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Biological analysis of late medieval soil samples from Narrow Quay, Bristol.

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Introduction

A waterfront site at Narrow Quay, Bristol was excavated by G.L. Good for Bristol City Museum in 1978 and several of the archaeological deposits sampled were selected for biological analysis. A preliminary analysis of the samples was made by J. Shackleton and M. Bell and the details concerning sediment description and laboratory processing are summarised below or noted in their report. 500 gram sub-samples were washed through a bank of sieves of which the minimum mesh size was 0.5mm. The residues were then examined for plant and animal remains. Samples from two contexts were examined in this manner, BAC the fill of a large pit 19x4x0.6 metres thought to represent St. Clements Dock, which was backfilled in a short period between 1581 and 1600, and AAD a pit, the fill dated to 1450-1500.

BAC soil sample 5 This sediment was a dark gray (10YR 3/1) clay loam containing 25% anthropogenic inclusions including animal bone, oyster and mussel shell, wood, coal, charcoal, mortar, slate, tile, clinker/slag, plant remains, molluscs and insects. The unsorted nature of this mixed deposit suggests that it was dumped. The organic matter content was about 50%.

BAC soil sample 4 This dark grey clay loam was very similar to sample 5 (10YR 3/1), containing 35% anthropogenic inclusions notably animal bone, oyster, wood, plant remains, molluscs, insects, coal, mortar, slag, clinker and small lumps of grey clay, and its appearance once again suggests that it was dumped.

AAD soil sample 1 The sample from this pit was described as a dark greyish brown (10YR 4/2) silty clay with darker bands and possible iron mottling. 10% anthropogenic inclusions were noted including twigs and shells and again it probably represents dumped material. Many bird and mammal bones were recovered, including those of starling, identified by Bruce Levitan. Molluscs, seeds, insects and egg shell were also noted.

The plant remains (seeds and fruits) have been identified by Miss P. Paradine, the insects by Dr. L.Strong and the molluscs by Dr M. Bell and their results are described below.

1. Plant remains. The identification of the seeds and the habitat preferences of the plants are given in table 1, the source consulted for the habitat information was Clapham, Tutin and Warburg (1962). As the table shows, the plants are representative of a wide range of different habitats and thus were derived from a variety of sources. Weeds of waste ground are commonly found on urban excavations; chickweed, fat hen, goosefoot and knotgrass being common examples, though plants in this category do exloit a wide range of ecological niches. Some plants such as corn cockle are more specifically found as weeds of cultivated ground, and aquatic and damp loving plants are represented by celery-leaved crowfoot, fool's watercress, and rushes among others. Woodland and hedgerow plants such as deadly nightshade and hazel are also represented and many plants such as hazel, elder, blackberry and plum are edible. Only the most obvious food plants are noted, though in the past a wider range of wild plants were considered to be edible than commonly exploited today in Britain. In short, the plant remains from context BAC represent food debris, possible flooring or roofing material as suggested by the presence of plants from wet habitats, and wild plants whose seeds were locally abundant in an urban environment including some from outside the urban area bought on feet of people, animals or dropped by birds. All these sources are unsurprising for dumped material infilling a large area such as St. Clements dock. The

plant remains from context AAD are similarly diverse in origin.

2. Beetles and Puparia

BAC soil sample 4.

Fragment of elytra, head and thorax of Curculionids (weevils) which feed on flowers, amongst other things were identified in this sample. Other fragments present are those of Carabid beetles which are predaceous ground beetles, as well as the head of a beetle larva; probably that of a Dermestid, a group which feeds on dead or dry animal matter. Various fragments and two almost complete fly puparia were preserved, some probably from large flies such as flesh flies.

BAC soil sample 5.

This sample contained fly puparia, larval fragments and small beetle elytra which may belong to Dermestid beetles.

AAD soil sample 1.

Weevils, Carabid and possibly Dermestid beetles were identified as well as large numbers of fly (Dipteran) puparia and larvae on which the beetles could have fed. The Weevils are not predatory and would have fed or been present on vegetation such as flowers at or near the site.

The very large number of fly puparia and larvae suggests that much rotting material was present, probably including flesh. The presence of Dermestid beetles also indicates that some flesh was present, perhaps in the form of skins, offal etc. Some fly puparia and the Weevils indicate decomposing vegetable matter, although Weevils are known to exploit a wide range of ecological niches. The beetles in the assemblage are common in habitats such as rubbish dumps or dung pits.

3. Molluscs and Bones

BAC soil samples 4 and 5.

Bird, mammal and fish bone and scale, egg shell, mussel (Mytilus edulis), Oyster (Ostrea edulis) were all recorded in samples 4 and 5 with the addition of land molluscs Limacidae and Helix aspersa in sample 5.

AAD sample 1.

The molluscs listed below were identified in this sample:

Trichia striolata	(2)
Limacidae	(2)
Cochlicopa	(1)
Bithynia tentaculata	(1)
Theodoxus fluviatis	(1)

Cerastoderma edule (cockle), Mytilus edulis (mussel), Ostrea edulis (oyster) and plates from acorn barnacles.

Bithynia is found in quiet rivers, generally in hard water areas, Theodoxus lives under stones or wood in fresh or estuarine conditions where salinity level does not exceed 6% (Graham 1971), and mussel, oyster etc. are marine forms.

