APPENDIX 13: ASSESSMENT OF CHARRED PLANT REMAINS & CHARCOAL

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1. Introduction

1.1 This assessment reports on 13 environmental samples taken during excavations at Cuxton (ARC CXT 98) on the northern side of the River Medway in Kent. Six samples were taken for molluscan analysis and were not processed. Seven samples were processed by flotation. Four of these samples produced flots. The purpose of the study of this material was to gain further information about the environment and possible economic activities, for example, crop processing.

2. Methodology

2.1 Each sample was processed using a Siraf type flotation tank. Residues were collected in a 1mm mesh and flots were collected in a 250-micron mesh. Flots and residues were dried prior to scanning. Residues were scanned by eye. Environmental remains and artefacts (such as burnt flint, brick or tile fragments) were collected and transferred to the relevant specialists. Flots and plant remains recovered from the residues were examined in more detail using a low powered stereo microscope.

2.2 The modes of preservation, species diversity and abundance of organic remains in each sample were recorded on sheets then entered into the Oracle MoLAS/MoLSS database. Full sample details are given in the table below.

3. Quantifications

3.1 Most of the samples were poor, dominated by modern plant fragments. Sample <11> contained moderate quantities of well-preserved charred cereal grains, wild plant seeds and chaff. Full details of these samples are given in Table 1.

3.2 The quantities of remains were estimated and recorded in the following manner:

For charred remains
+ = 1-10
++ = 11-50
+++ = 51-100
++++ = 101-1000
1000+ = >1000.

For waterlogged remains
+ = 0-5
++= 6-10
+++=11+

4. Provenance

4.1 One sample, sample <11>, came from a pit provisionally dated as Iron Age. This sample contained an interesting charred assemblage including wheat (*Triticum* sp.) grains, chaff and seeds of crop weeds, for example vetch (*Lathyrus/Vicia* sp.).

4.2 Two samples, sample <22> and <23>, came from the head or stomach areas of skeletons from the Anglo-Saxon cemetery. Unfortunately neither sample produced any useful information. They were dominated by modern plant material (fragments of roots and wood, low numbers of uncharred seeds). Low numbers of charred wood fragments were noted from the residue of sample <23>.

4.3 The last sample, sample <12>, from a pit or tree bole feature was not given a provisional date. Modern plant material and charred wood flecks also dominated this sample.

5. Conservation

5.1 All but sample <11> may be discarded.

6. Comparative material

6.1 Sample <11> is the only sample recommended for further analysis. It could help to fulfil the fieldwork event aim to provide information on Iron Age landuse and economy. It will be interesting to compare it with charred remains found at the Farningham Hill (Vaughan, 1984) where low numbers of charred wheat (*Triticum* spp.) and barley (*Hordeum* sp.) grains were recovered form four pits, but no chaff or seeds as in the Cuxton sample.

7. Potential for further work

7.1 A detailed study of sample <11> will give us further information about the cultivation and consumption of cereals during the Iron Age. Identification of the chaff may clarify the species of wheat and identification of the charred seeds may add information about crop husbandry, for example; were these seeds from wild plants gathered accidentally as field weeds or were they part of a mixed crop?

7.2 The sample will be examined using a light microscope with magnifications of between 10 and 40 times. Modern seed and cereal reference collections and reference manuals (e.g. Anderberg 1994, Berijinck 1947 and Berggren 1969,1981) will be used.

7.3 Plant remains will be identified as closely as their level of preservation allows. Quantities of uncharred remains and charred wood fragments will be estimated and charred remains will be counted. This data will be recorded onto record sheets and transferred to the MoLAS/MoLSS Botanical ORACLE database.

7.4 Further work:

- Identification and recording of the contents in one dry flot
- Table creation and data analysis
- Report Writing
- Editing and Archiving

8. Bibliography

Anderberg, A-L, 1994, *Atlas of Seeds Part 4: Resedaceae - Umbelliferae.* Swedish Museum of Natural History, Stockholm

Beijerinck, W., 1947, *Zadenatlas der Nederlandsche Flora.* Veenman and Zonen, Wageningen

Berggren, G, 1969, *Atlas of Seeds Part 2: Cyperaceae.* Swedish Museum of Natural History, Stockholm

Berggren, G., 1981, *Atlas of Seeds Part 3: Saliaceae- Crucifereae.* Swedish Museum of Natural History

Vaughan, D, 1984, 'The Charred Grains from Farningham Hill' Microfiche M7 and M8 in Philp, B, *Excavations in the Darent Valley*

Table 25: Assessment of Charred Plant Remains & Charcoal

Sample Details				**Flot Details**						**Residue**
Context & type	Period	Sample no.	Sample size (l)	Flot size (ml)	Grain	Chaff	Weeds Seeds charred/ uncharred	Charcoal	Comments [presence of rootlets, uncharred straw etc.]	Size (ml)/ proportion checked
154 / fill	?	26	c10	-	-	-	-	-	-	4900
156 / pit or tree bole	?	12	10	30	-	-	+/0	-	root and stem fragments	5000
180 / dry valley	?	1	10	-	-	-	-	-	mollusc sample	-
181 / dry valley	?	2	10	-	-	-	-	-	mollusc sample	-
182 / dry valley	?	3	10	-	-	-	-	-	mollusc sample	-
183 / dry valley	?	4	10	-	-	-	-	-	mollusc sample	-
184 / dry valley	?	5	10	-	-	-	-	-	mollusc sample	-
315 / skeleton	?	22	10	20	-	-	-	+	root and wood frags	3600
323 / fill	?	24	c10	-	-	-	-	-	-	900
342 / pit fill	Iron Age	11	30	40	++	+	++/0	+++++	uncharred stems/roots	4500
378 / skeleton	Early Medieval	23	2	40	-	-	0/+	+	uncharred seeds and root fragments	2400
246/fill	?	25	c10	-	-	-	-	-	-	3000