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Report 74/90

BUTTERMARKET, IPSWICH, SUFFOLK (1AS 3104): (1) CHARCOAL.

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Summary

Charred wood and timber from four late Saxon cellared buildings was examined. The main structural timber was oak, jointed with pegs, some of willow/poplar. Other structural woods included ash, elm, Sorbus-type, willow/poplar and conifer. Hazel was used for wattling. Other wooden objects include a barrel with oak staves, a turned vessel of willow, and areas of collapsed wickerwork/basketry. One of these was of split hazel roundwood with interwoven young Salix-stems; another of split hazel and oak roundwood with interwoven hazel stems.

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Introduction

During excavations at this site several early medieval cellared buildings were found. These structures had burnt down and much of their wood and timber was preserved in a charred state. Not only structural timbers but also pegs, wattling and basketry as well as the remains of a cask/barrel and a turned wooden bowl were found. These charred wooden items are described and discussed in this report. Other charred organic materials, including a group of buns or small loaves and some large deposits of cereals will form the subjects of subsequent reports.

Methods

Samples were collected from the main charred wooden items distinguished during excavation for identification and description. An attempt was made to lift the larger pieces of charcoal intact, but this was frequently unsuccessful. During storage and transportation these pieces tended to fragment by splitting along the rays (particularly the oak charcoal) or along the annual rings (in the case of ash). Most samples received for examination consisted only of collections of fragments. For this reason, and also because the outer surfaces of many items had partly burnt away, little could be learnt about the original pieces of wood other than their species and (from characteristics of ring curvature) whether they were of timber (from trunks and large branches), or smaller roundwood. However, much of the small roundwood charcoal, some of the larger roundwood and some worked wooden items including boards, staves, pegs and a turned wooden bowl were still at least partly intact. Descriptions of these are given, where possible, below.

Areas of collapsed charred wattle/basketry presented particular difficulties. Detailed recording and sampling in the field, given the exigencies of rescue excavation, proved impractical. Instead two sample areas were collected for laboratory examination: 2252 (Building 2022) and 4093 (Building 4081). After cleaning their upper surfaces latex solution was poured over these areas and the latex was then reinforced with a plaster backing. The wattling/ basketry could then be lifted for laboratory examination. In the laboratory the lower surfaces were cleaned and planned at a 1:1 scale. Charcoal samples were taken from the main longitudinal and transverse elements. The remaining charcoal and soil was then removed from the latex, which then could be used as a mould to produce plaster casts which, when suitable painted, made excellent items for museum display.

Details of the larger charcoal samples are given in Table 1 and small charcoal from the wattling/basketry is listed in Tables 2 and 3.

Structural timber and wood

1) *Quercus* sp. (oak)

The majority of charcoal samples collected from these buildings were of oak. In each of the four buildings oak timber was used for the main vertical posts: in building 29, for example, timber 0050 was made from a roughly quartered trunk more than 240mm in diameter. The wall-boards were also of oak, as was the staircase structure in building 2140. The samples from most timbers showed no evidence for jointing, though timber 2432 in the fill of building 2022 had a circular peg-hole with peg in position.

Within the cellar fills many of the wood samples were from oak boards/planks. It seems probable that these represent either collapsed floor-boards or wall-boards. Most of these fragments came from radially-split boards, 16-28mm thick, but usually under 22mm. In building 2140 there were some thicker

tangential/near-radial boards, 24-32mm thick (nos 2616 and 2652). There were also some rather thin radial boards in building 4081 (eg. nos 4084, 4155, 4157, 4161), 9-16mm thick, associated with large ash (Fraxinus sp.) roundwood.

2) Fraxinus sp. (ash)

Ash, the second most frequent charcoal, was nevertheless uncommon: it was not identified from building 29 and in buildings 2022 and 2140 only a few samples contained small fragments of ash. Notable samples were some fragments of radial ash boards, 8-10mm thick (2600 : Building 2022) and fragments of a peg or dowel (or possible part of a tool handle) of rounded quadrilateral cross-section, 12 x 15mm made from large wood (2745 : Building 2140).

In building 4081, however, ash charcoal was more frequent. The samples from this structure included some ash timber but most pieces were from untrimmed large roundwood stems. Most of these pieces lay horizontally, but two (4288, 4294) were apparently in situ, placed vertically against the cellar wall. As noted above, this large ash roundwood was associated with some rather thin oak boards. Interpretation of collapsed structures is inevitably tentative, but it is possible that some sort of fixture or fitting is represented, perhaps shelving.

3. Other woods

Corylus (hazel) was represented exclusively by small roundwood stems, from buildings 2022 (2230) and 2140 (2366, 2453, 2604, 2745). It is probable that these roundwood stems all represent remains of wattling from external walls or internal partitions. The stem fragments from 2604 fall into two distinct size groups : 21-25mm in diameter and 6-19mm, perhaps representing sails and rods respectively. Several stems from this sample show oblique transverse cuts, and one had been centrally split.

