

THE WOODEN FINDS FROM PERRY OAKS

by Steve Allen

Methodology

The author was asked to report on an assemblage of material recovered by Framework Archaeology from the excavation of the former Perry Oaks Sludge Works, Middlesex. The material in question had already been excavated and a subsequent assessment carried out by N Mitchell. This had included some sampling for species identification and some photography. In addition, the wood record sheets assigned to the elements of the assemblage were also made available. Some material had been discarded on site or before delivery to Oxford Archaeology (OA) stores. Unfortunately there was no definitive quantification available for the assemblage, in terms of what had been discarded, what retained and what work had been done prior to this writers involvement with the project. That any list was possible is due entirely to the efforts of the finds staff at OA who physically searched through each store and box to list what was actually present.

The artefacts from the assemblage had generally been cleaned and individually packed in cling film and/or polythene fastened with parcel tape, with support where necessary. Some items, such as the withy ties had been block lifted on site and were still in their soil blocks. Samples and several of the structural pieces such as the upright stakes had been wrapped or bagged on site, usually in self sealing polythene bags, but had not generally been cleaned. The overall condition of the wood was fair, some pieces being very well preserved, others, especially smaller pieces of roundwood, were highly degraded.

Following a preliminary visit to see the assemblage in Oxford, a period of five days was spent at Janus House in which a record was made of each retained object, or, in the case of samples, a list checked and confirmed. These records took the form of hand-written notes and annotated sketches of the artefacts. This additional recording was necessary to recover information about woodworking technology, condition and form which had not generally been included on the various wood record sheets used in the field and post-excavation recording.

Sampling for species identification was also carried out for those artefacts that were not to be sent to York for further study. All of the retained finds and samples were seen, except for one box later found in a freezer. Some items were not found, though recorded as being retained on the database. Those samples requiring species identification were then delivered by OA to the Wet Wood Laboratory of York Archaeological Trust.

Here a database was created using Microsoft Access to record information about each object and to allow the data to be sorted and interrogated after the completion of recording.

Species identification at York was carried out on an item by item basis. Each sample was examined in transverse, radial longitudinal and tangential longitudinal sections under a microscope; all species identifications follow Schweingruber (1982). All identifications carried out in this way are incorporated into the database using their scientific names. Common names on the database are those items which had been identified by field staff but which cannot be confirmed as no sample was taken.

The only major problems with the assemblage were firstly that most of the non artefactual pieces, species samples and such, needed to be washed before they could be examined, which took around three days in total. Secondly the freezing of one of the boxes of samples had irretrievably damaged some of the contents. Although it was still possible to identify most of the pieces concerned, a small number of the samples, possibly already degraded before freezing, had their cellular structure broken down by the freezing process. Finally, one of the features had had sample numbers assigned to groups of material, bags containing between eight and eleven sections of roundwood. As it was difficult to refit them, owing to abrasion within the packaging, it was not clear how many original individual pieces of wood were present.

Following examination, each piece was returned to its original packaging to await a decision on its future.

Species and Common Names. Most of the wood can only be identified to a particular genera. Although, for example, there are many different species of willow, their wood cannot be differentiated. The following list gives the common names of the scientific identifications used in this report and the database.

<i>Acer campestre</i> L.	Field Maple
<i>Alnus</i> spp.	Alder
<i>Castanea sativa</i> Gaertn.	Sweet Chestnut
<i>Corylus avellana</i> L.	Hazel
<i>Frangula alnus</i> Mill.	Alder Buckthorn
<i>Fraxinus excelsior</i> L.	Ash
<i>Pomoideae</i> spp.	includes Apple, Pear, Hawthorn, Quince.
<i>Populus</i> sp.	Aspen, White or Black Poplar
<i>Prunus</i> spp.	includes Cherry (<i>P. avium</i>), Blackthorn (<i>P. spinosa</i>)
<i>Quercus</i> spp.	Oak
<i>Salix</i> spp.	Willows
<i>Sambucus nigra</i> L.	Elder
<i>Ulmus</i> spp.	Elms

Summary of Assemblages (see database for detailed records).

Wood was recovered from a number of negative features, interpreted as waterholes. In all cases, the wood had survived through burial in waterlogged anoxic conditions, maintained from burial through to excavation. The following report is divided into sections by the features from which wood was recovered. Dating is based on the information provided by Framework Archaeology (Project Design: Update note 2, November 2000).

