. AM & RGH 2667

Fruits and seeds from three sites in Ipswich (IAS 4302, 5502 and 7402)

The plant remains from 15-16 Lower Brook Street (5502) and Vernon Street, Stoke (7402) were recovered during the summer of 1975 by Andrew Jones and Nick Balaam, whilst those from Turret Lane (4302) were extracted from samples taken in 1978 by the writer.

Preservation Preservation conditions were similar at all three sites. Moist, but aerobic, soils predominated, containing mainly carbonised material with a few seeds in a mineralised or sub-fossil state. Features 280 and 455 at Brook Street contained anaerobic deposits, as did the bases of several features at 4302. The plant remains from the aerobic soils were generally in poor condition, and many specimens could hot be closely identified. In a few wet features (eg. 0047 at 4302) an active soil fauna (mainly nematode worms) was present probably causing some destruction of plant material.

Recovery During the 1975 season samples from aerobic soils, generally 15 litres in volume, were processed in a flotation machine similar to that described by Williams (1973), collecting the flot in a 1 mm. mesh. Fruits and seeds smaller than 1 mm. were therefore not recovered. Smaller samples of the anaerobic sediments were washed through a rack of sieves, the smallest having a mesh size of 250 microns, and seeds were extracted from the sieved fractions. In addition large samples of the anaerobic soils were processed in the flotation tank, principally in order to recover more fruitstones.

Since the interpretation of carbonised seed assemblages may depend upon the recovery of smaller weed seeds and rachis fragments, slightly different recovery methods were employed in 1978. Seeds were recovered from smaller samples by flotation in the laboratory, using a 250 micron mesh sieve to retain the flot.

Descriptions of crop plants

1. Barley (Hordeum sp.)

The barley caryopses, though rather poorly preserved, are clearly from a hulled variety having an angular cross-section (Fig. , i). There are a few twisted grains from lateral spikelets from all three sites which establish the presence of six-row barley, Hordeum vulgare L., but in 5502 0369 there are twelve straight grains which may be of a two-row variety. Fine morphological features have not survived and the grains are too distorted to make measurements worthwhile.

Small fragments of barley rachis internodes were recovered from 4302. The overall proportions of these internodes cannot be determined, but all specimens have strongly pubescent margins. (Fig. ,k).

2. Wheat (Triticum sp.)

The wheat grains in these samples are of two main forms: a small plump type and more elongate form with maximum width just above the embryo. Both are described as Triticum aestivum sensu lato in Tables and though some of the former may be of club wheat. (Fig. , e,f). The dimensions and indices of six grains from 7402 0281 are as follows:

	Length(mm)	Breadth(mm)	Thickness(mm)	L/Bx100	T/Bx100
min.	2.9	2.5	2.5	116	78
mean	3.98	2.98	2.63	133	89
max.	4.6	3.4	3.0	161	100

3. Rye (Secale cereale L.)

The grains of rye are variable in size and shape, both long curved grains and short straight forms being present (Fig. , a-d). The measurements of seven grains from 5502 0537 give some idea of this variability.

	Length(mm)	Breadth(mm)	Thickness(mm)	L/Bx100	T/Bx100
min.	3.4	1.5	1.5	217	83
mean	4.66	1.96	1.8	238	93
max.	6.0	2.5	2.2	276	107

4. Oats (Avena sp.)

Most specimens are of naked grains, and there are no floret bases. However, the large size of these grains (up to 6.3 mm in length) suggests that the cultivated species Avena sativa is represented. (Fig. , g,h).

5. Horsebeans (Vicia faba L. var. minor)

These large-seeded legumes are quite distinctive even though the hila have not survived, the testas are split and the cotyledons puffed. (Fig. ,j). A few seeds were measureable:

	Cotyledon length(mm)	Cotyledon breadth(mm)	Thickness across Cotyledons (mm)
7402 0090	8.0	5.2	5.5
	6.5	5.0	4.7
	6.0	4.6	4.8
5502 0434	7.6	5.2	4.8
4302 0029	7.1	5.3	5.3

6. Vetches/Peas (Vicia/Pisum sp.)

These spherical seeds and isolated cotyledons, lacking testas and hila, between 3.5 - 5.2 mm. in diameter cannot be closely identified.