Conclusions

Examination of the well preserved and diverse flora and fauna from Narrow Quay gives insight into the domestic life indicated by its debris, associated with life in a medieval town. It also illustrates the very wide range of plants and anaimals that were locally abundant, many of which may have been exploited for food or industrial purposes in the past. The study of the Narrow Quay samples illustrates the wealth of potential information to be recovered from waterfront contexts in Bristol. The comprehensive examination of sediments from the recent excavation at Dundas wharf, will make a further valuable addition to our understanding of the nature of a major medieval port.

References

Clapham, A.R., Tutin, T.G. and Warburg E., 1962 Flora of the British Isles. Cambridge.

Graham, A. (1979) British Prosobranchs. London:Academic Press, Synopses of the British Fauna No. 2.

Shackleton, J. and Bell, M. Preliminary analysis of sediment samples from Narrow Quay, Bristol. A.M. Lab. Report 3787.

Table 1. Macroscopic plant remains

LATIN NAME	COMMON NAME	BAC sample 4	BAC sample 5	AAD sample 1	HABITAT	PREFERENCE
Aethusa cynapium L.	Fool's parsely	-	1	-	B	
Agrostemma githago L.	Corn cockle	-	-	+	B	
Apium nodiflorum (L.) Lag.	Fool's watercress	-	-	1	C	
Apiaceae (Umbelliferae)	Carrot family	-	-	2		
Atriplex patula L.	Common orache	-	+	37	A,B	
Atropa bella-donna	Deadly nightshade	-	-	10	D	
Brassica sp.	Cabbage etc.	-	-	+	varied	
Capsella bursa-pastoris (L). Medic.	Shepherd's purse	-	1	-	A,B	
Carex flacca Schreb.	Glaucous sedge	4	-	6	E,F	
Carex sp.	Sedge	-	1	1	C,D,E,F	
Cerastium sp.	Mouse-eared chickweed	-	2	-	A,B,F	
Chenopodium album L.	Fat Hen	1	6	37	A,B	
Chenopodium album agg.	Fat hen etc.	2	-	-		
Chenopodium polyspermum L.	Many-seeded goosefoot	-	5	-	A,B	
Cirsium vulgare (Savi.)Ten.	Spear thistle	-	-	9	A,B,F	
Cirsium sp.	Thistle	-	2	-	A,B,F	
Coronopus didymus (L.) Sm.	Lesser swine cress	-	-	1	A,B	
Corylus avellana L.	Hazel	+	+	-	D(e)	
Fallopia convolvulus (L.) A.Love syn. Polygonum convolvulus	Black bindweed	-	1	1	A,B	
Galium aparine L.	Cleavers	-	1	-	A,D	
Heracleum spondylium L.	Hogweed	-	1	-	A,D,F	
Juncus sp.	Rush,reed	-	2	-	A,C,E,F	
Lamiaceae (Labiatae)	Dead nettle family	2	-	+		
Lamium amplexicaule L.	Henbit	-	2	-	B	
Lapsana communis	Nipplewort	-	-	1	A,D	
Mercuralis annua L.	Annual Mercury	1	-	-	A	
Moehringhia trinervia (L.) Clairv.	Three-nerved sandwort	3	-	-	D	
Plantago lanceolata L.	Ribwort plantain	1	-	-	F	
Polygonum aviculare L.	Knotgrass	-	-	35	A	
Polygonum persicaria L.	Redshank	3	4	11	A,B	
Potentilla spp.	Tormentils	-	-	369	A,E.F	
Prunus domestica L.	Plum	-	-	0.5+	G(e)	
Prunus spinosa L.	Blackthorn,sloe	-	-	1.5	D(e)	
Ranunculus bulbosus L.	Bulbous buttercup	-	4	-		
Ranunculus repens L.	Creeping buttercup	1	-	2	A,D,E,F	
Ranunculus scleratus L.	Celery leaved crowfoot	-	-	1	C,E	
Ranunculus sp.	Buttercups	-	0.5	+	A,D,E.F	
Rubus fruticosus L.	Blackberry	-	0.5	7	D	
Rumex obtusifolius L.	Broad leaved dock	-	-	93	A,B,D	
Rumex sp.	Dock, sorrel	-	3	-	varied	
Sambucus nigra L.	Elder	-	1+	-	A,D,(e)	
Solanum dulcamara L.	Bittersweet	-	3	-	A,D	
Stellaria graminea L.	Lesser stitchwort	-	-	3	D,F,H	
Urtica dioica L.	Large stinging nettle	2+	15	652	A,D,E,F	
Urtica urens L.	Small nettle	-	1	-	A.B	
Vitis sp.	Vine	1	-	-	G	
Polypodium vulgare L.	Common polypody fern	-	3 small pinnules	-		
Selaginella selaginoides (L.) Link.	Lesser club-moss	-	-	+		

key to habitat preferences: A - waste places; B - weeds of cultivated ground; C - aquatic, D - woods, scrub,hedgerows; E - damp ground, marshes; F - grassland; G - cultivated plant; H - heath; (e) - edible. Numbers refer to numbers of fruits/seeds. + denotes fragments of fruits/seeds.