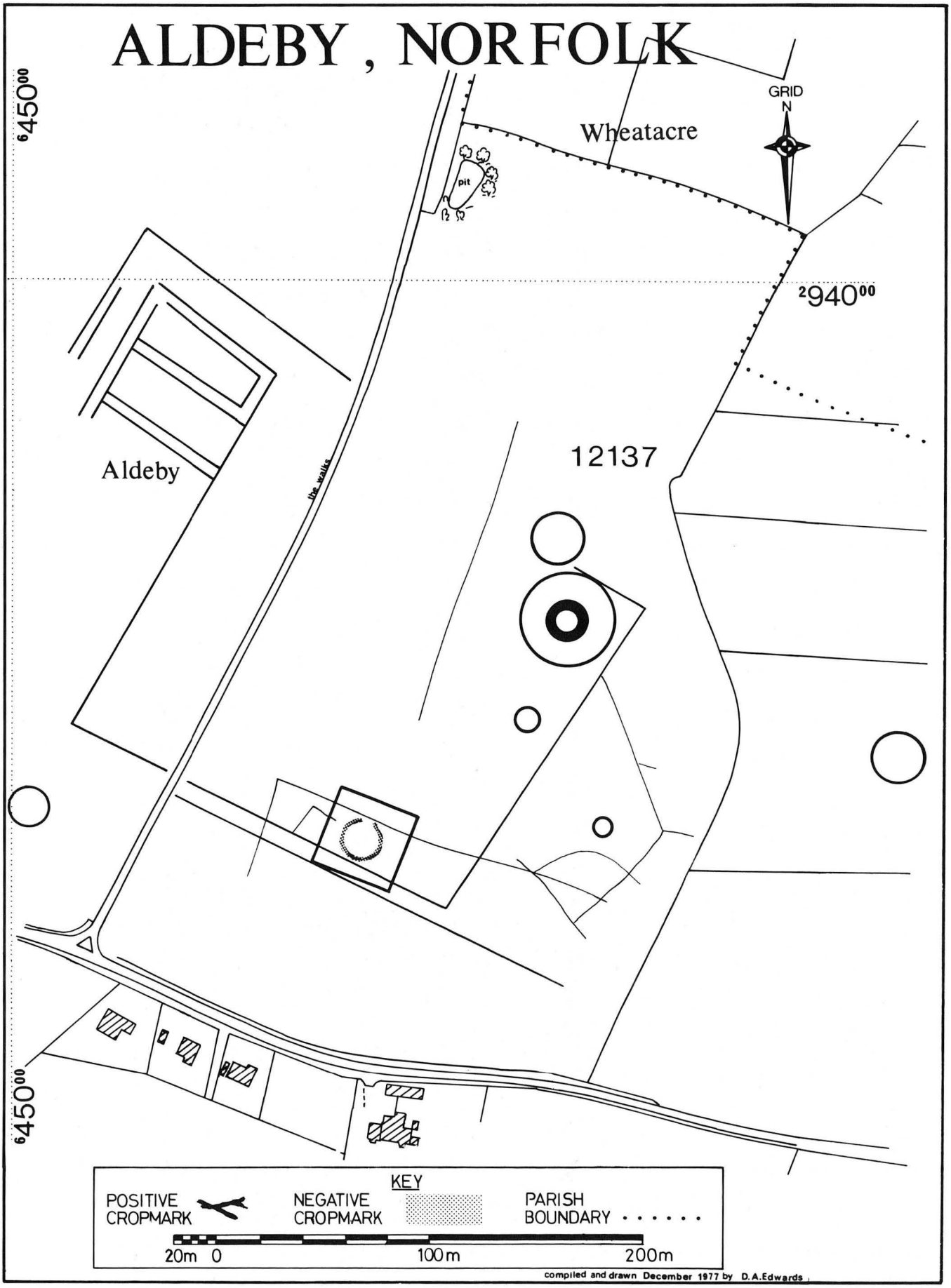

Fig.49. Aldeby: plan of crop mark evidence of a possible Roman Temple and ring ditches.

Photo: Derek A.Edwards TM 4593/J/AHS17

Plate XXVIII. Aldeby: crop marks of a possible Roman temple, three ring ditches and associated features (6th July 1977).

