

ELMS FARM, HEYBRIDGE, ESSEX. (HYEF 94) 1993-5

THE LEATHER

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Contexts

All the leather from Elms Farm was preserved in waterlogged conditions in 4 wells. Of the 18 small groups, 14 came from a large timber-lined well in context 16083 (H), the 'market place', interpreted as an area with a domestic function.

Two groups, one the finest shoe in the assemblage, both stylistically and in terms of the state of preservation, came from contexts 9879 and 9895 (D), respectively, an area with a road, ditches and a well. An insignificant fragment came respectively from wells in context 18236 (J), the temple precinct and context 20034 (L), with industrial activity; the well contained a wealth of artefactual material.

Condition

Much of the leather was in a very poor condition, fragile, crumbling, with some delamination, which restricted handling and impaired analysis. There is very little surviving evidence for shoe uppers, the more substantial bottom parts having survived better, as is common in waterlogged assemblages.. The leather having lost much of its structure, identification of the leather was extremely difficult and somewhat tentative. Some of the analysis was carried out before full cleaning and conservation were undertaken, due to the possibility of its further deterioration. Shoes with hobnails were x-rayed prior to any analysis or conservation. They did not reveal any additional evidence of construction, but ascertained the degree of iron mineralisation in the nails.

Construction and styles

Where it is possible to determine, the shoes are of thonged and nailed construction. The thonging was used to hold the insole and middle sole together, to which the sole was attached by nailing. The classification of nailing patterns, as used by Quita Mould at Birdoswald (Mould 1997, 335, fig.243) has been adopted here, as most appropriate for reference for the Elms Farm material.

There is one instance of an 'A' type decorative nailing pattern (SF6630 (16)) in context 9895 (D); 4 of 'B', a lightly-nailed variety, all from context 16083 (H); there are no instances of the heavily-nailed 'C' type.

In only one instance (SF5479 (1)) is the evidence present for identification of a *calceus*, a closed shoe, although it is assumed that this style would have predominated. By analogy, it is suggested that SF6630 (16) may be a closed, latchet front fastening boot. 2 sandals are present (SF5661 (7) and SF7026 (13), of late 2nd to early 3rd century types. A child's shoe (SF7023 (11)) is the only shoe which may be totally stitched.

Toe shapes have been difficult to determine: 2 shoes are certainly pointed, a man's or adolescent's (SF5480 (2))and a man's shoe (SF6630 (16)). There are 2 rounded toes: SF5483 (5) and SF7023 (11), the child's shoe.

Heel stiffeners are present in 2 groups, 2 in context 16083 (H) and one in context 9895 (D) .

Interpretation, further evidence and significance

Only one shoe can certainly be identified as male(SF6630 (16)), although SF5480 (2) may be a man's or adolescent's. No women's shoes can be positively identified, although Rhodes (Rhodes 1980, 117) associates the sandals from Billingsgate as being worn by women and children, on the grounds of sizes. The only certain child's shoe is SF7023 (11).

There is no convincing evidence for repairs and the condition of the leather makes it difficult to determine the state of wear.

Evidence of leatherworking comes from 5 groups, 4 in context 16083 (H) and one in context 9879 (D), consisting of cutting waste and an unusable fragment from the edge of a hide.

There are possible dyes present in 2 pieces: SF5666 (9) exuded a brown colouring, unlike other pieces from that context, or any other.SF7027 (17) produced a madder-like pink.

The feasibility of analysis for tannins, waxes, and fats was considered. There can be difficulties in distinguishing between dyes and tannins colourwise (Jim Spriggs, *pers. comm.*). No tests were carried out to identify the presence of waxes and fats.

Other classes of artefact from the site may indicate other evidence for leatherworking: 3 possible iron and 2 bone awls, 11 iron chisel/punch type tools, 3 copper alloy and 7 bone knife/tool handles, 19 iron knives and 5 iron punches, some of which may have leather associations.