Bronze Age (Features SG103040, SG124100, OG125033, SG135071, SG141121, SG152018, SG156028)

SG103040. Waterhole with two phases of revetting, a single 'step' replaced by a stake and board structure. The horizontal (136215) of the primary phase was a single Oak log, with minimal modification. A single timber (136220) was recorded from the secondary phase. This was a piece of Oak cut from the top end of a small log or more probably from a piece of branch wood. Several side shoots had been cut away with an axe with one side branch left in place. The field records do not indicate whether this timber was a horizontal or vertical element in the revetment.

SG124100. Waterhole with descending ramp down to a wattle revetment (124190). The intact portion of the revetment which was identified appears to have consisted of five upright roundwood stakes (124191-124195) of which three were sampled. These were generally in poor condition and appeared to have had minimal modification beyond the cutting of a single surface to create a half round cross section tip. Two were *Quercus*, one *Alnus*. The roundwood woven around these uprights produced 39 samples, between 8 and 22 mm diameter of which there were 4 *Quercus*, 22 definite and 2 probable *Salix*, 6 *Fraxinus*, 3 *Prunus* sp. and 2 not examined.

Some loose wood was found in the fills of this feature. Six roundwood stake points from context 124101 (1 each of *Acer*, *Quercus*, *Salix* and *Ulmus*: 2 not sampled) and a small number of chippings may relate to a later phase of revetting but are most probably debris from a structure beyond the feature.

OG125033. Group of three intercutting pits. The earliest pit (SG125033) had a cylindrical wattle lining, replaced by a line of posts with no surviving horizontal elements. The wattle as excavated consisted of four upright stakes (159204-159207) all of *Salix* roundwood, 50-58 mm diameter with half round cross section points. 22 samples of the roundwood from this structure were lifted, between 4 and 21 mm diameter, of which there were 11 *Prunus*, 8 *Salix* and 3 not examined. Many of these 'rods' were very small diameter and would be characterised as twig rather than branch wood. The line of upright stakes (159208-159211, 159215) interpreted as the replacement for this structure were generally of larger diameter (52-90 mm), again of *Salix* branch wood with some side branches left in place.

A single withy tie (SF 3319) was the only portable artefact from this feature.

The eastern pit (SG157243) has a single loose piece of wood in its fills. This is a small stump from a *Prunus spinosa* (SF1061). The western pit (SG110107) of this group produced a single tangentially faced *Quercus* board (SF274).

SG135071. Waterhole, with no revetment but a deposit of bark (135045- *Alnus* sp.), a log ladder (135042) and artefacts (basketry SF 543-544, axe handle SF 88 and a 'beater' SF 323). 106 other loose pieces of wood were recovered from the same feature including wood chippings (1 of *Prunus*, 2 not identified, 3 each of *Populus* and *Fraxinus*, 6 *Quercus*, 11 *Salix* and 14 *Alnus* spp.), bark chippings (1 *Salix*, 1 *Fraxinus* and 11 unidentified), sections of roundwood (1 each of *Frangula*, and *Fraxinus*, 2 unidentified, 5 *Alnus*, 6 *Quercus*, 11 *Prunus* and 22 *Salix* spp.) and stake points (1 *Salix* and 4 *Quercus* spp.). It is possible that among this assemblage are the

remains of a disarticulated wattle lining. However the diverse composition and the fact that much of the roundwood consists of twig-type material suggests rather that this is a more casually derived assemblage.

SG141024 (141121?). Waterhole of two phases, with wattle revetment and log ladder in earliest and log ladder for later phase. The earliest phase wattle revetment (121047/121048) is associated with log ladder 121049. As well as the 37 sections of roundwood (26 *Salix*, 4 unidentified, 2 each of *Alnus* and *Populus*, 1 each of *Quercus*, *Fraxinus* and *Prunus*) the assemblage included 12 wood chippings (7 *Salix*, 3 *Acer*, 1 each of *Quercus* and *Prunus spp.*), 9 unidentified bark chippings and 2 unidentified boards. The Log ladder itself was identified as *Populus sp.*

The recut of this pit contained only the second log ladder (108086), *Alnus sp.*, and a single section of roundwood (108087), *Prunus avium*.

SG152018. Waterhole/pit with loose wood in fill. Six pieces of wood (SF 97-99, 107-109) were taken from this feature for C14 dating and were not available for examination.