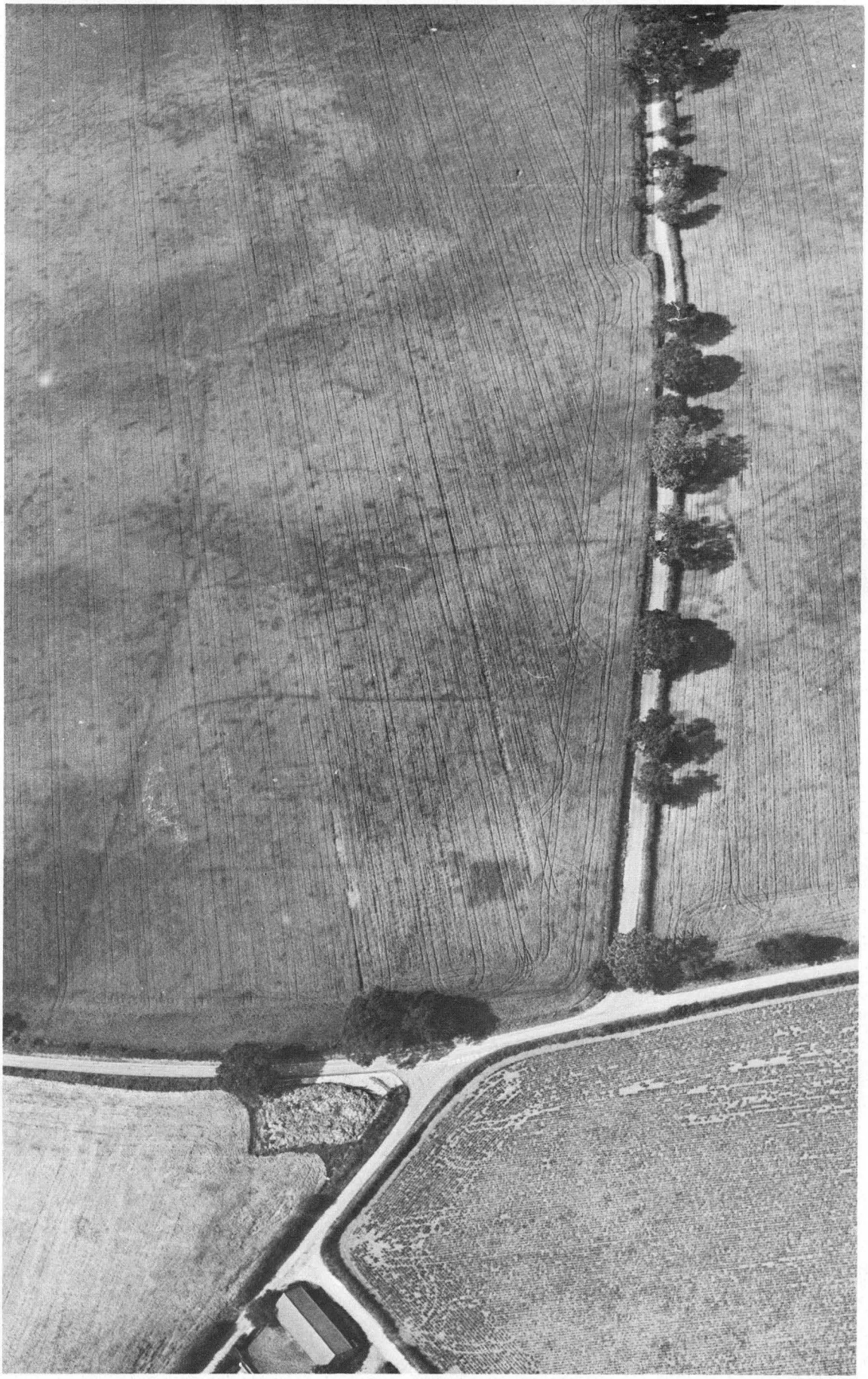

Photo: Derek A.Edwards TG 2031/D/AFE13

Plate XXIX. Erpingham: crop marks of possible timber buildings and associated enclosures, viewed from the south (1st July 1976).