7. Flax (Linum usitatissimum)

Feature 0029 x 4302 produced two small flax seeds. The intact specimen measures 3.4 x 2.0 mm. (Fig. , l).

8 Cherry (Prunus avium)

Mineralised casts of endocarps, probably of this species, come from 5502 0434 and 0455, and a well-preserved carbonised fruitstone, 7.0 x 5.9 mm. was recovered from 5502 0113 (Fig. , n).

9. Plums and bullaces (Prunus domestica sensu lato)

Fruitstones came from waterlogged layers at 5502 0455 and 0280 and 4302 0047. They are almost all poorly preserved, crushed and badly distorted, but large stones of a cultivated variety are certainly present (Fig. , m), along with smaller stones of the ssp. insititia.

Entire fruits of P. domestica ssp. insititia were recovered from 4302 0047 and 0036. The mesocarp tissue of these fruits is impregnated with mineral salts, but where they are fractured the endocarp is clearly visible.

11. Herbs

Three mericarps from 5502 0455 are tentatively identified as dill, Anethum graveolens (Fig. , o). A well-preserved globose fruit of coriander, Coriandrum sativum, came from 4302 0047 (Fig. , p).

Discussion and conclusions

The cereals consumed at these sites included six-row and probably two-row barley, bread wheat, rye and oats. The Middle Saxon pits at Brook Street produced very similar cereal assemblages to those of the Saxo-Norman pits at Turret Lane, although oats are less well represented in the earlier samples. These crops were apparently widely cultivated around the North Sea coasts in the early medieval period: the material from Ipswich compares closely with that from 8th-9th century deposits at Dorestadt, for example, (Van Zeist 1970, 139) and a similar range of cereals is represented in the Late Saxon samples from Great Yarmouth (Jones 1976, 227). Unfortunately the composition of the assemblages of cereals, chaff and crop weeds from the Ipswich sites does not clearly indicate whether crop processing was taking place in the town. Characteristically the cereal samples are small and mixed, consisting of a few grains with occasional rachis fragments and weed seeds.

Legume crops included horse-beans and vetches or peas. A range of wild and cultivated fruits and nuts including cherries, plums, apples, blackberries, raspberries and hazel nuts was consumed. Elderberries may also have been utilised, although the seeds of this species may reflect the nature of the surrounding vegetation rather than human consumption.

The Flax seeds from 4302 0029 are small specimens, comparable to seeds from Roman contexts at Colchester (Murphy 1977) and Spong Hill (Murphy, forthcoming) which had mean lengths of 3.22 and 3.18 mm. respectively. It seems likely that such small-seeded varieties were intended for fibre rather than oil production (Renfrew 1973, 123). Flax was also identified at Great Yarmouth.

The cultivation of herbs is represented by the tentatively-identified fruits of dill from Lower Brook Street and by the fruit of coriander from Turret Lane. Fruits of celery occur in several features, but the wild species is common in wet habitats near the sea (Petch and Swann 1968, 161) and at a coastal site like Ipswich it cannot be assumed that celery was utilised. Umbelliferous herbs - parsley (Petroselinum crispum) and caraway (Carum carvi - tentatively identified) - are also know from 8th-9th century deposits at Dorestad (Van Zeist 1970, 141). Herb seeds could easily have been widely dispersed by trade between the North Sea ports.

The seeds of wild plants from these sites fall into four main categories:

1. Synanthropic weed plants, typical of disturbed nitrogen-rich habitats
2. Crop weeds
3. Grassland species
4. Wetland plants

The distribution between these groups is by no means clear-cut but the first two groups make up by far the greater proportion. These seeds are derived partly from the vegetation of the immediate area, and some, no doubt, arrived at the site as contaminants of crops.

Caption to Figure : Fig : Plant Remains from Ipswich

a-d Rye (Secale cereale) caryopses

e-f Wheat (Triticum aestivum s.l.) caryopses

g-h Oats (Avena sp.) caryopses

i Barley (Hordeum sp.) caryopses.