SG156028/156031. Waterhole with wattle cylinder lining and several artefacts. The structural elements from this feature appear to consist of the remains of a wattle panel (156020) from which 9 chippings (1 *Pomoidiae*, 8 *Quercus spp.*) and 12 sections of roundwood, 6 to 20 mm diameter (1 each of *Acer*, *Alnus*, *Pomoidiae*, *Salix*, *Ulmus* and 7 *Quercus spp.*) were recovered. A second assemblage (156023) which produced 15 sections of roundwood, 5-12 mm diameter (7 unidentified, 6 *Quercus* and 2 *Salix spp.*) may be derived from brushwood trimmings or sweepings.

The primary deposit of this feature (155197) produced an axe handle (SF 207), a 'beater' (SF208), a section of *Fraxinus* roundwood and a burnt forked *Corylus* branch. From elsewhere in this feature context 155186 produced an *Acer* stake point, two rods, (1 each of *Fraxinus* and *Prunus spp.*) and a withy tie (SF1434), context 155187 produced an unidentified roundwood section and an *Alnus* chipping whilst context 155190 2 *Quercus* stake points, three populus roundwood sections and another withy tie (SF 203).

Late Prehistoric/early Romano-British. (Feature OG178108)

OG178108. Waterhole with possible wattle revetting. Five upright stake points were identified in this feature (3 *Salix* and 2 *Sambucus nigra spp.*) with three *Quercus sp.* chippings. Each stake had been cut from branch wood, with one of the *Sambucus* examples from a forked branch with the fork left in place.

Early Romano-British. (Feature SG133198)

SG133198. Waterhole with wattle cylinder lining and artefacts. This produced one of the better preserved wattle structures, with 13 upright *Alnus sp.* stakes (121177-121185, 121187-121190) supporting woven wattles (133091) of *Corylus* roundwood, 9-32mm diameter. A single *Quercus* support or brace had been introduced to help

support the wattle structure. Unfortunately the sampling of this structure left it unclear what each sample represented.

From the fills of this feature were recovered a single *Salix* chipping, 13 sections of *Salix* roundwood, a single *Quercus* stake, a withy tie (SF 2083), part of a hollowed vessel (SF 1819) and a shaped offcut (SF1808).

Romano-British (Features OG127138, OG129112, OG148302)

OG127138. Waterhole with possible wooden revetting. A single stake tip and an eroded heartwood chipping, both *Quercus* sp., were the only pieces recovered from this feature.

OG129112. Pit with artefact. A single stake point and charred heartwood chipping, neither of which were retained, accompanied a withy tie (SF 218).

OG148302. Waterhole with possible revetment removed during recutting. A single ?post (148303) was recovered for C14 dating and not available for examination.

Late Romano-British (Features SG1355087, SG174069)

SG135087. Pit with artefacts. Two withy ties (SF 135088/135089) were the only pieces of wood recovered from this feature.

SG174069. Waterhole with four phases of use. Wood from final phase includes plank and stake revetting and artefacts. The collapsed revetting (174040) of this feature consisted of several (all *Quercus* sp.) boards, three of which (174050, 174051, 174054) had sawn half lap joints at the ends. These boards were supported by four (174053, 174055, 174059-174060) stakes, (2 *Quercus*, 2 *Corylus* spp.) with three other stake points (1 each *Quercus*, *Fraxinus* and unidentified spp.) from the fill (174017/174049) possibly being for the same purpose.

Four chippings (2 *Castanea sativa*, 1 each of *Alnus* and *Ulmus* spp.) and two sections of roundwood (1 not retained, 1 *Fraxinus excelsior* L.) came from the fill of this feature. To the roundwood should also be added the 'crop crook' (SF 1815), which, though worked at a forked end is not recognisably an artefact. Two withy ties (SF 1230 and 1807) and a broken and insect attacked section of *Quercus* were found. Finally, the worked block (SF 1810) was also recovered from this feature.

Selected Small Finds- Catalogue

A number of the artefacts and timbers merit further comments. These are grouped here by date and object type.

Bronze Age

SG125033.

SF 3319. Withy Tie. 3 strands forming a straight length of rope. Only Species Identification sample retained. 20 dia. *Fraxinus excelsior* L. Context 159214

SG135071.