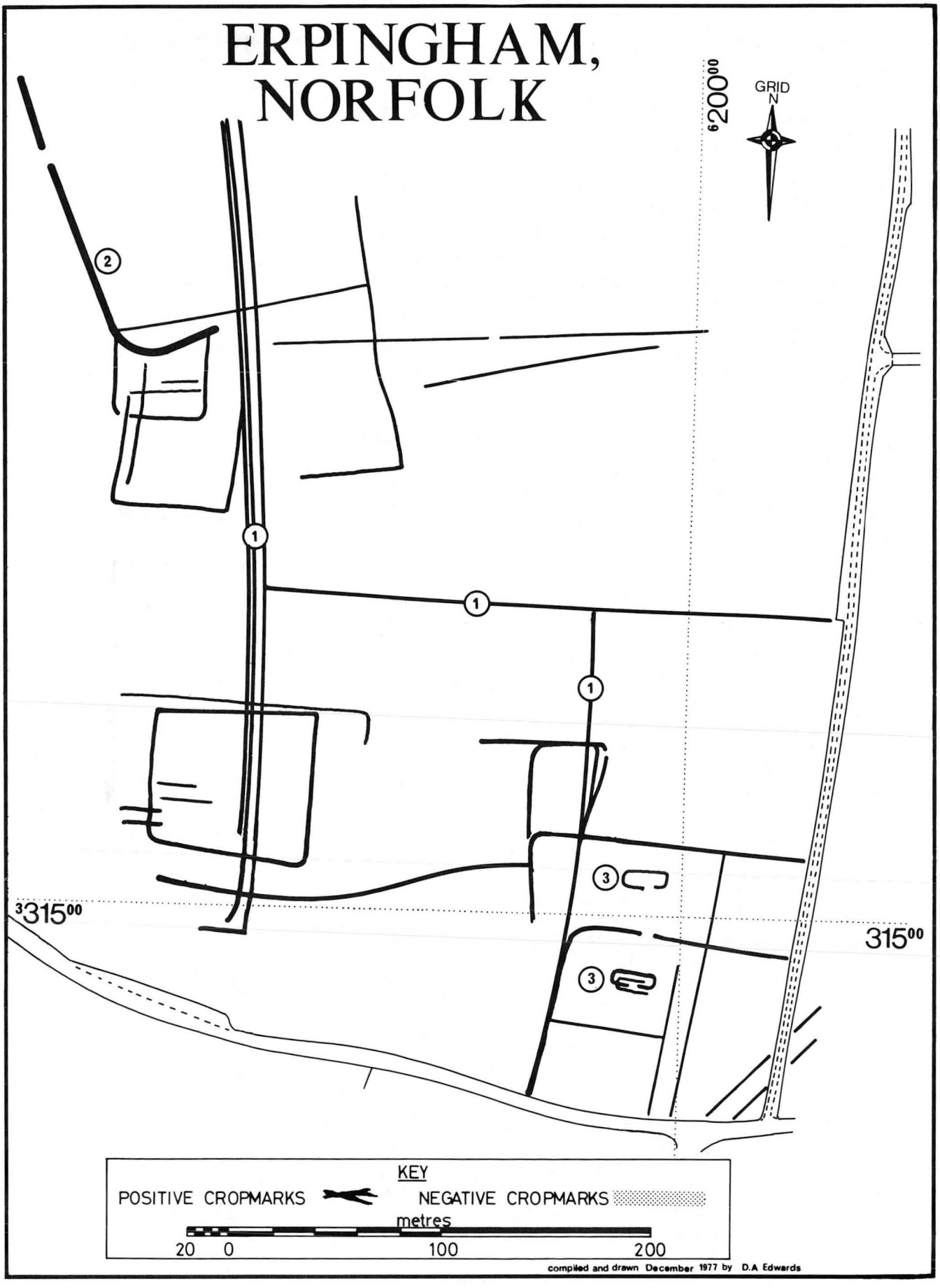

Fig.50. Erpingham: plan of crop mark evidence for the possible timber buildings and associated enclosures.

The dimensions of the temenos at Hayling Island and Aldeby are identical but the Hampshire cella is smaller (only 13 m in diameter). The plan of the temple at Aldeby is simple compared with Hayling Island for there are presently no traces of a porch or ambulatory, although there is an indication that one may exist on the north side of the cella.

THE ROMAN MARCHING CAMP AT HORSTEAD WITH STANNINGHALL

The site of the Roman marching camp at Horstead with Stanninghall was first reported in 1976 (Edwards 1976, 261, fig.71, plate XXVIII; Webster 1978, 106, plate 8; Wilson 1975b, 261, plate XVIII(b)). Further reconnaissance, on the 19th July 1977, has revealed the north east corner and the north and east sides of the camp which now appears to cover an area of 9.8 ha (Fig.51).