J Horsebean (V. faba varminor) seed

k Barley (Hordeum sp.) rachis internode

l Flax (Linum usitatissimum) seed

m Plum (Prunus domestica) fruitstone

n Cherry (Prunus avium) fruitstone

o Dill? (c.f. Anethum graveolens) meri-carp

p. Coriander (Coriandrum sativum) fruit

q. Apple (Malus sylvestris) seed.

All scales graduated in millimetres.

Jones, A. (1976) 'Botanical evidence', in Rogerson, A.'Excavations on Fuller's Hill, Great Yarmouth' East Anglian Archaeology Report No. 2, 227.

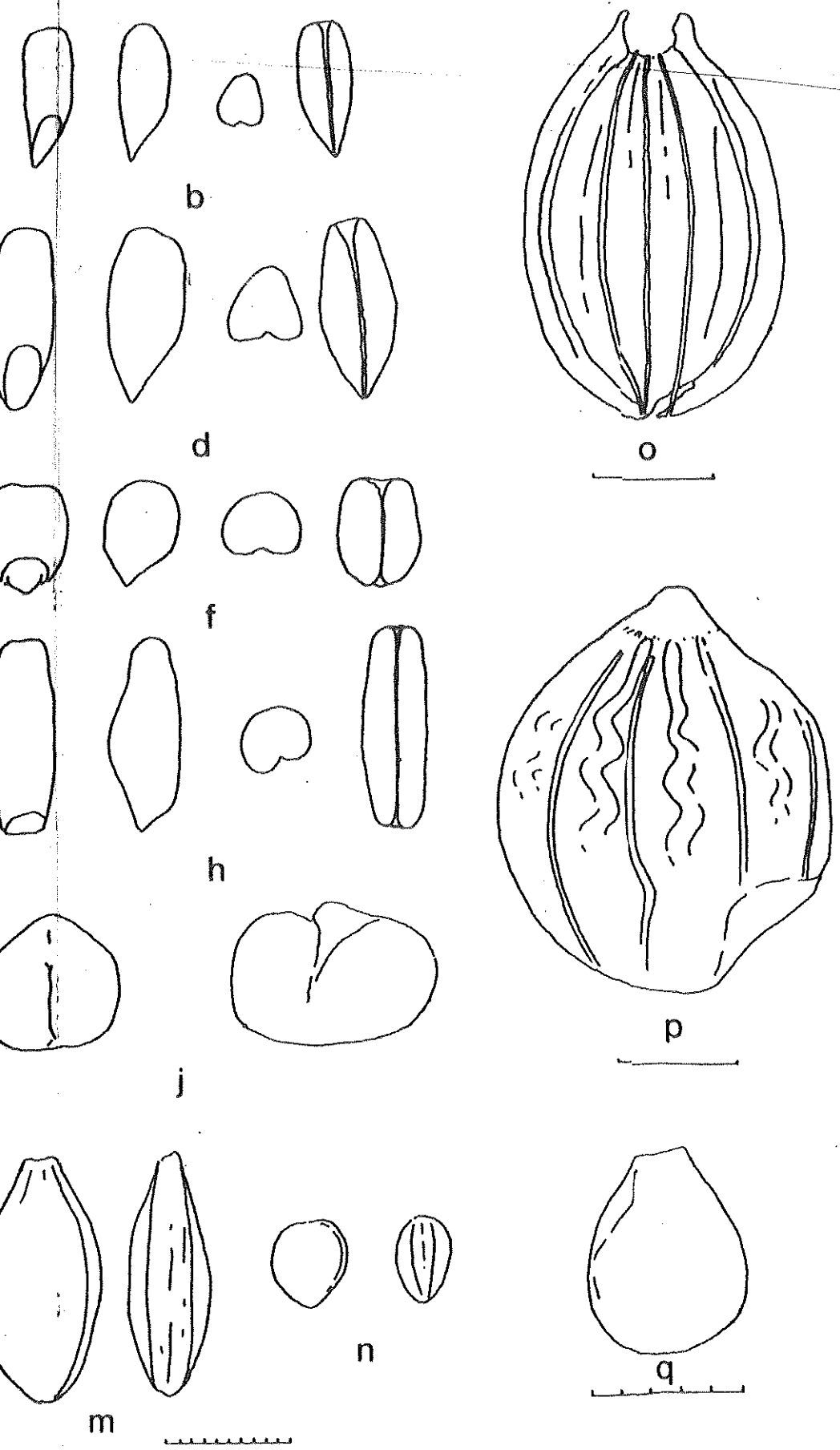
Murphy, P. (1977) Early Agriculture and Environment on the Hampshire Chalklands. Unpublished M. Phil. Thesis, University of Southampton.