From building 2140 there were three samples of conifer charcoal (2473, 2474, 2659) probably pine (Pinus sp.). The sample from 2474 comprised fragments probably of radial boards/planks, only 10-11mm thick.

Salix/Populus (willow/poplar) charcoal also came from three contexts: a 21mm diameter peg found in situ within a peg-hole drilled in the oak timber 2432, from building 2022; timber fragments from 2939, building 2140; and a second peg, 28 x 24mm, from 4279 in building 4081.

Elm (Ulmus sp.) was represented by some tangential board or stave fragments 17-19mm thick from 2224, building 2022; and ?Sorbus-type (?rowan) by timber fragments from 0376, building 29.

Other wooden objects

Besides charcoal thought to represent structural wood and timber, charred remains of a number of other wooden objects were found within the cellar fills.

1) 2111 (Building 2022)

This comprised a group of staves from a barrel or other stave-constructed container. The staves were all of oak (Quercus sp.) radially split or cut from large timber. They were 9-20mm thick with a maximum surviving width of 55mm. Stave 4 had one edge tapered and rounded, and stave 7 showed an oblique diagonal transverse cut. Stave 3 had a v-shaped groove cut at right angles across its width, presumably for securing the base of the container.

2) 2461 (Building 2022)

This sample contained charred fragments of a turned wooden vessel with a simple rim and a footring. It was of willow (Salix sp).

3) 2252 (Building 2022)

A block sample of wickerwork/basketry, apparently typical of the charred wickerwork from this area of Building 2022 was collected for detailed recording and identification. Other areas of wickerwork (2249, 2250, 2251, 2545) seemed similar in construction but were not closely examined. A plan of the sample, from 2252 is given in Fig. 1 and identifications of its 'uprights' are given in Table 2.

Table 2 : Charcoals from 2252 (larger stems only)

The numbers refer to locations of samples as shown in Fig. 1

39	Corylus sp.	Split roundwood	8-10mm diam.
40	Corylus sp.	"	c. 10mm diam.
41	Corylus/Alnus sp.	"	7-8mm diam.
42	Corylus sp.	"	c. 9mm diam.
43	Corylus sp.	"	c. 12mm diam.
44	Corylus sp.	"	c. 12mm diam.
45	Corylus sp.	"	c. 13mm diam.
46	Corylus sp.	"	c. 10mm diam.

The transverse rods woven around the 'uprights' were all young stems, 2-5mm in diameter, apparently all showing just one year's growth and with the bark still in position. Specific identification proved difficult: many of these stems were flattened and had largely lost the pith. Most consisted of thin, fragile, hollow cylinders which tended to splinter rather than fracturing cleanly. However, they all appeared to be of one species, a diffuse porous wood with fairly uniformly-distributed mainly solitary pores and narrow rays. Two typical stems (though unusually well-preserved ones) were selected for s.e.m. examination : 31 and 38. Scanning electron micrographs of transverse, radial longitudinal and tangential longitudinal sections of 31 are shown in Plate 1. 38 showed identical features.

As can be seen from these micrographs the rays are uniseriate and heterogeneous and there are large ray-vessel pits, all characteristic features of the genus Salix. According to Schweingruber (1982, 154) tree and shrub forms of Salix cannot be specifically identified from wood anatomy. Traditionally, however, the main raw material for most basketry consisted of stems of Salix purpurea, S.viminalis and their hybrids grown in osier beds. It is highly likely that the basketry was made from osiers.

In summary this basketry, 2252, was made from split hazel roundwood stems, c. 7-13mm in diameter, with interwoven whole unpeeled willow/osier stems, 2-5mm in diameter. Because the basketry, when found, was in a crushed and collapsed state it is difficult to reconstruct its original form and function with complete confidence. However, the hazel rods and Salix stems are interwoven in a roughly rectilinear fashion, implying a mere or less rectangular form for the original basketry container. Carbonized cereals were directly associated with this basketry, which strongly suggests that some kind of grain container is represented.

4) 4093 (Building 4081)

This appears to consist of a crushed and collapsed basket, a block sample of which was taken for laboratory examination. A plan of this block sample is given in Fig. 2 and identifications of charcoal samples, numbered with reference to Fig. 2 are listed in Table 3. The basket (if this interpretation is correct) appears to have been flattened during the collapse of the building

so that its 'uprights' perhaps originally parallel, were found splayed out radially. Nine 'uprights' were sampled (nos 14-22): they consisted of split (roughly halved) roundwood rods of hazel (Corylus sp.) and oak (Quercus sp.) with one oak 'slat', 15 x 6mm in diameter, split from larger wood. The thirteen transversely-woven rods sampled consisted of whole roundwood stems of hazel or (in two cases) hazel/alder, 3-7mm in diameter. No material clearly representing the contents of this 'basket' was found: a few hazel-nut shell fragments were associated, but this association may just be fortuitous.

