Atthe Report 4850

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Site: Spong Hill

County: Norfolk

Code: 1012 ELN

Director: F. Healy

Type of site: Open settlement

Period: Neolithic - Early Bronze Age

Type of material: Plant impressions and carbonised seeds

This report replaces earlier drafts and includes material from the latest excavation seasons.

### Spong Hill, Norfolk: Prehistoric plant remains

#### Introduction

At sites on well-drained gravel soils, such as Spong Hill, there are two potential sources of information on early crops: carbonised plant remains and impressions of plant material on pottery. Unfortunately carbonised macrofossils from multi-period sites of this type are of limited value due to the very low density of material in the soil combined with the possibility of post-depositional contamination. The fills of the early features at Spong Hill seem to be quite typical of sites in eastern England (Murphy; forthcoming) and elsewhere in the country (Jones 1980, Van der Veen 1985, 206-9) in that carbonised remains of cereals are rare. This is not, in itself, a problem for, if necessary, extremely large bulk soil samples can be processed using a flotation tank. However this should be done only if the possibility of later contamination can be entirely discounted, for even a few contaminant carbonised seeds could obviously have a significant effect on the results obtained from contexts with very low seed densities. Some of the early features at Spong Hill contained intrusive scraps of later pottery and deposits at the site were extensively disturbed by burrowing animals. There is therefore a real possibility that some carbonised plant remains might also have contaminated the early features, particularly since carbonised cereals from Roman and later contexts indicate cereal processing in the vicinity. For this reason the impressions on pottery are thought to give much more reliable results at this site.

### Carbonised plant remains (Table

During early excavation seasons a programme of large scale machine flotation was undertaken by Andrew Jones. This programme included one neolithic pit (163), which produced a single incomplete barley grain (Hordeum sp). In 1977-8 a different strategy was adopted: thirty-five smaller samples, from neolithic and beaker contexts were collected and processed by manual flotation in the laboratory in an attempt to identify features containing concentrations of carbonised plant remains. It was hoped that in such cereal-rich contexts the effects of any contaminants would be statistically minimal. However no concentrations were found: these samples produced only three unidentifiable fragments of cereal grains, two indeterminate wheat grains (Triticum sp) and some hazel nut-shell fragments (Corulus avellana) from five contexts. In view of the potential contamination problem, processing further large samples in the flotation tank was not thought advisable, since it would have been difficult to assess the reliability of the results.

### Table : Carbonised plant remains

Context No	163	730	799	1484	1489	941
Period		1	Weolithia	-		Beaker
Context-type	Post- hole	Pit	Pit	Pit	Pit	Pit
Cereal indet (caryopses)	-	1	l	-	-	]
Hordeum sp (caryopsis)	1	-	-	-	-	-
Triticum sp (caryopsis)	-	-	]	-	1	-
Corylus avellana (nutshel	1) -		+	+	-	+
Sample volume (litres)	30	2.5	2.5	5	5	2.5

### Impressions on pottery (Table )

All the prehistoric pottery from the site was inspected for impressions of plant material. Identifications are given in Table and the results are summarised in Table . Casts of some well-preserved impressions are illustrated in Plate . In addition to the material listed here there were occasional scraps of grass or cereal culm and leaf. The cavities of the impressions were generally empty or filled with sediment, but occasionally carbonised plant material was present, for example in <u>3083</u> where a single grain was found within the cavity formed by an impression of an emmer spikelet.

#### Conclusions

Most of the identifiable impressions of plant material from this site are on early - middle neolithic sherds, particularly on sherds of Mildenhall-type wares. The crops identified, emmer (<u>Triticum dicoccum</u>) and possibly barley (<u>Hordeum sp</u>) are entirely typical of early - middle neolithic assemblages (Hillman 1981, 187) and the results from Spong Hill are comparable to those from other contemporary sites (Evans and Davies 1972; Helbaek 1952, 224; ... Murphy 1982, 47-9). Interpreting such a small collection of impressions in terms of crop production would be hazardous, bearing in mind the complex range of factors which could have influenced the relative frequencies of impressions of different taxa, (Dennell 1976), though the predominance of wheat impressions at Spong Hill should be noted.

A single impression of an apple seed (<u>Malus sylvestris</u>) provides evidence for the collection of wild plant foods. A sherd from 1584 shows a very clear impression of a small immature acorn (<u>Quercus</u> sp) in its cupule; presumably this was just an accidental inclusion.

Len few increasions were seen on late neolithic and early bronce age pottery, and of those listed in Table one impression (from 22) is only tentatively identified, one (3600) is not identified and one group of sherds (from the area of grid squares 2022, 2023, 2030 and 2031) is not securely dated. A lack on rarity of impressions seems to be a common feature of later neolithic pottery and was formerly thought to indicate an economy based on pastoralism in which cereal production was of little or no importance. However carbonised cereals have now been recovered from several late neolithic sites (Jones 1980; Murphy, forthcoming; Van der veen 1985, 208 and references therein) and the rarity of impressions on pottery is now thought to be related more to techniques of pottery making than to crop production.