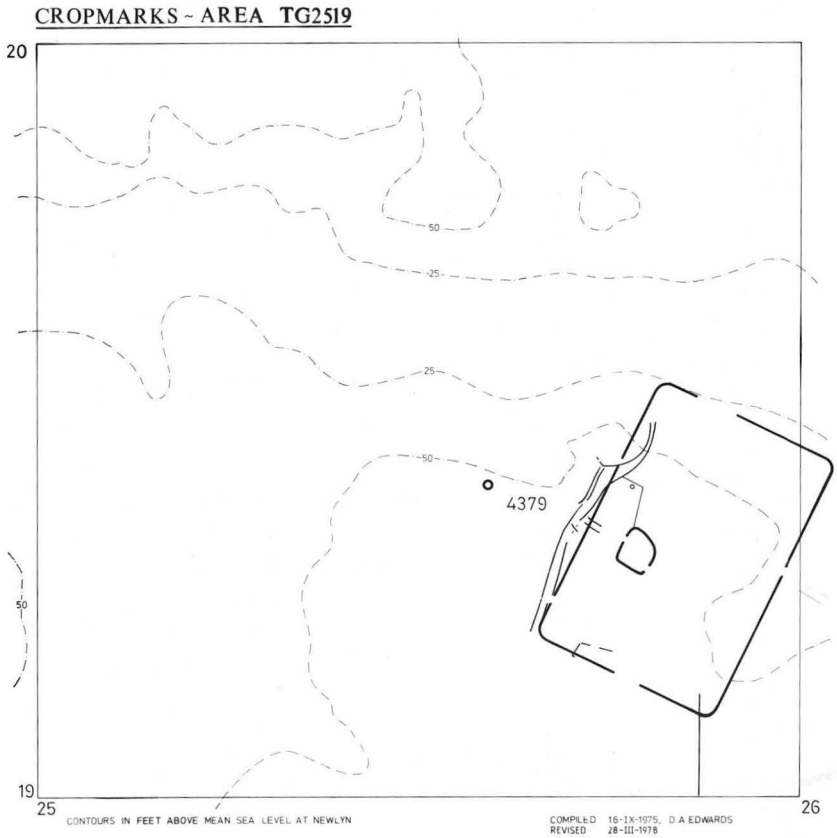

Fig.51. Horstead with Stanninghall: plan of crop marks in area TG 2519.

CROP MARKS OF POSSIBLE TIMBER STRUCTURES AT ERPINGHAM

Reconnaissance during July 1976 in the parish of Erpingham in north east Norfolk has revealed the presence of a complex of crop marks to the north of the parish church of St.Mary (sites 11761 and 12991, Fig.51, Plate XXIX). The complex is composed of the following elements: (i) recently removed field boundaries and a trackway (marked '1' on Fig.50); (ii) the west entrance and south west corner of a large ditched enclosure (marked '2') located on the highest point of the site (the remainder of this feature is masked by crop marks which reflect the underlying geology) [3]; (iii) a number of small enclosures which vary in area from 1.2 to 2 ha. Two of these small enclosures contain crop marks of smaller rectangular features (marked '3') each measuring approximately 4 x 18 m, probably foundation trenches for timber buildings. Their long axes are orientated on an east to west line and an entrance is situated centrally in their south sides. The southern enclosure was of two phases. A few sherds of pottery, including one possible piece of Thetford ware, have been recovered from the site.

ENCLOSURES AND RING DITCHES AT WATLINGTON

Reconnaissance along the eastern Fen edge of Norfolk and up to the line of the A10 during July 1974 revealed a small rectangular enclosure, two annexes and two adjacent ring ditches within the parish of Watlington in south west Norfolk (Fig.52, Plate XXX). The site, number 11725, is located just below the 20 ft contour at the east end of the parish.

The two ring ditches, 15 m and 12 m in diameter, are located at the north east and north west corners of the enclosure. The enclosure has an area of c. 2.1 ha and has two small annexes on its southern side. Whilst the ring ditches may tentatively be identified as the remains of Bronze Age barrows it should be borne in mind that the site as a whole might be of a single date and represent a small Roman-British settlement with native hut circles outside it. A similar arrangement may be seen at the site of the villa at Fring, where four circles were found outside the main enclosure (Edwards 1977, 234, fig.101, plate XXV). There are no finds recorded from the site.

A FORMAL VICTORIAN GARDEN AT BLICKLING HALL

On the 13th September 1975, the author, on a visit to Blickling Hall, noticed considerable variations in the condition of the lawns which could not be attributed to either variations in the subsoil or differential use of irrigation. It subsequently became apparent that these localised areas of lush growth were caused by the presence of areas of increased depth of topsoil, indicating the location of earlier flower beds in a complex formal garden (Fig.53, Plate XXXI, site 5115).