Petch, C.P. and Swann, E.L.(1968) Flora of Norfolk. Norwich.

Renfrew,J.(1973) Palaeoethnobotany. London

Van Zeist,W.(1970) 'Prehistoric and Early Historic Food Plants in the Netherlands' Palaeohistoria, XIV, 42-173

Williams, D.(1973) 'Flotation at Siraf', Antiquity XLVII, 288-292.



Reduce to 8cm.

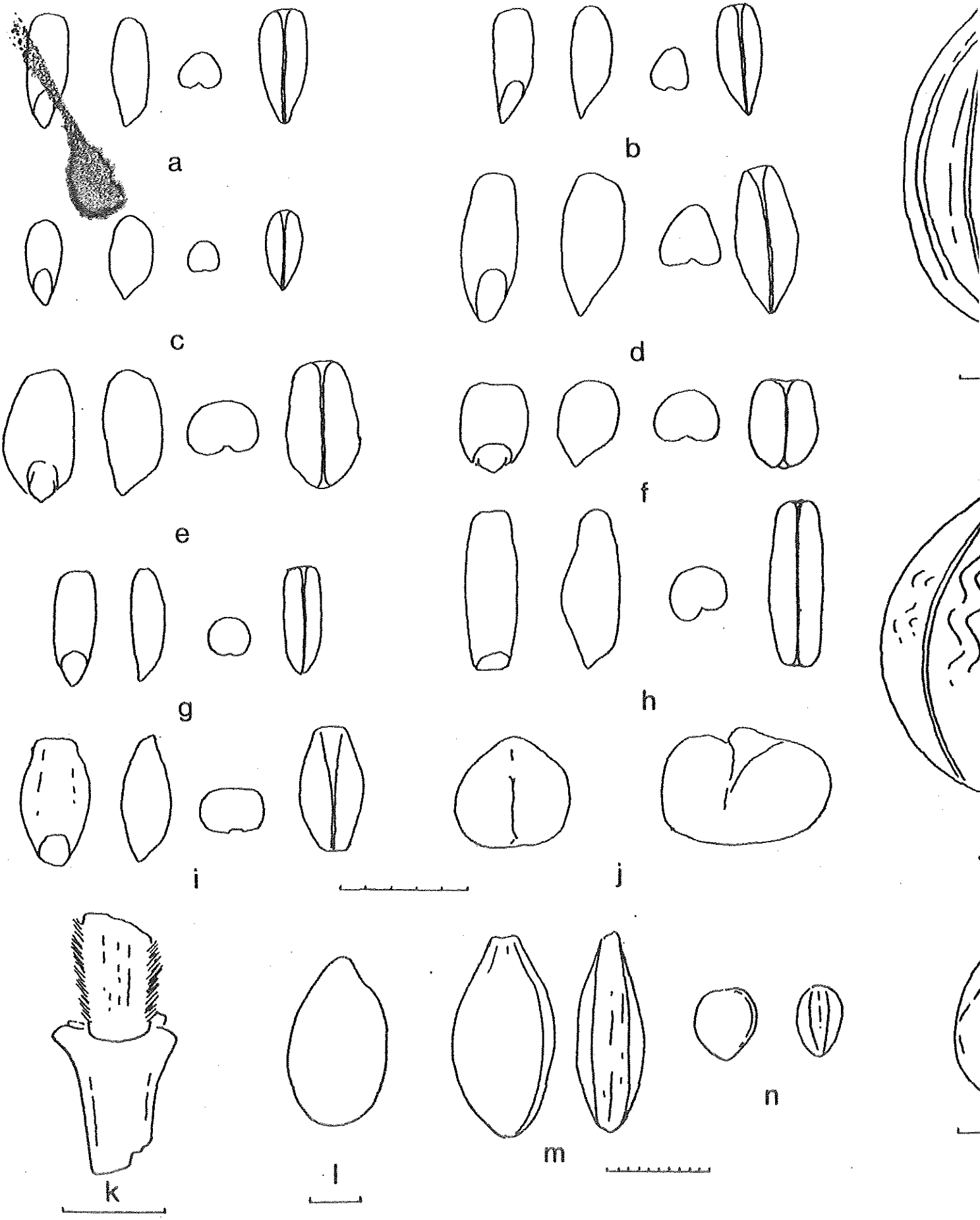

a
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Table 1 Fruits and seeds from Stoke (1AS 7402)

	Feature		0090	0237	0281	Total
	Soil volume processed (litres)		622	435	475	
Cereals	Cereal indet	ca	8	3	5	16
	Hordeum sp.	ca	3	1		4
	Hordeum vulgare. L	ca	1		3	4
	Triticum aestivum sl.	ca	2	1	15	18
	Secale cereale L.	ca	1		2	3
Legumes	Vicia faba L. var. minor	s	4			4
	Vicia/Pisum sp.	s	1		1	2
	Vicia sp	s			1	1
	Lathyrus sp.	s			2	2
Wild Plants	Chenopodium album L.	s	1			1
	Chenopodium hybridum L.	s		1	2	3
	Atriplex patula/hastata	s	1	1	2	4
	Chenopodiaceae: indet.	s	1			1
	Geranium sp.	s	1		3	4
	Sambucus nigra. L.	s	38	11	12	61
	Indet		2	1	3	6

Table 2 Fruit and seeds from Middle Saxon pits at Brook Street (1AS 5502)

	Feature		0113	0229	0369	0374	0434	0455	0516	0537	Total
	Soil volume processed (litres)		60	65	40	55	60	50*	3	75	
Cereals	Cereal indet.	ca	11	12	8	9	6			22	68
	Hordeum sp.	ca	3	9	12	2	2			3	31