Few iron hobnails were identified from the bulk and small find assemblages, but many were extracted from soil samples. The excavators appreciated the difficulty of distinguishing partially mineralised hob nails from small lumps of iron pan which occurred in many contexts.

The small size of the leather assemblage should not be taken as any indication of how much leather was prepared, made into artefacts, worn/used and discarded during occupation of the site. Only items deposited in suitable waterlogged environments would have stood any chance of survival. Those that have survived are mostly very degraded and have only survived for the period of the late 2nd to the 3rd centuries.

Area H. Context 16083

1 5479

a) Section of the bottom parts and fragment of upper of a man's thonged and nailed closed shoe, presumably a *calceus*, comprising an insole and middle sole thonged, and the sole attached by hobnails, securing the 3 layers. The middle sole and upper are in one piece. From what remains of the upper, it appears to be undecorated. The toe shape is tapered and squared off at the tip. X-rays clearly show the remaining nails in position, in quite a good state of preservation.

b) Section of shoe bottom parts, difficult to match to (a) above and apparently from a broader shoe; the insole of a number of components, thonged together and nailed with the sole and middle sole, which may also have been extended to form the upper. The toe is tapered, but the end has been cut off at an angle (not the original shape as would appear to be the case with (a)).

These shoe parts are too fragmentary to determine the nailing pattern, but both probably fall within the 'B' group of nailing pattern classification, as defined by Rhodes (Rhodes 1980, 105-7) and Mould (Mould 1997, 334-5).

Date: probably later part of 2nd, or possibly early 3rd century.

2. 5480

Two of the bottom units of a man's or adolescent's left foot pointed toe shoe, with a pronounced curve at the outside joint, of thonged and nailed construction. A narrow middle sole was thonged to the insole along the medial axis. The sole (absent) was attached to the insole by marginal hobnails (now mostly missing, at an average spacing of 25mm. There are groups of 3 nails at the toe tip and heel seat respectively and occasional other nails, probably forming a nailing pattern of group 'B' type. Not all the nails penetrated the insole margin. X-rays indicate that the extant hobnails still contain some unmineralised iron. Insole length: 260mm x 85 mm at the tread x 60mm at the waist: approximate modern size 6. A fragment of upper survives at the toe tip. Presumably cattle hide.

Date: late 2nd or early third century (on analogy with Vindolanda) (van Driel-Murray 1993, 31-47).

3 5481

a) Partial bottom units of a thonged and nailed shoe, from the heel seat and waist areas, comprising an insole, with a narrow middle sole, made up with irregularly-shaped components, attached by a thong along the medial axis. The sole was attached by large peripheral hobnails (only one survives) and along the medial axis; 4 nails form a diamond pattern in the heel seat (probably a 'B' type nailing pattern). The sole would have been over 10mm in substance (disregarding the hobnails).

b) Fragments of bottom units from a thonged and nailed shoe, probably part of the forepart. It may belong with (a), as it appears to be of similar construction and substance. Probably cattle hide.

c) Indeterminate fragile fragments, probably belonging with (a) and/or (b).

Date: heel seat nailing pattern and construction similar to 2 (5480) above; therefore, probably late 2nd or 3rd century.

4 5482

Heel seat of insole and middle sole and heel stiffener, of a shoe of thonged and nailed construction. The insole and narrower middle sole were thonged together along the medial axis. Where discernible, the hobnails just penetrated the upper side of the insole. The peaked heel stiffener margin fitted up to the middle sole margin and nails were placed around the sole margin and in the heel seat. The top edge of the stiffener was not stitched in. The quarters were presumably placed between the stiffener and the sole. Nailing pattern and size of shoe indeterminate. The substance of the leather suggests cattle hide.

Date: indeterminate, but consistent with other shoes in this context, i.e. late 2nd to early/mid 3rd century.

5 5483

a) Possible fragment of shoe upper. Creasing suggests the toe of a rounded toe shoe, but it is thick for an upper fragment. There are stitch or nail holes around the margin. Probably calf leather.

b) Possible waste piece from cutting out, with all cut edges, or, an object cut up for re-use; delaminating; no features.

c) Other fragments are also possible cutting waste.