It was not until the summer of 1976, when drought conditions were at their extreme, that the opportunity arose to view the site from the air. Photographs taken then show that a clear plan of the earlier formal garden could easily be discerned. This may be interpreted as being the garden designed and layed out for the Marchioness of Lothian in 1872 and described as being composed of 'fussy little beds' (National Trust 1964, 28). Of this Victorian garden only the famous clipped yew hedges are said to remain but it is clear that the present herbaceous beds on the main lawn of the hall reflect and conform to the earlier layout of the garden.

To the north east of the hall may be seen further indications of a formal garden of different character, whilst beneath the windows of the Long Gallery and the North Wing are indefinite traces of further flower beds.

July 1978

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1. Unpublished air photographs in the Norfolk Archaeological Unit Air Photographs Index, refs: TM 3087/A-E.
2. Information from lists of archaeological sites in Norfolk as revealed by aerial reconnaissance conducted by Professor St.Joseph of Cambridge University.
3. Erpingham, Norfolk, an unpublished air photograph in the Norfolk Archaeological Unit Air Photographs Index, ref: TG 1931/J.

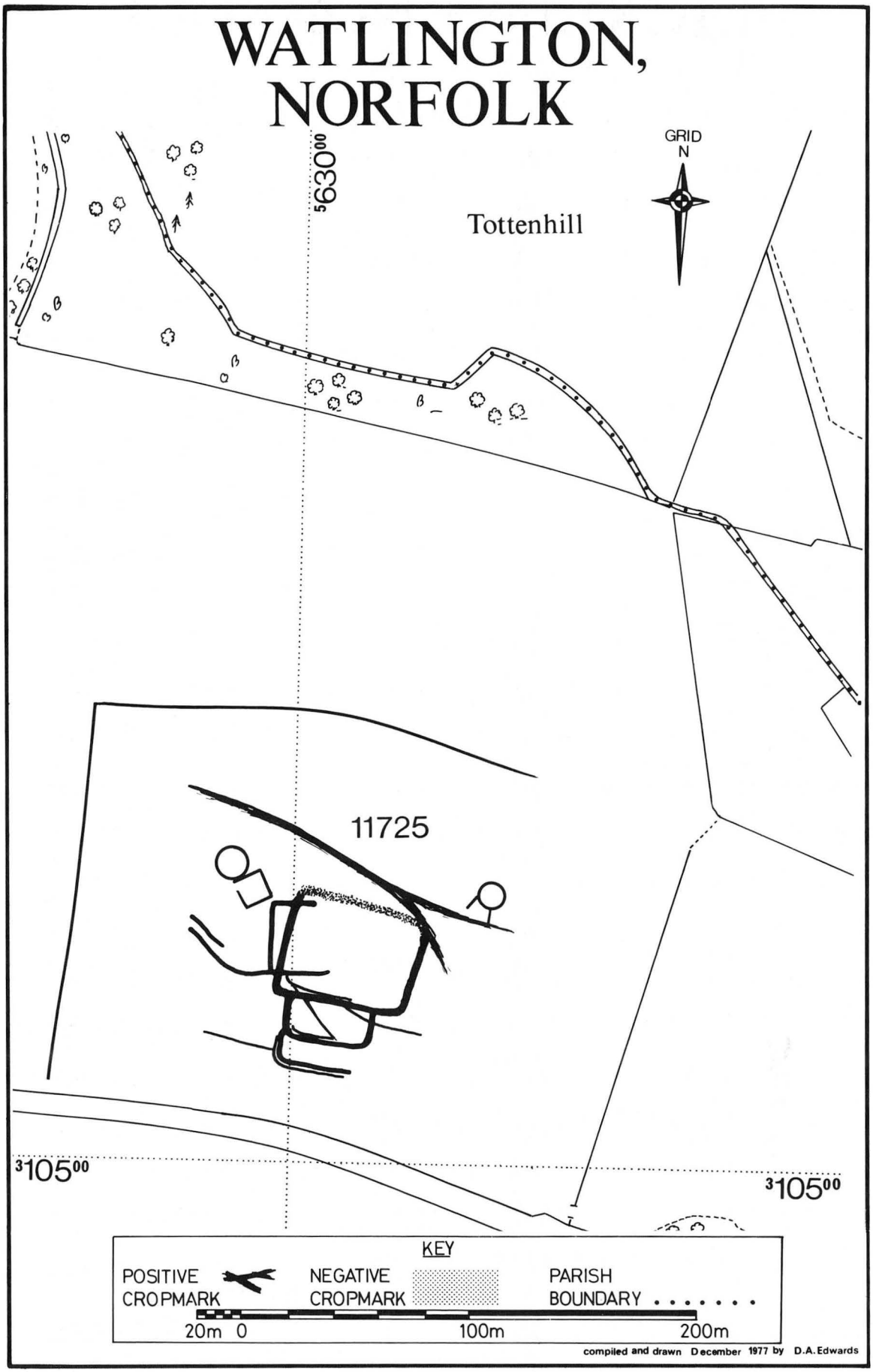

Fig.52. Watlington: plan of crop mark evidence for the enclosures and ring ditches.