	Hordeum vulgare. L.	ca					2			3	5
	Triticum aestivum sl.	ca	1	2	3	3	3	(1)		9	22
	Secale cereale L.	ca			5	2	2			10	19
	Avena sp.	ca		2	1					3	6
	Cereal indet	cn		1						3	6
Legumes	Vicia faba L. var minor	s					1				1
	Vicia/Pisum sp	s				1				1	2
	Vicia sp.	s	1	1						2	4
Fruits	Prunus sp.	fs					2	1(+7)			10
	Prunus avium L.	fs	1								1
	Prunus domestica s.l.	fs						1(+23)			24
	Malus sylvestris. Miller,	s						1			1
	Rubus idaeus L.	fs					9				9
	Rubus fruticosus agg.	fs						135	273		408
	Rubus sp.	fs					4				4
Nut	Corylus avellana L.	n frag		1	1		1			1	4
Herb	c.f. Anethum graveolens L.	mer							3		3
Wild Plants	Papaver rhoeas L.	s						5	37		42
	Brassica/Sinapis sp.	s						2			2
	Agrostemma githago L.	s		1	1					1	13
	Chenopodium album L.	s			1			9	7		17
	Atriplex patula/hastata	s			4			8			12
	Chenopodiaceae indet.	s						6			6
	Potentilla sp.	a							27		27
	Apium graveolens L.	mer							1		1
	Umbelliferae indet	mer		1				3	2		6
	Polygonum aviculare agg.	nu.			2			1			3
	Polygonum persicaria L.	nu								1	1
	Polygonum lapathifolium L.	nu							1		1
	Polygonum convolvulus L.	nu			4						4
	Rumex acetosella. agg.	nu			1				2		3
	Rumex sp.	nu			2			1	1		4
	Polygonaceae indet.	nu			1						1
	Urtica dioica L.	fr						4	3		7