SF88. Handle of socketed axe/adze. Broken into three sections, two of which refit to form the shaft, but which do not refit to the head. Top of head damaged. Roughly quartered shaft of handle worked to an oval cross section. Single side branch pared to fit inside a socket at an angle of 66 degrees to the handle. Crushing of wood at base of side branch indicates socketed tool has been hafted to handle. No trace of binding or hafting ties. Handle 245 l, butt 41 w, 34 th. tapering to 28 w, 22 th. Fitting for socket 94 l, 28 w, 25 th tapering to 18 w, 15 th. *Alnus* sp. Context 135041

SF323. 'Beater'. Tapering sub rectangular artefact with oval cross section modified by multiple axe facets on one face and both edges. Some uniform wear on all surfaces, axe facets well defined and several surviving tool signatures. Thinner end broken but fragment refitting. No evidence for mounting or hafting. 346 l, 68 w, 25 th. Incomplete axe marks up to 28 w. Tangentially faced *Pomoideae* sp. Context 135041

SF543/544 Basketry. Not examined. Context 135040

SF 563-583. 'Bark Container' Twenty assorted fragmentary groups of bark. Some show axe cut edges and there are occasional blade marks on the inner faces of the bark. No fixings, fittings or artificial holes observed. Not certainly a container or the remains thereof. Largest piece 257 l, 88 w, 4 th. Several pieces identified from remaining wood inside as *Alnus* sp. Context 135045.

135042. Log Ladder. Section of roundwood in two refitting parts. Lower end hewn at angle to create base with well-preserved axe marks. Single step cut towards top end. Some bark present. Top end eroded and damaged. 1.300 m l, 185 dia. Step 815 from lower end, 80 deep. 'Tread' notch 165 long. Axe marks up to 74 wide. *Alnus* sp.

SG141024 (141121?).

102049. Log Ladder. Section of roundwood in four refitting parts. Lower end hewn to roughly bifacial blunt point with axe hewing marks. Three steps cut into same face. Top end bent over due to compression during burial. Bark absent. 1.230m l, 168 dia. Lower step 402 from lower end, 65 deep, middle step 777 from lower end, 55 deep, upper step 1.092m from lower end, 40 deep. 'Tread' notches 120 long. Axe marks 47 wide. *Populus* sp.

108086. Log Ladder. Section of roundwood in three refitting parts. Lower end hewn to blunt bifacial point with well preserved complete axe marks. Single step cut towards top end. Bark present, some hewn away with removal of a side branch during preparation. 1.091m l, 155 dia. Step 829 from lower end, 58 deep. 'Tread' notch greater than 242 long. Axe marks 61 wide. *Alnus sp.*

SG156028/156031.

SF203 Withy tie. Three strands, 'S' twisted, plaited 'Z' fashion to form a fragmentary rope loop. Elements frayed and compressed. Some bark present, no working marks. Strands originally c 10 dia. Rope c. 38 dia. *Salix sp.* Context 155190

SF207 Handle of socketed axe/adze. Broken into four refitting sections but substantially complete. Quartered shaft of handle carefully worked to an oval cross section. Single side branch pared to fit inside a socket at an angle of 62.5 degrees to the handle. Crushing of wood at base of side branch indicates socketed tool has been hafted to handle. No trace of binding or hafting ties. 706 l, butt 37w, 32 th tapering to 44w, 29 th. Butt to mount 655, fitting for socket 79 l, 27w, 33.5 th, tapering to 24w, 28 th. *Quercus sp.* Context 155197

SF208 'Beater'. Tapering sub rectangular artefact with smooth oval cross section modified by multiple axe facets on all of one face, part of the other face and both edges. Some uniform wear on all surfaces, axe facets well defined but tool signatures almost lost. Thinner end broken. No evidence for mounting or hafting. 301 l, 75 w, 27 th. Incomplete axe marks up to 37 w. Tangentially faced *Pomoideae sp.* Context 155197

SF1434 Withy tie. Four strands 'S' twisted, plaited 'Z' fashion to form a short length of rope. No bark present. No working marks. Strands 6.5, 10, 10.5 and 11 dia, rope 21 dia. *Salix sp.* Context 155186

Later Romano-British

SG133198.