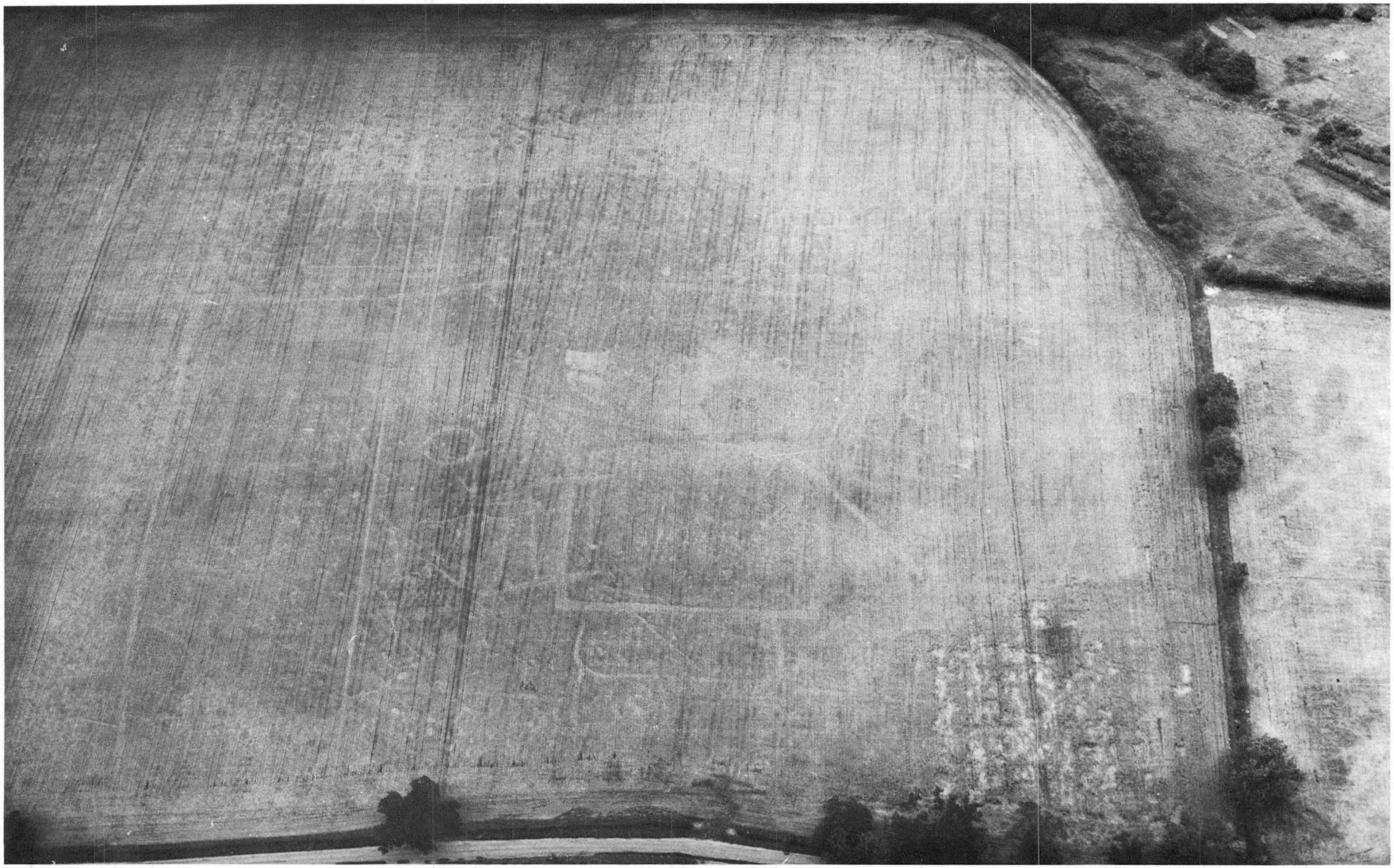

Photo: Derek A.Edwards TF 6310/E/ADF7

Plate XXX. Watlington: crop marks of enclosures and two ring ditches, viewed from the south (12th July 1974).