135
273
408

Table 2 continued

	Feature		0113	0229	0369	0374	0434	0455	0516	0537	Total
Wild Plants	Solanaceae indet.	s			1						1
	Galeopsis tetrahit L.	nu						1			1
	Galium aparine L.	s					1				1
	Sambucus nigra. L.	s	5	6	2	1	4	1	2		21
	Valerianella dentata(L)Poll	fr							1		1
	Lapsana communis L.	cy							4		4
	Compositae indet.	cy							1		1
	Carex spp.	nu		1	2						3
	Bromus mollis/secalinus	ca	1	1						1	3
	Gramineae indet	ca	1		3				1	2	7
	Indet.			1	3	1		5	2		10

* 50 litres of soil were processed in the flotation tank, but the figures given here refer to the seeds collected by wet-sieving a 3 litre sample, collecting to 250 microns. Additional specimens recovered in the flotation tank are listed in brackets.

Table 3 Fruits and seeds from Late Saxon well (0280) and twelfth century pit (0364 at Brook Street (1AS 5502).

	Feature		0280	0364
	Soil volume processed (litres)		3*	52.5
Cereals	Cereal indet.	ca		14
	Hordeum vulgare L.	ca		1
	Triticum aestivum s.l.	ca		1
	Secale cereale L.	ca		4
Fruits	Prunus domestica s.l.	fs	(1)	
	Malus sylvestris Mill	s	1	
Dye-plant	Reseda luteola L.	s	14	
Wild Plants	Papaver argemone L.	s	1	
	Brassica/Sinapis sp.	s	2	
	Hypericum sp	s	3	
	Stellaria cf. media (L) Vill.	s	17	
	Silene sp.	s	1	
	Chenopodium album L.	s	9	
	Atriplex patula/hastata	s	2	
	Chenopodiaceae indet	s	2	
	Conium maculatum L	mer	(1)	
	Malva sp.	nu	1	
	Polygonum c.f. lapathifolium L	nu	1	
	Polygonum persicaria L	nu		1
	Polygonum convolvulus L	nu		1
	Rumex sp.	nu	3	
	Urtica urens L	fr	11	
	Urtica dioica L	fr	49	
	Ballota nigra L.	nu	24	
	Labiatae indet	nu	1	
	Galium aparine L.	s		1
	Rubiaceae indet	s		1
	Sambucus nigra L	s	23	
	Anthemis cotula L	cy	2	
	Gramineae indet	ca	4	
	Indet		2	

* 15 litres of soil were processed in the flotation tank; but the figures given here refer to the seeds recovered by wet-sieving a 3 litre sample, collecting to 250 microns. Species recovered in the flotation tank, but not by wet-sieving are listed in brackets.

–	–	–
–	–	–
–	–	–
–	–	–
1	–	–
–	–	–
–	–	–
–	–	–
–	–	–
–	–	–
–	–	4
–	–	–
–	–	–
1	–	1
–	–	–
–	–	–
–	–	–
–	1	–
2	19	26
–	1	–
–	–	–
–	–	–
–	–	–
–	–	–
–	–	1
–	–	–
–	–	–
–	–	–
2	1	–
100	100	100

MEDIEVAL

004	0042	0042
0-20	40-60	80-90
5	5	5
12	1	3
1	1	1
–	–	–
5	6	2
–	–	–
1	–	1
–	–	–
1	–	–
–	–	–
1	–	
2	–	–
–	–	–
–	–	–
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–	–	–
–	–	–
–	–	–
–	–	–
–	–	3
–	–	–
–	–	2
1	–	10
–	–	12
–	–	–
–	–	–
–	–	–
–	–	–
–	–	–
–	–	–

–	–	4	–	–	1	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–
–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–
–	4	–	–	–	–	–	–	–	–	2	–	–	–	1	–
–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	-	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1	22	5	–	–	3	1	1	2	–	–	5	–	–	21	2
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–
–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	1	–	–	–	–	–	–	–	3	–	–	–	–	–
–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
–	–	–	–	–	76+	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	2
–	–	–	–	4	1	–	–	–	–	–	–	–	–	–	1
–	–	10	1	1	–	–	–	–	–	4	2	–	–	–	–
100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