Table 3 : Charcoals from 4093 (Sample 514)

The numbers refer to locations of samples as shown in Fig. 2

1.	Corylus sp.	Roundwood	6-7mm diam.
2.	Corylus sp.	Roundwood	7mm diam.
3.	Corylus sp.	Roundwood	4mm diam.
4.	Corylus sp.	Roundwood	7mm diam.
5.	Corylus sp.	Roundwood	7mm diam.
6.	Corylus sp.	Roundwood (frags)	
7.	Corylus/Alnus sp.	Roundwood	3mm diam.
8.	Corylus sp.	Roundwood	4mm diam.
9.	Corylus sp.	Roundwood	5mm diam.
10.	Corylus sp.	Roundwood	4mm diam.
11.	Corylus/Alnus sp.	Roundwood	4-5mm diam.
12.	Corylus sp.	Roundwood	6-7mm diam.
13.	Corylus sp.	Roundwood	4-5mm diam.
14.	Quercus sp.	'Slat' split from large wood	15 x 6mm
15.	Corylus sp.	Split roundwood	14 x 5mm
16.	Quercus sp.	Split roundwood	13 x 3mm
17.	Corylus sp.	Split roundwood	13 x 5mm
18.	Corylus sp.	Split roundwood	17 x 6mm
19.	Corylus sp.	Split roundwood	12 x 4mm
20.	Quercus sp.	Split roundwood fragments	
21.	Corylus/Alnus sp.	Split roundwood fragments	
22.	Quercus sp.	Split roundwood fragments	

The pieces of split roundwood (15-22) typically have lenticular cross-sections and the dimensions given indicate their size. Original stem diameters are difficult to estimate, but were not more than about 30mm. Some pieces are extensively bored by insects.

Fig. 1 : Plan of basketry/wickerwork sample area 2252

Fig. 2 : Plan of basketry sample area 4093

Plate 1 : Stem 31 from 2252, seen in transverse, radial longitudinal and tangential longitudinal section

Reference

Schweingruber, F.H. (1982) Microscopic wood anatomy. 2nd edn, F. Fluck-Wirth : Teufen

Table 1 : Buttermarket, Ipswich (1AS 3104)

Charcoals from early medieval cellared buildings

Abbreviations : srw - small roundwood (under 30mm diam.)
lrw - large roundwood (30mm + diam.)
t - 'timber' (trunk or large branch-wood)

Building 29

.0050 (1)	Quercus sp.	Roughly quartered trunk, c.120mm + radius
.0336 (4)	"	t
.0340 (5)	"	t
.0343 (6)	"	t
.0344 (7)	"	t
.0345 (8)	"	t
.0346 (9)	"	t
.0347 (10)	"	t
0376 (11)	?Sorbus-type	t

Building 2022

.2094 (55)	Quercus sp.	t
.2095 (403)	"	small frags
.2097 (61)	"	t
.2101 (54)	"	t
.2108 (56)	"	t
.2111 (404i)	"	board/stave frags, radial, 15-18mm thick
(404ii)	"	board/stave frags, radial and near-radial
(404iii)	"	board/stave frags, near-radial, 14mm thick. Transverse v-sectioned cut ? for securing base of barrel
(404iv)	"	board/stave frags, radial. Up to 9mm thick. Edge tapered and rounded
(404v)	"	t small frags
(404vi)	"	board/stave frags, radial. Up to 20mm thick. Oblique diagonal transverse cut on one fragment
(404vii)	"	board/stave frags, radial. Up to 20mm thick
2224 (405)	"	board/stave frags, radial. 15-22mm thick
	Ulmus sp.	board/stave frags, tangential, 17-19mm thick
.2225 (406)	Quercus sp.	? board/stave frags
	Fraxinus sp.	board/stave frags, radial. 10mm thick
.2226 (407)	Quercus sp.	? board frags
.2228 (408)	"	t
.2229 (106)	"	board frags, radial. Up to 22mm thick
2230 (107)	Corylus sp.	srw frags
.2232 (131)	Quercus sp.	very large timber, fragment, forked at one end
2252 (122)	-	wickerwork (see below)
.2339 (409)	Quercus sp.	t
.2342 (83)	"	board/stave frags, tangential. Intact cross-section 28 x 9mm
.2343 (84)	"	t
.2344 (85)	"	t
.2345 (86)	"	t
	Fraxinus sp.	t
.2346 (87)	Quercus sp.	t
.2347 (88)	"	t
2348 (89)	Indet	t