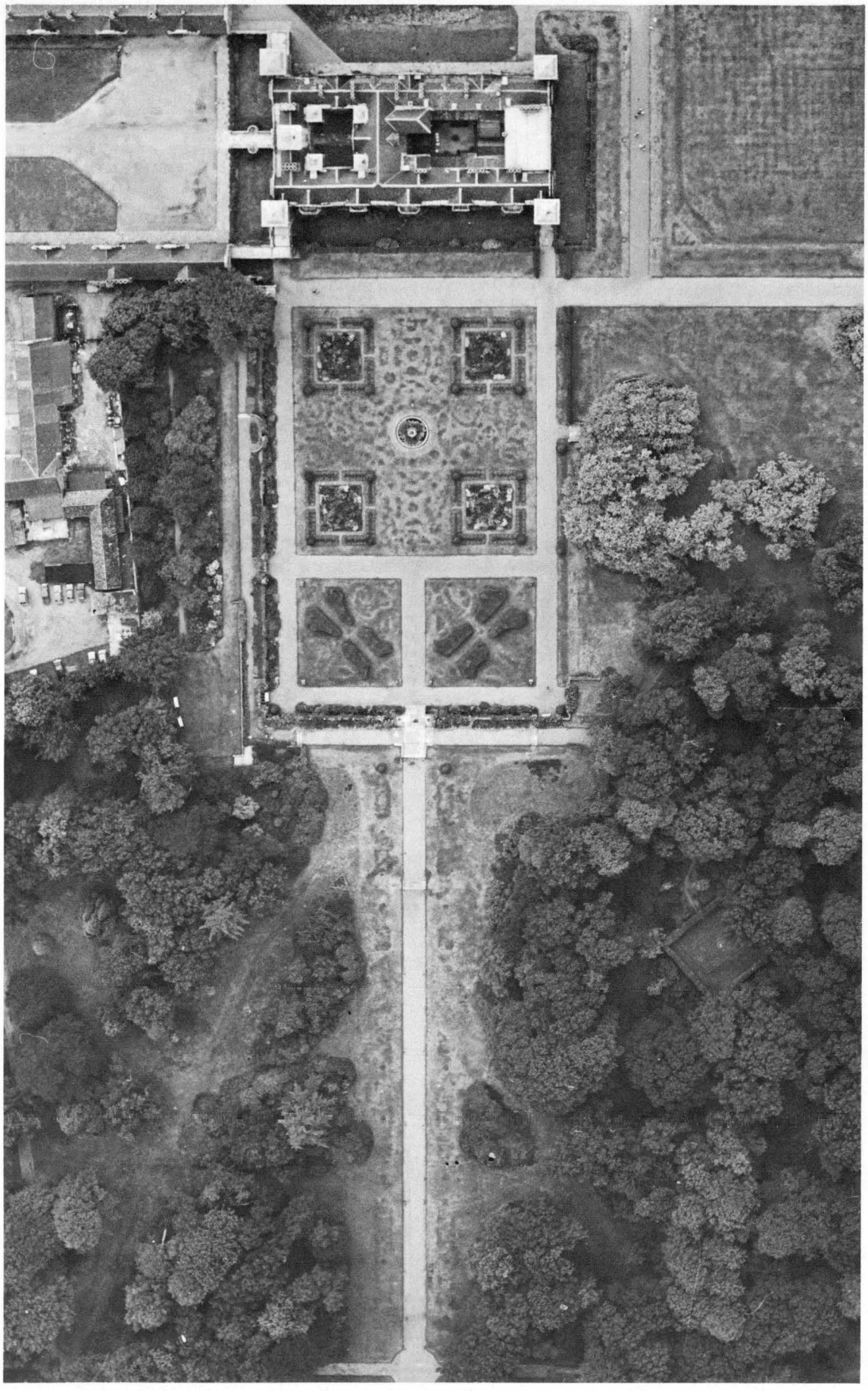

Photo: Derek A. Edwards TG 1728/J/AGU7

Plate XXXI. Blickling: a near vertical view of parch marks at Blickling Hall reveal the plan of a formal Victorian garden (3rd August 1976).