SF 1808. Shaped object. Box quartered with rectangular cross section, both edged taper gently towards each sawn end. Light saw marks at each end. 113 l, 28 w, 19 th. *Quercus sp.* Context 133075

SF 1819. Hollowed vessel. Two joining pieces of a bowl or trough. Plain rounded rim, flat base, single Fe nail driven through wall of vessel just below the rim from the outside. Hollowed from slow grown halved timber. Very eroded- no surviving toolmarks. Height to rim 131, Internal depth 100, c 280 dia. wall 26 th, base 23 th. Nail head c 25 dia. *Quercus sp.* Context 133090

SF 2083. Withy Tie. Fifteen strands 'S' twisted, of which three are loosely 'Z' plaited into a short fragmented rope, five laid roughly parallel with no plaiting and the remainder 'Z' plaited into a rope loop. No bark present, no working marks. Rope loop strands 3 of 16, 2 of 17, 1 each of 19 and 20 dia; Parallel strands 15, 17, 19, 20 and 21 dia; straight rope 15, 22 and 24 dia. *Salix sp.* Context 133074

OG129112.

SF 218. Withy Tie. Three strands 'S' twisted, two of which are loosely plaited 'Z' fashion to form a linear rope. Some bark present. No working marks. Fragmentary. Strands 8.5, 9 and 10.5 diameter. *Salix sp.* Context 129117

SG135087.

135088. Withy Tie. Three strand length with loop at one end. Not available for examination. Context 135077

135089. Withy Tie. Three strands 'S' twisted and 'Z' plaited to form a rope partial loop. Some bark present, no working marks. Fragmentary. Strands 6.5, 9 and 10.5 dia. Rope 27 dia. *Corylus avellana L.* Context 135077

SG174069.

SF 1230. Withy Tie. Three strands, each 'S' twisted and 'Z' plaited to form a half loop of rope. Some bark present. No working marks. Strands 10, 10.5, 11 and 12.5 dia. Rope 24 dia. *Salix sp.* Context 174020

SF 1807. Withy Tie. Four strands, each 'S' twisted and 'Z' plaited to form a fragmentary half loop of rope. Some bark present. No working marks. Strands 7, 11, 14 and 15 diameter. Rope 40 dia. *Salix sp.* Context 174039

SF 1810. Block. Box halved, rectangular cross section, edges hewn to blunt apex. One face has seven blind sockets cut into it, in a regular pattern but of varying depths and dimensions. Much sapwood present, with evidence of insect attack. Worn and eroded surfaces, some surface damage additional to that from insects, otherwise complete. No evidence for fixtures or fittings. 270 l, 169 w, 71 th. Sockets are 18 l, 20 w, 31 deep; 18 l, 13 w, 27 deep; 20 l, 16 w, 22 deep; 52 l, 51 w, 48 deep; 37 l, 24 w, 45 deep; 32 l, 29 w, 32 deep; 51 l, 58 w, 56 deep. *Quercus sp.* Context 174039

SF 1815 'Crop Crook'. Curved length of roundwood, truncated fork at one end. No wear or evidence of other modification. Stray piece from wattle structure. 528 l, 22 dia. *Fraxinus excelsior L.* Context 174049

Small Finds- Discussion.***Bronze Age***

Three withy ties were recovered from features of this date. Two of these were straight lengths of rope and the third a fragmentary loop. One of the straight lengths was Ash, the remainder Willow. Each appears to have been prepared in the same way by their individual strands being twisted clockwise and then plaited together anticlockwise. Small fragments of bark indicate that this was still present when the work was carried out and support the conclusion that the twisting and plaiting was done using freshly cut green wood.

No marks were found to suggest that these sections of rope had been cut before they were discarded; the fragmented and eroded ends suggest rather that they broke through use and were discarded as waste. Unfortunately there is nothing to indicate

what these items were used for before they were discarded. Similar ties to these were excavated from Iron Age contexts at Goldcliff (Brunner and Bell 2000, 118), and The Breidden (Britnell and Earwood 1991, 164) though these were of Hazel (*Corylus avellana* L.) and Hazel or Willow respectively. Yew (*Taxus buccata* L) was used for the ties fastening the various sewn plank Ferriby boats (Wright 1990, 65), whilst Willow and Hazel were used to fasten wattle hurdles together on the Neolithic trackway at Walton Heath (Coles and Coles 1986, 87). Some of the fragments from Glastonbury (Bulleid 1911, 341) were associated with frame timbers, interpreted as parts of a loom.