Date: indeterminate.

6. 5659

a) Fragments of the sole and middle sole of a nailed shoe. There is a single row of nails (none surviving) around the wide sole lasting margin. There is no evidence of thonging from the surviving parts.

b) Small fragments of the bottom parts of a nailed shoe, possibly belonging to (a). One piece has a group of 4 small nail holes arranged in a dice 4. Nails also occur away from the margins. A fragment of insole and sole are thonged together.

c) Probable heel stiffener, with a rounded peak, with vestiges of a damaged lasting margin. The leather is probably cattle hide.

Date: compatible with other material from this context: late 2nd to early/mid 3rd century.

7. 5661

a) Fragment of 3 bottom unit layers, insole, middle sole and sole of a sandal. Pairs of thonging slits, 6mm. apart, run parallel to and 10mm. from the edge. More thonging slits, about 35mm. in from the margin, run along the longitudinal axis, not appearing on the upper side of the insole., but tunnel-stitched to it. The fragment is now 8mm. in substance. There is no evidence of nailing. More of this sandal occurs as **13 (SF7026)**. Leather identification is indeterminate.

Date: late 2nd to early 3rd century.

b) Delaminated fragment of a sole forepart of an oval or pointed toe shoe, with peripheral nail holes and, apparently, 2 further longitudinal rows (probable 'B' type nailing pattern).

Date: probably late 2nd or 3rd century.

c) Delaminated fragment of the sole of a nailed shoe.

d) Tiny fragment, with 3 very fine marginal stitch holes, perhaps from a shoe upper or a non-shoe artefact.

e) Fragments of probable leatherworking waste, including a possible unusable piece from the edge of a hide; some may be calf or kid.

Dates for (c), (d) and (e): indeterminate.

8. 5662

Offcut or trimming from cutting out; Possibly cattle.

Date: indeterminate.

9. 5666

Fragmented and delaminating piece of leather, with at least 2 sides cut straight and one cut on the curve: either a waste piece from cutting out, or part of an indeterminate artefact. There are no stitch holes or evidence of seams, or that it has been part of any construction; probably calf leather. A possible brown or red/brown dye exuded from the wet leather before conservation.

Date: indeterminate.

10.6831

Fragment of ?insole and a little adhering middle sole, thonged together; also fragments of leather with a nail hole and a piece of ?upper. Other fragments may be leatherworking waste. Possibly sheep leather.

Date: indeterminate, but compatible with other material from this context.

11.7023

Bottom units of a child's shoe. The toe is missing, but was probably rounded. It was made more or less as a 'straight'; estimated length: 168mm.x 55mm. at the tread x mm. at the waist: modern child's size 8. the shoe is apparently stitched, but some intermittent irregularly placed small holes may be nail holes but this is difficult to determine in the fragile leather. Associated is a probable piece of lasting margin at the ear of the heel seat and a fragment of upper. Possibly made of calf leather.

Date: compatible with other material from this context.

12.7024

Waist portion and part of forepart and heel seat of an adult shoe, the insole and sole thonged together. There is one extant nail. Length and toe shape are indeterminate; approximate measurement at the waist: 43mm.; substance: 12mm. Possibly goatskin leather.

Date: compatible with other material from this context.

13.7026

Delaminated fragments of sandal sole, including some from sandal **7(a) (SF5661)**. The largest piece has pairs of thonging holes, 5 - 7mm. wide and 5mm. apart, set 7 - 11mm. from the margin and comes from a different sandal. Some calf leather possibly present.

Date: late 2nd to early 3rd century.

14.7029

16 fragments of leather, representing part of a nailed shoe. Part of the sole forepart survives, with 5 extant hobnails, x-rays indicating partial mineralisation. Peripheral nails occur at 10-15mm. spacing and other nails may form 2 further rows, more widely spaced, with more of a concentration near the waist, probably a 'B' type of nailing. The main piece and **7(b) (SF5661)** may be delaminates of the same forepart. Probably cattle hide.