.2352 (132)		Quercus sp.	t
.2353 (108)		"	t
.2354 (410)		"	t
.2357 (110)		"	t
.2375 (90)		"	t
2376 (124)		-	? fibres
.2390 (411)		Quercus sp.	t
.2391 (111)	?	"	small frags
.2392 (112)		"	small frags
.2398 (113)		"	t
2422 (412)		Indet	t
.2426 (115)		Quercus sp.	t
.2432 (413)	i	"	large squared timber with circular peg-hole
	(413)ii	Salix/Populus sp.	peg, in position. c.21mm diam.
.2433 (414)		Quercus sp.	t
.2434 (415)		Quercus sp.	t
.2435 (416)		"	t
.2436 (417)		"	t
.2437 (418)		"	t
.2438 (419)		"	t
.2446 (420)		"	t
.2447 (421)		"	t
.2450 (422)		"	t
		Fraxinus sp.	t
.2451 (423)		Quercus sp.	t
2461 (424)		Salix sp.	turned wooden bowl/cup
.2477 (425)		Quercus sp.	t
.2483 (426)		"	t ? untrimmed, with side-branch
.2494 (427)		"	t
.2495 (428)		"	t
.2496 (429)		"	t
.2497 (430)		"	squared timber, 650 x 850mm, trimmed from whole trunk
.2539 (431)		"	t
.2540 (432)		"	t
2545 (123)		-	wicker (see below)
.2576 (433)		Quercus sp.	t
.2577 (434)		"	t
.2600 (435)		Fraxinus sp.	board fragments, radial, 8-10mm thick
.2601 (436)		Quercus sp.	t

Building 2140

.2237 (312)		Quercus sp.	t
.2238 (155)		"	t
.2239 (313)		"	t + lrw
.2240 (314)		"	t
.2241 (315)		"	t
.2242 (316)		"	t
.2322 (317)		"	t
2366 (125)		Corylus sp.	srw 10-15mm diam
2366 (318)		Quercus sp.	t and board frag, radial, 16mm thick
		Corylus sp.	srw 8-22mm diam
2366 (239)		Quercus sp.	t
		Fraxinus sp.	lrw
.2370 (79)		Quercus sp.	t
.2371 (80)		"	t
.2372 (81)		"	t
.2373 (82)		"	t
2389 (145)		"	t
.2399 (93)		"	t squared

.2400 (94)	Quercus sp.	t
2401 (95)	"	t
.2402 (96)	"	t
.2403 (146)	"	t
.2404 (97)	"	t
.2405 (98)	"	t squared, 85 x 40mm
.2412 (99)	"	? board fragments
2413 (100)	"	board fragments radial, 20mm thick
.2414 (101)	"	t
.2415 (102)	"	t squared
.2416 (103)	"	t
.2417 (104)	"	t
.2418 (114)	"	t
.2419 (105)	"	t squared
.2429 (154)	"	t
.2430 (319)	"	t
.2431 (151)	"	t
.2439 (320)	"	t? - small frags
.2440 (321)	"	t
.2444 (116)	"	t
.2445 (322)	"	t
.2453 (117)	Corylus sp. and Corylus/Alnus sp.	srw 12-15mm diam
2473 (179)	Conifer cf. Pinus sp.	t
2474 (180)	Conifer cf. Pinus sp.	? radial board frags, up to 10-11mm thick
.2486 (323)	Quercus sp.	t
.2487 (181)	"	t
.2488 (324)	"	t
.2489 (325)	"	t
2490 (326)	"	t
.2491 (327)	"	t
.2492 (328)	"	t
.2512 (149)	"	t
.2513 (329)	"	t
.2515 (150)	"	t
.2526 (330)	"	t
.2527 (331)	"	t
.2528 (332)	"	t
.2529 (153)	"	t
.2531 (148)	"	board fragments, radial, 18mm thick
.2541 (156)	"	t large, squared from roughly quartered trunk, c. 100 x 70mm
.2542 (147)	"	t
.2543 (152)	"	t
.2544 (333)	"	t
.2547 (334)	"	t squared
.2552 (335)	"	t
.2553 (336)	"	t
.2554 (337)	"	t
.2568 (240)	"	t
.2569 (241)	"	t
.2570 (242)	"	t
.2581 (182)	"	t
.2583 (183)	"	t
.2584 (184)	"	t
.2585 (185)	"	t
.2586 (186)	"	t
.2587 (187)	"	t
.2595 (188)	"	? board fragments
.2597 (189)	"	t