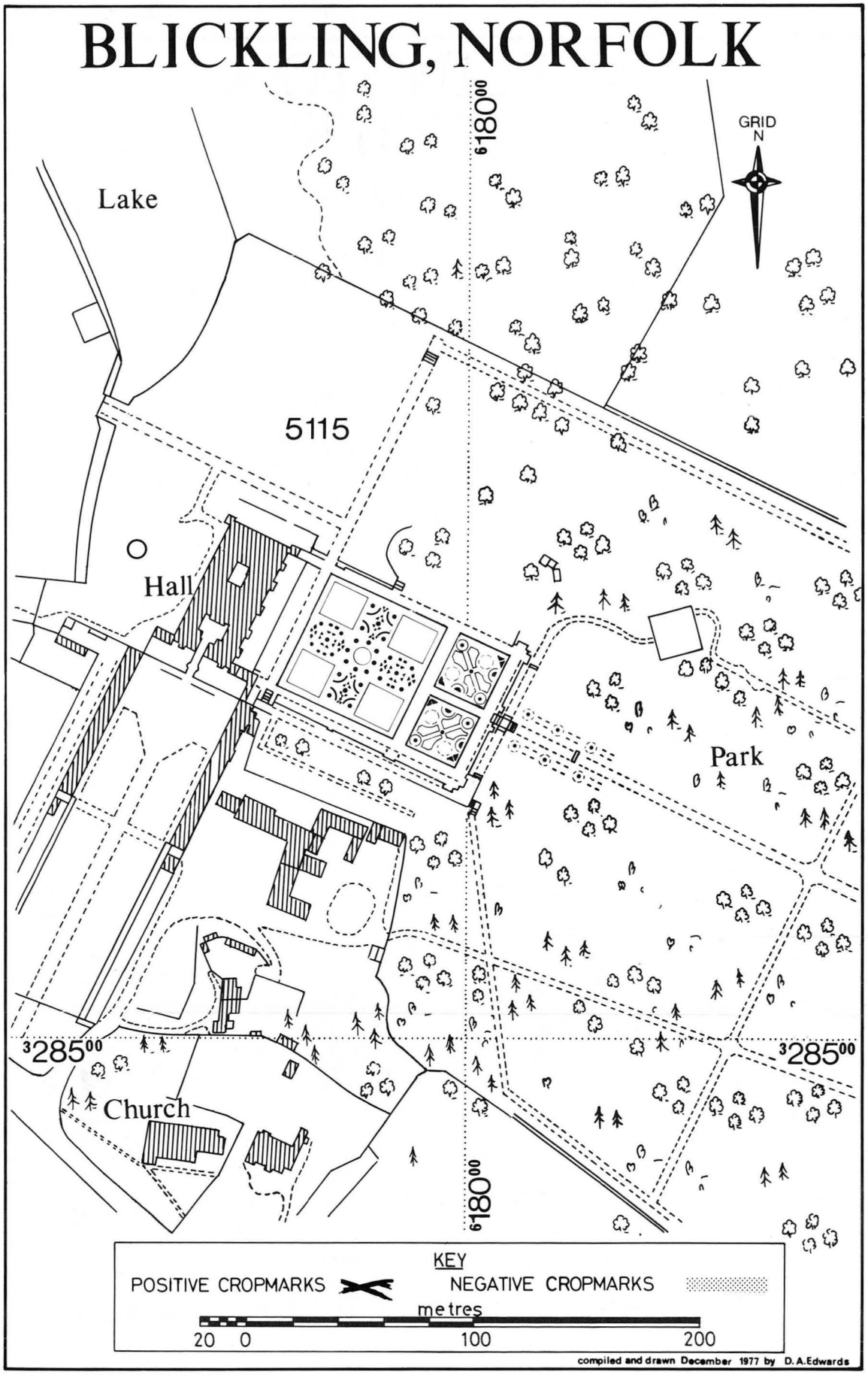

Fig.53. Blickling: plan of parch mark evidence for a formal Victorian garden at Blickling Hall.

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CORRIGENDA TO REPORT NO.5

Page xiii, line 2	Gillian Jones: for bird bones read animal bones
Page 1	This road is site no.11358
Page 141, line 38	Add Fig.60 to left of No.60
Page 142, line 1	For Fig.59 read Fig.60
Fig.100, facing p.232	Delete county number 1006 on field north of road
Plate XXVII, facing p.235	For TF 7334/W/AEQ14 read TF 7334/Y/AEQ14
Page 241, between lines 3 and 4	Insert: Edwards, D.A. and Green, C.J.S., 1977. 'The Saxon Shore Fort at Brancaster, Norfolk', The Saxon Shore, C.B.A.Res.Rep.18, 21-29.
Page 245, line 34	For Norfolk Archaeol. XXIV read XXXIV
Page 246, line 23	For Wright D.R. read Wright R.P.

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