Date: late 2nd to early/middle 3rd century.

Area D. Context 9879

15.

6616

Delaminated offcut, of indeterminate leather.

Date: indeterminate.

Area D. Context 9895

16.6630

Bottom units: sole, middle sole and insole, heel stiffener and fragments of upper of a large man's left foot pointed toe nailed shoe, a *calceus*. Length: 290mm.x 95mm. across the tread x 64mm. at the waist (insole measurements): modern size: adult 9 - 10.

The insole and middle sole were thonged together by a single thong along the medial axis, which then forks into two across the widest part of the forepart. The toe has quite a pronounced point. The insole shows wear creases and there is also wear at the inside toe and outside heel seat, on both sole and insole.

The middle sole is fragmentary and there is a wide lasting margin.

The nailing pattern is very distinctive, of A1 type, as illustrated in Mould 1997,335. There is a single row of peripheral nails, at approximately 8mm. spacing. The forepart decorative element is a leaf-tendrill pattern, with the curving stem finishing at the waist. A small grouping below the waist leads to a subcircular arrangement of nails around a diamond pattern of 4 nails in the heel seat. 8 nails, or parts of, survive, of an estimated 72 around the margin and a total of 137. X-rays of the shoe indicate that the few remaining nails are partially mineralised.

There are a number of parallels for this A1 nailing design. The closest parallel comes from Castle Street, Carlisle (Padley 1991, fig. 210 no. 887), dated to AD 165-200, on pottery evidence. At least one very similar example comes from Vindolanda, period VI, A.D. 160 - c.180 (Metcalf and Longmore 1973, 38, fig.1 & van Driel-Murray 1993, 36), when nailed soles tended to be natural to pointed, some very pointed, often with the leaf tendrill decoration. They became more common in the 3rd/4th century inner ditch fill, from A.D. 213. Seven examples occurred at Birdoswald, e.g. 2021, with an oval pointed toe (Mould 1997, 328, fig. 238, no.1), given a 3rd to 4th century date. At St. Magnus Quay, London (MacConnoran 1986, 218), the leaf/tendrill design occurs only in adults' shoes, dated early - mid 3rd century. Other instances are New Fresh Wharf (MacConnoran 1986, 218); and Queen Street, London (MacConnoran 1982, fig. 37, 116), where there is an instance of an inverted leaf tendrill at the tread, with a slightly tapered rounded toe, attributed to the "4th century or possibly earlier"; Brayford Wharf East, Lincoln (A2); Old Penrith, Cumbria (Thornton 1991, fig. 114, no. 923); The Saalburg (Busch 1965, Taf.15, nos. 223 & 224); Zugmantel (Busch 1965, *op. cit.*, Taf 34, nos. 752 & 754).

At Birdoswald, the leaf/tendrill pattern was found associated with a distinctive latchet fastening boot (e.g. Mould 1997, 2185; fig.23a, no. 12; fig. 244:2.5), of a type dating to the 3rd century. Upper remains at

Queen Street (MacConnoran 1982, no.116) suggest a closed type of ankle boot, laced up the front. This is also noted at Vindolanda (van Driel-Murray 2001,188, no. 23, fig.1 and pp.190-1), where the type begins c. A.D. 180 and peaks from c. A.D. 230.

Continental assemblages, too, have produced this association (van Driel-Murray 1987, 38), although latchet boots do occur with other patterns of nailing. The universality of styles underlines the fluidity of people and ideas in the Roman Empire.

The shoe is made of cattle hide.

Date: late 2nd - early/mid 3rd century.

Area J. Context 18236

17.7027

Small fragment of leather, with no definite edges, possibly delaminated.

The conservator noted madder-like pink in the storage bag, prior to conservation. It is a possibility that this is due to metal salts in the waterlogged environment. There was also lead-casting activity associated with the well, which may be relevant. The leather may be from cattle or ?sheep.