The two axe/adze handles were clearly intended for, and used with, socketed axes. Both examples are worked from long shafts, forming the handles, with one principal side branch worked to create a tine to fit into the socket. The angle of the tine to the handle (62.5 and 66 degrees) is deliberate; the tines are worked slightly off the centre of the side branch and there was sufficient wood available for the angle to have been made somewhat closer to a right angle had this been required. There is no evidence to suggest whether the blade on SF207 was an axe or an adze but the cross section of the tine on SF88 is more likely to have been associated with an axe. A shaving tool appears to have been utilised to trim the handle shaft but a sharp axe blade appears to have been all that was necessary to shape the butt and the head.

A number of socketed axe/adze handles of Bronze Age date are known. The remains of an Oak tine were found in a socketed axe from Horsford, Norfolk (McK. Clough 1970-73, 491). Two single piece Oak handles were excavated at Flag Fen (Taylor 1992, 494), though in the complete example, the tine was carved from the main fork and the handle from the side branch, reversing the practice at Perry Oaks. An Alder handle is known from Inishmuck Lough, Co. Cavan (Green 1978, 139).

The two 'beaters' (SF 323 and 208), found in association with the axe/adze handles, are of uncertain function. The wood they are cut from might be any of a number of fruit woods, such as apple, pear or hawthorn. They are fine grained and hard wearing. It would not be out of place to expect these artefacts to have been intended for some form of pounding or crushing activity, such as food preparation or, if hafted, as mattocks.

The wear on these objects though is quite uniform and as such probably occurred during burial rather than through use. It is questionable whether these are in fact finished artefacts. The axe marks are not smoothed off, the damage appears to have taken place during burial and there is no trace of any hafting or mounting for these tools. In appearance, these 'beaters' are very similar to unpolished stone axe/adzes. If ritual explanations for the depositions in these waterholes are invoked, then it may be worth considering whether these 'beaters' are wooden substitutes for the bronze axe/adze heads removed from the handles with which they are associated.

Access to certain of these waterholes was provided via log ladders, of which three (102049, 108086 and 135042) were recovered. Each had been cut from a log of similar diameter (155-185 mm), one from a Poplar/Aspen, the others from Alder. The lower end of each had been cross cut with an axe to provide an end which could be pushed into the base of the waterhole and thereby provide a firmer seating for the ladder. The notched steps were also cut out with axes, to a depth of between one third

and one half the thickness of the log. The two single notched ladders had a significant distance between the base and the first tread of around 0.82 m, which is not an easy step. It is probable therefore that these ladders were intended to be pushed into the base of their respective features as semi permanent fixtures, rather than temporary access. Only one of the ladders (121049) had more than one surviving step, these were spaced slightly closer together and cut less deeply the closer they were to the upper end of the log.

This log was used butt end up, the others placed butt end down. This meant that the natural taper of the wood was widest at the base of the latter two. The reversing in 121049 is due to the forking of the log at what was used as the lower end- the log is thicker here due to the presence of two other substantial side shoots springing from the main log at this point, and so the thickest part of the log was therefore utilised as the base of the ladder. These three logs all appear to have been cut from substantial branch wood rather than trunks, with side shoots and subsidiary branches hewn away.

A number of parallels for these ladders are known. They include an Oak log ladder of LBA date from Radley, Oxfordshire with two notched steps and a bifaced lower end (Taylor 1995, 40) is of comparable size, with an Alder example from Fengate (Pryor 1991, 55). A further Bronze Age Oak log ladder from Eton, Buckinghamshire, of smaller diameter with two notched steps was recently recovered and conserved at York Archaeological Trust.

Careful cleaning and examination of the pieces of bark (SF 563-583), failed to reveal any indication that it was part of a container. No fixtures or fittings were identified, nor were any holes for possible fastenings found, such as are normally present on such artefacts (Earwood 1988, 87) . Bark containers are normally constructed from sheets of bark removed from a log by cutting a cylinder from the parent log, then splitting the bark along its length to peel it away from the wood. It is difficult to envisage how a whole cylinder of bark might be removed from a log without leaving any trace of such working, or how a bark container could be made without any fastenings or lacing or associated bindings. Metal blade marks on the inner face of several of the fragments and several cut edges suggest rather that this bark is waste from the working of an Alder log.