The sparse carbonised remains of crops add little to the picture gained from impressions particularly since their date is suspect. However the carbonised hazel-nut shell fragments (<u>Corylus avellana</u>) from 799, 1484 and 941 probably give some further evidence of wild plant food collecting.

Finally, it seems worth emphasising that the indiscriminate use of flotation tanks for processing samples from early contexts at multi-period sites should be avoided. The problem of contamination is not confined to Spong Hill: for example, similar problems were encountered when examining flotated samples from the cursus at Springfield Barnes, Chelmsford. In one area of this extensive site there was subsequent Roman activity involving cereal processing, and the neolithic cursus ditch fills in this area contained some carbonised plant remains which could easily represent intrusive material of Roman date. For this reason only neolithic samples from areas of the site with no later activity were considered to be reliable (Murphy, forthcoming). As a general rule, since so little is still known of early prehistoric crop production, it is necessary to be much more rigorous in assessing the extent of contamination than one might be at later sites. To avoid erroneous records of crops from early contexts future work should be directed towards sites where there is no likelihood of contamination, for example, sites on the fen-edge which were covered by freshwater peat after abandonment (Murphy 1983) or sites submerged by rising sea-levels and sealed by estuarine sediments (Wilkinson and Murphy, in press).

<u>ре</u>	Malus sylvestros	Seec.
22	of Cereal	Snallow partial impression possibly
		of cereal grain.
F24	Triticum dicoccum	Spikelet with internode.
F24	Triticum of dicoccum	Lower part of spikelet, no internoce.
F26	cf Cereal	Partial impression, possibly of cereal
		grain.
776 (P115)	cf <u>Hordeum</u> sp	Indistinct impression, possibly of two
		barley rachis internodes.
798 (P115)	Triticum dicoccum	Incomplete impression of spikelet
		showing part of internode.
713 (P114)	Cereal indet	Shallow partial impression possibly of
		inflorescence bract.
730 (P141)	Triticum sp	Impression of interior face of glume.
752	cf Cereal	Possible cereal grain impression.
798	Triticum dicoccum	Impression of lower half of spikelet,
		no internode.
	Cereal indet	Partial impression probably of
		inflorescence bract.
804	<u>Triticum</u> sp	Impression of terminal spikelet.
1270 (P258)	Quercus sp	Impression of immature acorn cupule.
1285	cf <u>Triticum</u> sp	Impression possibly of upper part of
		spikelet, with glume tips.
1457	<u>Triticum</u> sp	Impression of interior of glume.
1534 (P201)	Triticum cf dicoccum	Impression of exterior of glume.
1584 (P236)	Cereal indet	Impression of indeterminate caryopsis
		showing ventral groove.
1898	?Cereal	Partial impression probably of cereal
		inflorescence bract.
1944(197)	<u>Triticum</u> sp	Shallow impression of spikelet fork
		(einkorn/emmer).
Grid Squares	Cereal indet	Very friable lightly-fired clay with a
2030, 2031,		mass of incomplete impressions of cereal
2022, 2023		inflorescence bracts, straw and partial
(IIA misc)		grain impressions. Includes a possible
		Triticum internode impression showing
		marginal pubescence.
	Triticum sp	Impression of grain (ventral surface).
2618 (P361,	Cereal indet	At least three impressions of indeter-
P363, P367)		minate caryopses; other doubtful examples
	Triticum sp	Three caryopsis impressions: ventral
		(emmer-type).

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2020	<u>Initiaur of dicoccur</u>	Shallow intression of external face of
		glume.
3082 (P331)	Cereal indet	Shallow impression of inflorescence
		bract.
3083	Triticum dicoccum	Lateral impression of spikelet. Cavity
		contained one carbonised grain fused
		to remains inflorescence bracts.
	<u>Triticum</u> cf <u>dicoccum</u>	Impression of glume exterior.
3600	Indeterminate	?Large seed.

# Table : Impressions of plant material

# Plate : Casts of some intressions of plant material on early - miccle neclithic pottery.

- Triticum dicoccum. Spikelet of emmer wheat. F24. â.
- b,c. Triticum sc. Wheat grains (emmer-type). 2618.
- c.f. Hordeum sp. Indistinct impression probably of barley rachis internoces. d. 776 (P115).

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- Triticum dicoccum. Impression of glume. 3083. e.
- f. <u>Quercus</u> sp. Immature acorn and cupule. 1270 (P258).
- Malus sylvestris. Apple seed. 18. q.

5mm. (1944) can be letragetied onto photo). Scale:



5mm

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	Early-Middle Neolithic	Later Neolithic- Early Bronze Age	Early Bronze Age
<u>Triticum</u> dicoccum (emmer)	4	-	-
<u>Triticum</u> cf <u>dicoccum</u> ?(emmer)	3	-	-
<u>Triticum</u> sp (indeterminate wheat)	6	1	-
cf <u>Hordeum</u> sp (?barley)	1		_
Indeterminate cereal	7	2	1
<u>Malus sylvestris</u> (apple)	1		_
<u>Quercus</u> sp (acorn)	١	-	-
Indeterminate seed	<b>-</b>	1	_

## Table : Summary of identifications sub-divided by period

Multiple impressions of a single taxon on sherds apparently from the same vessel have been counted as a single identification.

Feférerces

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