SAXO _ NORMAN

007	0034	0034	0035 0036	0035 0036	0035 0040	0035 0036	0035 0036	0038	0038	0047	0048	0050	0050	0066	006
0-20	40-60	80-100	0-20	40-60	65-85	85-90	90-100	0-20	40-60	–	–	0-20	55-70	0-20	40-6
5	5	1	5	5	5	1	5	5	5	1	5	5	5	5	5
4	2	–	2	22	14	–	–	2	–	–	2	4	1	2	3
–	–	–	4	2	3	–	–	2	–	–	–	1	–	1	2
–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	–
–	–	–	–	5	4	–	–	–	–	–	–	–	–	–	1
–	1	–	–	5	4	–	–	–	–	–	–	–	–	1	–
1	–	–	3	6	3	–	–	–	–	–	2	–	–	1	2
–	1	–	–	2	+	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	1	–	–	–	2	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1	–	–	–	2	–	–	–	1	–	–	–	–	–	–	–
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	1*	–	–	–	–	–	–	–	–	–
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	16+2*	–	–	–	–	–
–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	100+	2	–	–	100+	–	–	7	–	–
–	–	–	–	–	2	–	6	–	–	–	–	–	12	–	–
+	–	–	+	–	+	–	–	–	–	+	+	–	–	+	+
–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	4	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	10	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	+	1	1	1	–	–	–	–	+	–	–	–	–	–
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	1	–	–	11	–	1	–	–	3	–	–	–	–	–
–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	4	12	–	–	–	–	–	–	–	1	–	–	–	–	–
1	5	10	1	3	2	–	–	–	–	1	–	–	–	–	–
–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–
–	–	4	–	–	–	–	–	–	–	1	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	9	–	–	–	–	–
–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	2	–	–	1	–	–	–	–	1	–	–	–	–	–

Euphorbia helioscopia L.	s	-	-	-	-	-	-	-	-	-	-
Polygonum aviculare agg.	nu	-	-	-	-	-	-	-	-	-	-
Polygonum lapathifolium L.	nu	-	3	-	-	-	-	-	-	-	-
Polygonum persicaria L.	nu	-	-	-	-	-	-	-	-	-	-
Polygonum convolvulus L.	nu	-	-	-	-	-	-	-	1	-	-
Rumex sp.	nu	-	-	-	-	-	-	1	1	-	-
Polygonaceae indet.	nu	-	4	-	3	-	-	2	1	-	-
Urtica urens L.	fr	-	8	-	-	3	-	-	-	-	-
Urtica dioica L.	fr	-	37	-	-	-	-	-	15	-	-
Menyanthes trifoliata L.	s	-	-	-	-	-	-	-	-	-	-
Hyoscyamus niger L.	s	-	2	-	-	-	-	-	-	-	-
c.f. Atropa belladonna L.	s	-	-	-	-	-	-	-	-	-	-
Ballota nigra L.	nu	-	5	-	-	-	-	-	6	-	-
Labiatae indet.	nu	-	-	-	-	-	-	-	-	-	-
Plantago major L.	s	-	-	-	-	-	-	-	-	-	-
Plantago lanceolata L.	s	-	-	-	-	-	-	1	-	-	-
Galium aparine L.	s	-	-	-	-	-	-	-	-	-	-
Galium sp.	s	-	-	-	-	-	-	1	-	-	-
Sambucus nigra L.	s	-	-	1	-	14	-	12	4	-	1
Anthemis cotula L.	cy	-	-	-	-	1	-	-	-	1	-
cf. Tragopogon sp.	cy	-	-	-	-	-	-	-	-	-	-
Sonchus oleraceus L.	cy	-	-	-	-	-	-	-	-	-	-
Juncus sp.	s	-	2	-	-	-	-	-	1	-	-
Carex sp.	nu	-	1	-	-	-	-	-	-	-	-
Cyperaceae indet.	nu	-	3	-	-	-	-	-	-	-	-
c.f.Bromus mollis/secalinus	ca	-	-	-	-	-	-	-	-	-	-
Gramineae indet.	ca	-	-	1	-	-	-	1	-	-	-
Gramineae indet.	cn	-	-	-	-	-	1	-	-	2	-
Indet.		1	7	1	-	1	-	1	1	-	-
% Flot sorted		100	50	100	100	100	100	100	100	100	100