2604 (121)	Corylus and Corylus/Alnus sp.	srw 6-25mm diam
.2605 (130)	Quercus sp.	t
.2606 (127)	"	t
.2607 (129)	"	? board fragments
.2616 (190)	"	board fragments, tangential and near-radial 24-32mm thick
2617 (191)	"	t
.2618 (192)	"	t
.2619 (193)	"	t
.2620 (194)	"	t
.2621 (195)	"	? board fragments
.2622 (196)	"	t
.2639 (197)	"	t
.2646 (198)	"	t
.2647 (199)	"	? board fragments
.2648 (200)	"	? board fragments
.2649 (201)	"	? board fragments
.2650 (202)	"	t
.2652 (176)	"	board fragments, tangential/near-radial, 30mm thick
.2653 (203)	"	t
.2654 (177)	"	t
2655 (?)	"	t
	Fraxinus sp.	t - squared
.2656 (212)	Quercus sp.	t
.2658 (213)	"	t
2659 (214)	Conifer cf Pinus sp	t
2660 (215)	Fraxinus sp.	? lrw (small frags)
2661 (216)	Indet	t
.2662 (243)	Quercus sp.	t
.2663 (244)	"	t
.2699 (217)	"	board, near-radial, 22mm thick
.2702 (218)	"	t
.2703 (219)	"	t
.2704 (245)	"	t
.2718 (220)	"	t
.2719 (221)	"	t squared
.2733 (222)	"	t
.2734 (223)	"	board fragments, radial, 20mm thick
.2735 (224)	"	t
.2745 (248)	"	? board fragments
.2748 (225)	"	t
2751 (128)	"	t
2754 (226)	Fraxinus sp.	peg/dowel made from large wood. Rounded quadrilateral cross-section, 12 x 15mm
	Corylus sp and Corylus/Alnus sp.	srw 10-17mm diam
2810 (227)	Quercus sp.	t
.2811 (228)	"	Large timber fragments with transverse diagonal cuts across grain at 45° and less
2812 (229)	"	t
.2834 (231)	"	t
.2835 (230)	"	t
.2836 (232)	"	t
.2837 (223)	"	t
.2838 (246)	"	t
.2839 (247)	"	t
.2862 (234)	"	t
.2863 (235)	"	t

2864 (236)	Quercus sp.	t
.2890 (237)	"	t
.2891 (249)	"	t
.2892 (250)	"	t
.2893 (238)	"	t
.2894 (251)	"	t
.2895 (252)	"	t
.2897 (253)	"	? board fragment
.2898 (254)	"	t
.2899 (255)	"	t
.2914 (256)	"	t
.2915 (257)	"	t
.2916 (258)	"	t
.2917 (259)	"	t
.2918 (260)	"	t
.2919 (261)	"	t
.2920 (262)	"	t
.2921 (263)	"	t
2924 (264)	"	t
.2925 (265)	"	t
.2926 (266)	"	t
.2927 (267)	"	t
.2939 (268)	Salix/Populus sp	t
.2940 (276)	Quercus sp.	t
.2941 (273)	"	t
.2942 (274)	"	t
.2943 (275)	"	t
.2944 (269)	"	board fragment, radial but deformed. Up to 17mm thick. Surviving width 90mm
.2945 (270)	"	board fragment, radial Up to 21mm thick. Surviving width 85mm
.2948 (271)	"	t
.2965 (272)	"	board fragment, radial. 15mm thick
.2966 (277)	"	t
.2967 (278)	"	t
.2968 (279)	"	t
.2981 (280)	"	t
.2982 (281)	"	t
.2983 (282)	"	t
.2984 (283)	"	t
.2985 (284)	"	t
.2986 (285)	"	t
.2987 (286)	"	t
.2988 (287)	"	t
.3010 (288)	"	t
.3011 (289)	"	t
.3012 (290)	"	t
.3013 (291)	"	t
.3014 (292)	"	t
.3015 (293)	"	t
.3016 (294)	"	t
.3028 (295)	"	t
.3048 (371)	"	t
.3072 (372)	"	lrw
.3073 (373)	"	t
.3096 (297)	"	t
.3097 (298)	"	t
.3150 (299)	"	t
.3151 (300)	"	t
.3152 (301)	"	t
3153 (302)	"	t
.3154 (303)	"	t

.3155 (304)	Quercus sp.	t
.3156 (305)	"	t
.3157 (300)	"	t
.3158 (307)	"	t
.3159 (308)	"	t
3160 (309)	"	t
.3336 (310)	"	t
.3337 (311)	"	t
3704 (294)	"	t