Date: indeterminate.

Area L. Context 20034

18. 8063

Indeterminate fragment of featureless and delaminating leather, all edges torn.

Date: indeterminate.

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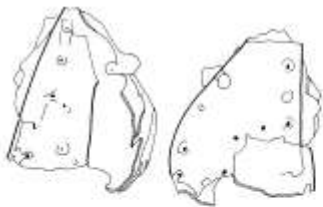
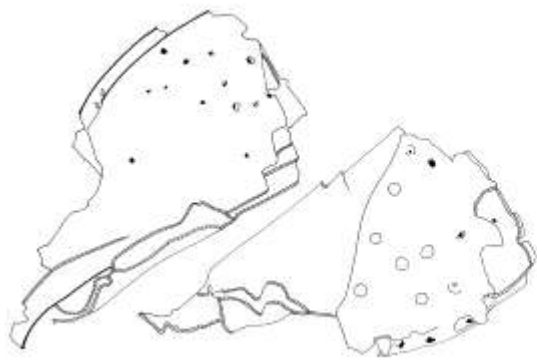
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/ Cut edge
 / Torn edge
 • Nail

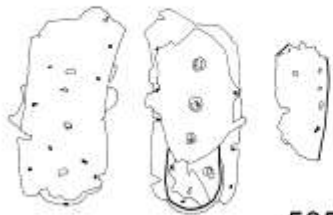
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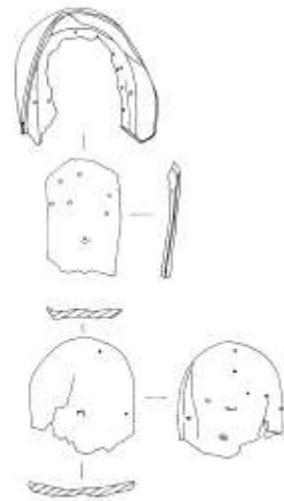
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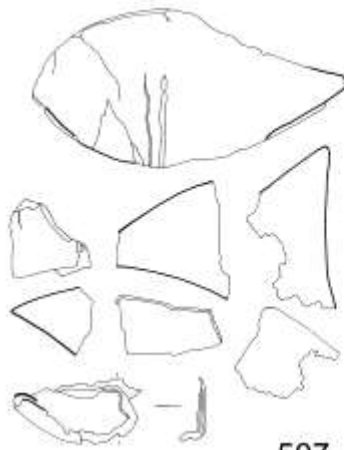
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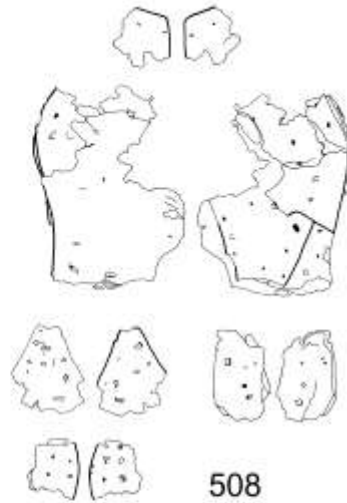
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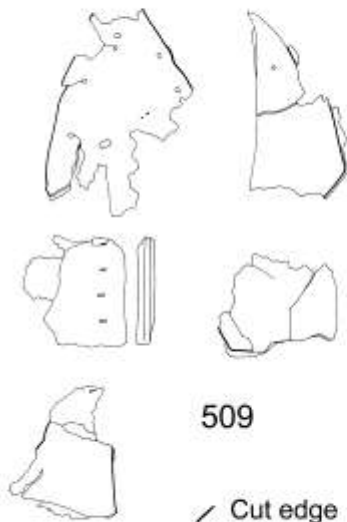
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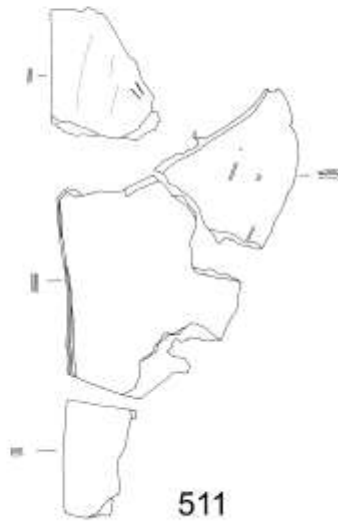