Romano-British

Further withy ties were recovered from features of this date, and in terms of technology are indistinguishable from the earlier examples. There are more loops, but this is probably a reflection of the greater number of pieces (6) recovered. One however (135088) was made from elements of Hazel, rather than Willow. Again, no specific function can be assigned to these pieces. Handles and bindings are likely uses.

A single hollowed vessel (SF 1819) was recovered. Its irregular surface suggests it was carved from the solid, rather than turned on a lathe. It is possible that this object is the end of a trough, rather than a bowl. Such vessels are known from several Roman sites including Mancetter (Allen, forthcoming), though their ends are usually flanged. Unusually, the conversion of this piece of wood has left the rim of the vessel nearer to the outer sapwood edge of the log. Most such vessels are carved with the

base towards the sapwood edge, and make use of the curvature of the heartwood sapwood boundary to help form the profile of the vessel. The single iron nail may be part of a fitting for a handle or for suspension.

SF 1808 is an offcut or an unfinished artefact. Its purpose is not known but it is regularly and deliberately shaped.

Finally the worked block (SF 1810) requires some comment. The damage which is apparent on this object took place before burial- the wood boring beetles responsible for the insect damage to the sapwood and surrounding areas would not survive in waterlogged burial conditions. Clearly the object was exposed for some time prior to burial. There is no intrinsic evidence to suggest what this object was. Other than the seven sockets cut into the one face there appears to be no means of attaching the block to anything else. The object shows no sign of having been truncated or cut or split off from a larger timber after the evident working on it was finished. It is therefore a slightly damaged but substantially complete artefact.

The sockets vary too much for them to engage with, for example, tenons or pegs in another piece of wood. The sharp, well preserved, chisel marks on their sides do not suggest any rubbing or friction between the sockets and anything they contained. They are not the components of a joint. The shaping of the overall object is also deliberate, and not the result of accidental breakage, but is not especially fine or carefully done. The same can be said of the sockets.

At present, the best suggestion is that this block is the core of a reliquary or similar object. The sockets would contain some sort of relic or material of religious significance, and be entirely encased in a cover, perhaps metal plate or leather. The cover may have been partially removable, through lifting 'doors' to allow access to the contents, or through a sliding or hinged plate. At some stage the cover was removed or detached, the contents removed and the core discarded.

Possible parallels for this artefact are rare. A reliquary of 9th or 10th century date is known from Sussex Street, Winchester (Hinton, Keene and Qualmann 1981). This consists of a beechwood core encased in gilded copper alloy sheets nailed or tacked in place. Study of the object indicates that sockets or holes were cut into it to contain pieces of parchment. The object is much smaller than the Perry Oaks block and differently shaped. A similar continental artefact, the Stephanusbursa, a portable c.9th century reliquary, has a wooden core with six cavities cut into it (Hinton *et. al. op cit*, 62).

There is of course no evidence that any form of casing was applied to the Perry Oaks block. There are no nails or nail impressions. Nor is there any evidence for whatever may have fitted or been placed in the sockets. The function of this artefact as a type of reliquary or similar can therefore remain as nothing more than a suggestion at present.

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The Use and Character of the Wood from Perry Oaks

The wood recovered from the Perry Oaks features include wood placed intentionally, as lining or revetting, and wood which was incorporated into the fills. An element of selection is present to a greater or lesser degree in all of the wood deposited. Obviously, the linings were made from pieces selected for the purpose. The loose finds, whether twigs, chippings or artefacts are also selected, as wood is both a reusable material and ultimately a source of fuel. The non-structural wood may have been placed deliberately, with overtones of ceremony (as is perhaps the case with the axe/adze handle and 'beater' associations), through to a simple decision that a group of chippings were not worth taking to a fire.

The assemblages from Perry Oaks are dominated by roundwood, usually employed to make woven wattle structures to retain the sides of negative features. Only in the Roman period are plank or board structures utilised for this purpose, and then only in one feature. The wattle structures appear to be of similar construction. The worked lower ends of the upright elements are almost invariably cut to a point, suggesting that the stakes were driven into the base of the feature and the horizontal rods woven around them.

Although only one substantial Roman wattle structure was excavated, compared to five Bronze Age, they do exhibit significant differences. The uprights of the Bronze Age structures have modifications limited to the cutting of a point and the trimming of side shoots while a mix of wood species is apparent in wattles and uprights within the same structure. The uprights of the Roman structure have hewn points, but also have two flat opposing faces along their length, giving a sub rectangular cross section. All of its uprights are Alder, whilst all of the wattles are Hazel.