Building 4081

0028 (?)	Fraxinus sp.	t
0527 (?)	Quercus sp.	? board fragment
	Fraxinus sp.	lrw
.2907 (493)	Quercus sp.	t
.4083 (437)	"	t
.4084 (438)	"	board fragments, radial 13-15mm thick
.4085 (439)	"	t
.4086 (440)	Fraxinus sp.	t
.4087 (441)	"	t
.4088 (442)	"	lrw
.4089 (443)	"	lrw, 60mm + diam
.4090 (444)	"	lrw
.4091 (445)	"	lrw
.4092 (446)	"	lrw
4093 (514)	"	basketry (see Table 3)
.4094 (448	Quercus sp.	t
.4154 (449)	"	t
.4155 (450)	"	board fragments, radial. Max. 9mm thick
.4156 (451)	Fraxinus sp.	t
4157 (452)	Quercus sp.	board frags, radial, up to 16mm thick
.4158 (453)	"	?board frags
.4159 (454)	Fraxinus sp.	lrw, 140mm + diam
.4160 (455)	"	lrw
	Quercus sp.	t
.4161 (456)	"	board fragments, radial, up to 16mm thick
.4162 (457)	Fraxinus sp.	lrw, 60mm + diam
.4163 (458)	Quercus sp.	t
.4178 (459)	Fraxinus sp.	t
.4179 (460)	"	lrw, 70mm + diam
.4180 (461)	"	lrw
.4181 (462)	"	lrw
.4187 (463)	"	? (small frag)
.4188 (464)	"	lrw
.4189 (465)	"	t
.4201 (466)	Quercus sp.	t
.4202 (467)	"	t
.4204 (468)	Fraxinus sp.	?lrw (small frags)
4205 (469)	"	?lrw (small frags)
.4206 (470)	"	lrw 80+mm diam
	Indet.	?srw c.25mm extensive insect borings
.4227 (471)	Fraxinus sp.	lrw
.4228 (472)	Quercus sp.	t
.4229 (473)	"	t
.4230 (474)	"	t
.4232 (475)	"	t
4263 (476)	Indet.	t
.4264 (477)	Quercus sp.	t
4266 (478)	Fraxinus sp.	lrw
.4267 (479)	"	lrw

.4268	(480)	Quercus sp.	t
.4279	(481)	Fraxinus sp.	lrw
		Salix/Populus sp	peg 28 x 24mm
.4280	(482)	Quercus sp.	t
.4281	(483)	"	t
4285	(484)	"	t
.4286	(485)	"	t
.4287	(486)	"	t
.4288	(487)	Fraxinus sp.	lrw
.4290	(488)	Quercus sp.	t
.4291	(489)	"	t
.4292	(490)	"	t
.4293	(491)	"	t
.4294	(492)	Fraxinus sp.	lrw
4368	(494)	Quercus sp.	board fragments, near-radial, 28mm thick
4369	(495)	"	?board frags
4531	(496)	"	t