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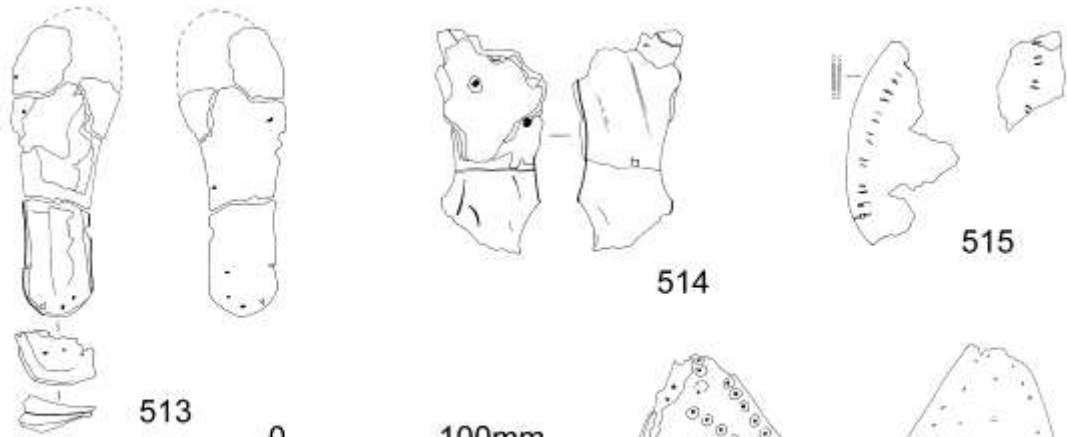
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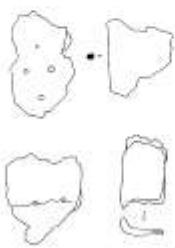
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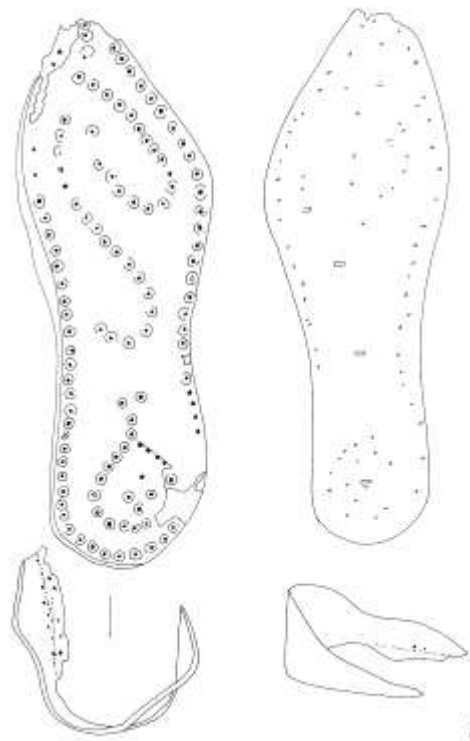
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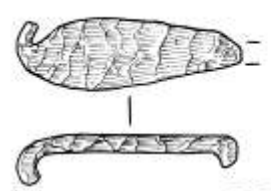
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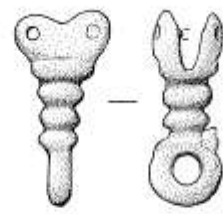


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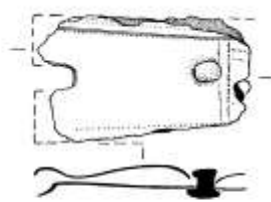


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