Analysis of the five Bronze Age assemblages (figs. 1, 2, 3) bring out some aspects of the wood selection. Selection for size is not rigid, the diameter ranges being fairly widely spaced. The wattles from 124190 and 121048 have a more tightly bunched distribution than the others, with fewer extremes of diameter. 124190 tends towards rods around 15mm diameter, whilst those from 121047/121048 tend to be slightly smaller. None of the wattles were more than eight years in age, and potentially, the material may be derived from underwood felled on a seven to eight year cycle. The species range from these structures though should be noted. The underwood from which these rods were taken was not of homogenous composition. It is highly likely that for these species to be so integrated within the same structure, they were cut and collected at the same time and, by implication, growing together. The exclusive use of Hazel rods in the one Roman wattle structure hints that a different woodscape was then being exploited. Unfortunately, the way this structure was sampled means that any analysis of its components is impossible.

The Bronze Age woodland resources represented by this assemblage includes Oak, Ash, Willow, Poplar/Aspen, Alder and *Prunus* species (probably *Prunus spinosa* L, Blackthorn) with occasional Field Maple, Elm and Pomoideae species (fruitwoods probably including Apple or Pear, or Hawthorn. There is one identification of Alder Buckthorn (*Frangula alnus*). Such trees are characteristic of lowland river valley woodlands, wet or damp locations with base rich soils (Mitchell1986). Most if not all

are capable of management by coppice or pollarding. The uprooted stump of a Blackthorn from SG157243 suggests that some of these may have been growing as scrub woodland in the immediate vicinity. It is noteworthy that there are no samples from trees that prefer drier or well-drained locations, such as Beeches, or those preferring light soils, such as Birches.

The Roman woodscape is somewhat different. Though Oak, Willow, Alder, Ash and an odd piece of Elm are still present, Field Maple, Aspen/Poplar, *Pomoideae* and *Prunus* are no longer present. Instead there are occasional Elder and Sweet Chestnut, with a high proportion of Hazel. The woodland being exploited seems to be a little drier and lighter, with one new species, Sweet Chestnut, which was imported and established in the Roman period (Rackham 1990, 98; Nayling 1991, 12).

Where bark edges were present, examination showed that the roundwood had been cut before the commencement of spring growth, i.e. during the autumn or winter. This is traditionally be the best time to cut small diameter roundwood, when the wood is relatively dry and the leaves have gone.

Preparation of the wood appears to have taken place before the wood arrived at its intended point of use. Woodworking is a subtractive process. Although chippings are present in the majority of the features under discussion, few if any can be convincingly related to the wooden structures. In the Bronze Age, SG 141024 which produced one Poplar/Aspen and one Alder log ladders, there are no chippings of those species. In SG135071, the Alder log ladder is associated with 12 chippings of Alder. The ladder has over 28 surviving axe marks on its surface, which are a small proportion of the number which would have been required to shape this object. In the Roman period, from feature SG133198, there are 13 Alder stakes with worked points and split faces and not a single Alder chipping. The boards used to line SG174040 are not associated with any debris which would have resulted from the sawing and splitting of the crude lap joints employed.

Some woodworking activity was taking place in the vicinity of these features. The chippings and offcuts are unlikely to have moved very far from the place where they were created. However the debris is associated with the use and filling of the features rather than the making of structures within them.

There are very few tools whose presence is directly attested by this assemblage. Axes 41, 67 and 74 mm wide were used to cut and trim the three log ladders and similar tools could account for the few cut roundwood ends present. That such axes were socketed is suggested, but not proved, by the handles recovered from two of the waterholes. In the Roman period, axes were still employed, while chisel blades 9.5 mm wide (sockets of SF1810) and saws (Lap joints of 174051) are also used. Marking out tools, and heavy blades or wedges for splitting timber is implied by the conversions of several of the pieces.

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The archive for this report contains the following:

A4 Lever Arch File with Wood Record sheets completed by field staff

A4 notebook with notes made by the writer.

Database summarising the above (hard copy and on disk).- Microsoft Access v7

Report (hard copy and on disk).- Microsoft Word 97 with three charts in Adobe Illustrator v7

B/W record negatives of selected artefacts.