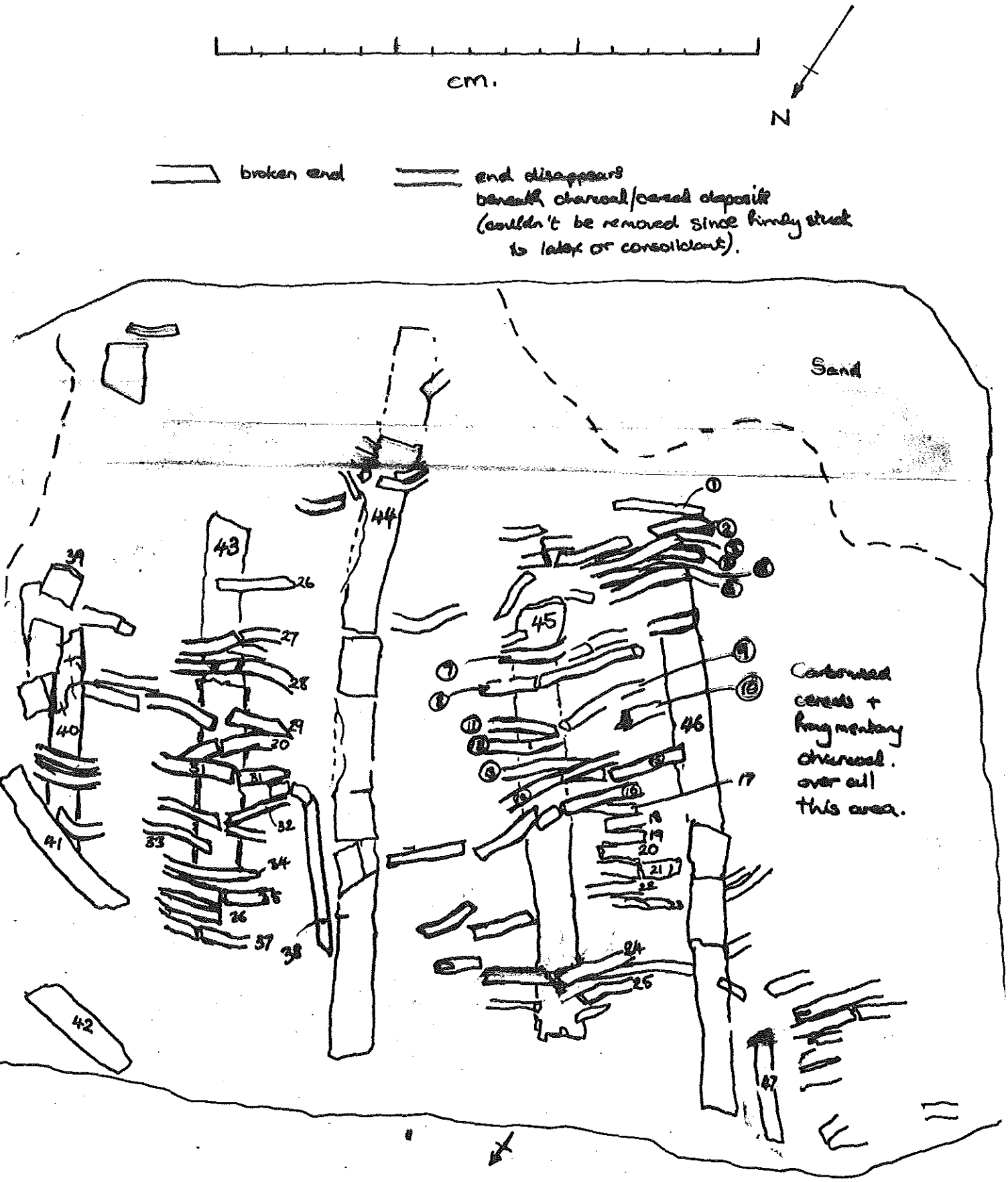


Fig. 1 : Plan of basketry/wickerwork sample area 2252

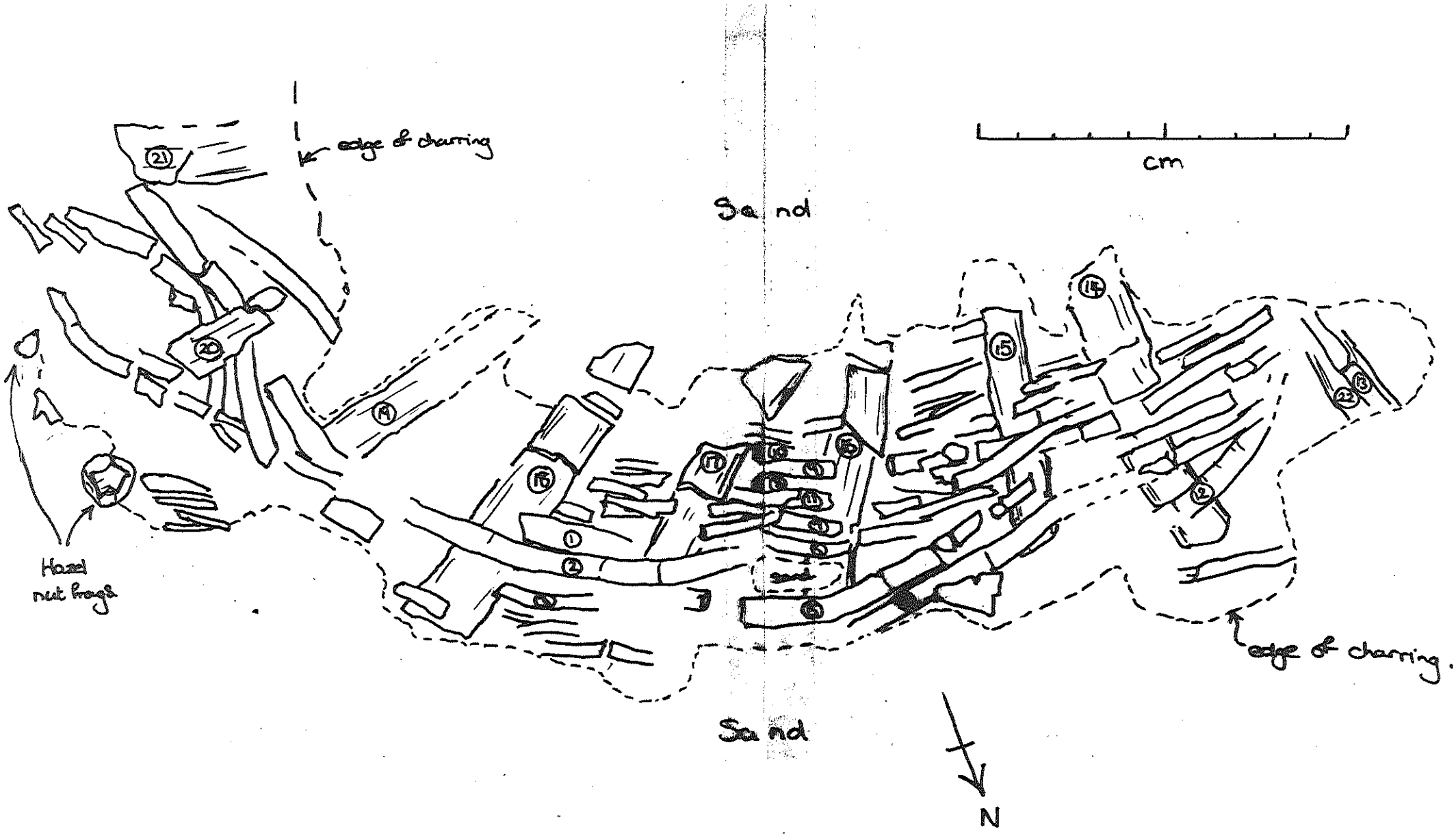
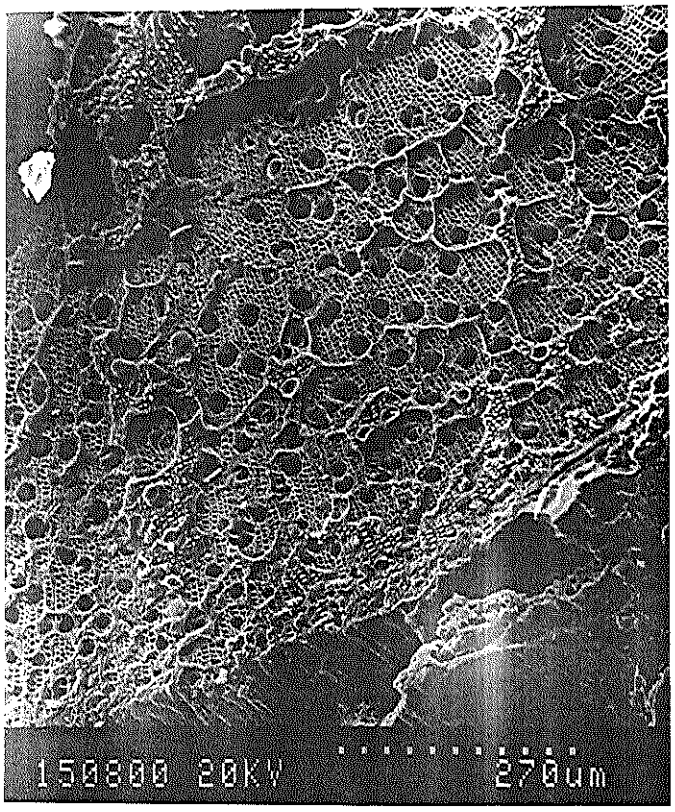