Table : Fruits and seeds from Turrett Lane (IAS 4302)

Abbreviation:

ca - caryopsis
cn - culm node
cy - cypsela
fr - fruit
fs - fruitstone
indet - unidentified
n - nut
nu - nutlet
ri - rachis internode
s - seed
s.l. - sensu lato
+ - fragments
* - entire fruits

Period			Pre-occupation	Middle Saxon ?	SAXO - NORMAN							
Context No.			0070	0039	0029	0029	0029	0031	0031	0031	0032	003
Depth (cms) below top of 0070			-	-	0-20	40-60	80-100	0-20	45-65	80-100	0-20	Bas
Soil volume processed (litres)			5	1	5	5	5	5	5	1	5	5
	Cereal indet.	ca	1	-	-	1	1	1	2	-	10	2
	Hordeum sp.	ca	-	-	1	-	-	3	-	-	-	1
	Hordeum vulgare L.	ca	1	-	-	-	-	-	-	-	6	-
	Triticum aestivum s.l.	ca	-	-	-	-	1	1	-	-	2	1
Cereals	Secale cereale L.	ca	-	-	1	1	-	2	-	-	1	-
	Avena sp.	ca	1	-	1	-	1	-	-	-	2	-
	Hordeum sp.	ri	-	-	-	1	2	-	-	-	-	-
	Cereal indet.	ri	-	-	-	-	-	-	-	-	-	-
	Vicia faba L. var minor	s	-	-	1	-	1	-	-	-	-	-
	Vicia/Pisum sp.	s	2	-	-	-	-	-	-	-	-	-
Legumes	Vicia sp.	s	-	-	-	-	-	-	-	-	1	-
	Prunus sp.	fs	-	-	-	-	-	-	-	-	-	-
	Prunus c.f. spinosa L.	fs	-	-	-	-	-	-	-	-	-	-
Fruits	Prunus domestica s.l.	fs	-	-	-	-	-	-	-	-	-	-
	Malus sylvestris Miller	s	-	-	-	-	-	-	-	-	-	-
	Rubus fruticosus agg.	fs	-	-	-	-	-	-	-	-	1	-
	Rubus sp.	fs	-	1	-	-	-	-	-	-	-	-
Nut	Corylus avellana L.	n	+	-	-	+	-	-	-	-	+	+
Herb	Coriandrum sativum L.	fr	-	-	-	-	-	-	-	-	-	-
Flax	Linum usitatissimum L.	s	-	-	2	-	-	-	-	-	-	-
	Papaver rhoeas L.	s	-	-	-	-	-	-	-	-	-	-
	Papaver argemone L.	s	-	1	-	-	-	-	-	-	-	-
	Papaver sp.	s	-	-	-	-	-	-	-	-	-	-
	Brassica sp.	s	-	+	-	-	-	-	-	-	-	-
	Silene alba (Miller)	s	-	-	-	-	-	-	-	1	-	-
	Agrostemma githago L.	s	-	-	-	-	-	-	-	-	-	-
	Scleranthus cf. anuus L.	fr	-	-	-	-	-	-	-	-	-	-
	Caryophyllaceae indet.	s	-	4	-	-	-	-	-	-	-	-
	Chenopodium album L.	s	-	7	-	1	-	-	-	1	-	-
	Chenopodium c.f. glaucum L.	s	-	9	-	-	-	-	-	-	-	-
	Chenopodium hybridum L.	s	-	-	-	-	-	-	-	-	-	-
	Atriplex patula/hastata	s	-	-	-	-	-	-	-	-	-	-
	Chenopodiaceae indet.	s	-	4	-	-	1	2	-	1	1	-
	Malva sp.	nu	-	-	-	-	-	-	-	-	-	-
	Medicago lupulina L.	s	-	-	-	-	-	-	-	-	-	-
	Conium maculatum L.	fr	-	-	-	-	-	-	-	-	-	-
	Apium graveolens L.	fr	-	-	-	-	-	-	-	-	-	-
	Aethusa cynapium L.	fr	-	-	-	-	-	-	-	-	-	-
	Umbelliferae indet.	fr	-	-	-	-	-	-	-	-	-	-