Fig. 2 : Plan of basketry sample area 4093



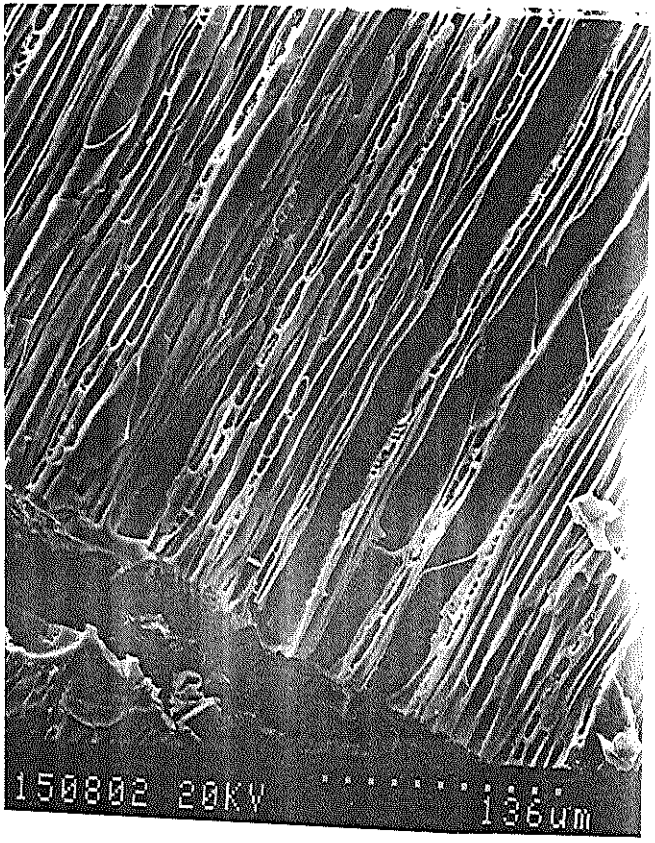


Plate 1 : Stem 31 from 2252, seen in transverse, radial longitudinal and tangential longitudinal section