

# Environmental Archaeology in London 1995-1998, part 4

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ASPECTS OF post-medieval environmental archaeology in London have been examined as part of a research project<sup>1</sup>. This, and a further project<sup>2</sup>, examined data recovered from excavations in the City and immediate environs since the mid 1970s within broad social and economic themes.

The rapid growth of London in both size and population during the post-medieval period resulted in great changes in the infrastructure, topography, culture, society and economy of the city. The existing evidence shows that diet became more varied, with new foodstuffs imported from abroad, some becoming available for the first time; for instance, date, allspice, marrow and pumpkin. Some of the more exotic species such as allspice, turkey and green turtle have been used to establish the status of different households and areas in London.

Immigrant groups introduced new skills and encouraged the development of market gardening to feed the growing population, introducing new vegetables and the cultivation of other crops, for example hops for brewing. Brewing was an important industry in London using hops and barley; for example, an extensive layer of charred barley grain was found on a warehouse floor at Abbots Lane, Southwark. Evidence for bone-working industries in London include finds of ivory artefacts (knife handles and combs) and offcuts, bone blanks and chopped and sawn horncores in the City ditch. The large numbers of horncores found at many sites in the east end and Southwark testify to their widespread use in industry such as for linings in casting pits and soakaways. The development of global trade is shown by many exotic finds from London for example the virtually complete coconuts from Tooley Street.

## Finsbury Pavement, City of London

The examination of a 16th-century municipal rubbish dump immediately outside the city walls<sup>3</sup> provided an excellent opportunity to investigate some of the re-

search priorities highlighted in the post-medieval project. A large assemblage of animal bones was collected, with the usual domesticates accompanied by a large collection of wild species, including red, fallow and roe deer, hare, rabbit, nine bird and thirteen fish species. It can be suggested that the presence of deer (and possibly rabbit), heron and crane indicates that the material was generated by, amongst others, high status households. Evidence of industrial activity is also provided by the presence of a number of deposits consisting largely of cattle metapodials.

These dumps also produced a high diversity of plant species. Food plants included bread wheat, six-row hulled barley, oat and rye, sixteen different species of fruits, including strawberry, apple/pear, mulberry, barberry, and hazel and walnut shell fragments (Fig. 1). Other finds included carrot and herbs such as fennel and garden parsley, opium poppy and the first record for rosemary in this period in London. A small number of cucurbit seeds, cucumber, melon and possibly watermelon, were also recovered (Fig. 2). There is potentially evidence for craft and industry using plants as well as animals, in that seeds of flax, hemp, dyer's rocket, hop



Fig. 1: fruit stones and nutshell fragments from Finsbury Pavement (Photo: MoLAS)

1. J. A. Giorgi 'Diet in late medieval and early modern London; the archaeobotanical evidence' in D. Gaimster and P. Stamper (eds) *The age of transition; the archaeology of English culture 1400 to 1600*. London, British Museum, 1997.
2. J. Giorgi 'Archaeobotanical evidence from London on aspects of post-medieval urban economies' in G. Egan and R. Michael (eds) *Old and New Worlds*. Oxbow Books 1999, 342-8.
3. G. Malcolm 'Excavations at Island site, Finsbury Pavement, London EC2' *Trans London Middlesex Archaeol Soc* 48 (1999) 33-58.

and particularly fuller's teal were recovered. The seed head of fuller's teal is used in the textile industry for raising the nap on woollen cloth. Textile activities are shown on contemporary maps, while a teal plantation is recorded as being very close by.

A wide range of other seeds were also recovered, including wetland species which may partly reflect the marshy character of the site, weeds of arable land, wastelands and disturbed ground and also grassland plants. Some of these plants may have been used, for instance sedges, straw and rushes, as stabling and building materials, while holly and box may represent ornamental plants. The extremely diverse assemblage from this site has provided significant data towards establishing what post-medieval Londoners were contributing to the local rubbish dump. This has gone beyond commonly encountered food species, but encompasses herbs, luxury foods, commercial waste and potentially garden shrubs.

### Farringdon Street

Excavations in 1991-2 at 75-82 Farringdon Street<sup>4</sup>, in former times the St Bride's Lower Churchyard, uncovered a total of 606 human burials, almost all in wooden coffins, dating from 1770 to 1849. Most of the burials were piled on top of one another in stacks of up to eight coffins deep. The stacks formed nine intercutting rows. The time of the Industrial Revolution was one of the most unhealthy periods in London's history, with overcrowding, pollution and poor sanitation in many areas.

The human remains from Farringdon Street provide a large (and therefore statistically reliable) well-preserved sample drawn from a relatively poor area. Over 500 of the skeletons recovered were retained for detailed analysis. These were found to include 340 adults and 191 immature individuals. The adults were composed of

rather more males than females (193 males, 122 females). High infant mortality rates amongst this poor cemetery population were reflected in the age composition of the immature skeletons; 122 were less than five years old at the time of death, and of these, 60 were less than one year old. This high proportion of juvenile skeletons, combined with the excellent condition of the remains recovered, has been an important element of the current analysis and will provide a very valuable research resource in the future as few large samples of immature skeletons exist.

At the west end of the site a brick-built burial vault contained 47 burials, placed close together and forming seven solid layers of coffins (Fig. 3). The vault also contained the disturbed remains of about 75 other bodies in a mass of decayed wood, suggesting that the vault had been partially cleared to make space for those later found in it. This was probably done soon after burial, since parts of the disturbed skeletons were still articulated when they were moved. Forty-four skeletons from the vault burials were retained for analysis. The majority of these proved to be male (29 male, 11 female, 4 unknown) and only one was that of a child.

Average male stature was not dissimilar to modern male values, whereas females were on average shorter than their modern counterparts. Other physical characteristics were in agreement with other London populations of the period; for example, medieval samples generally conform to a rounded skull shape, whereas post-medieval have a long, narrow shape or something transitional between the two. There were several cases of *bathrocrania*, or a bun shaped occipital, as noted in other London post-medieval samples.

Dental and oral health was very poor. There was heavy *ante mortem* tooth loss relatively early in life compared to other samples and many individuals had no teeth by later life. Skeletal pathology was common and included cases of those conditions less frequently observed in archaeological material including cancers and probable venereal disease. One female presented characteristics usually associated with rheumatoid arthritis, a condition very rarely reported in the palaeopathological literature. At least ten skeletons had some form of *post mortem* surgery carried out on them. Usually the top of the skull had been sawn off, but in one case there had been further extensive investigation.

Documentary evidence is available for most phases of the cemetery's use, and an important aspect of the analysis has been to compare the portrait of the sample arrived at from the osteological analysis with that given in the documentary sources.

### Southwark

Several sites have produced large post-medieval assemblages, generally concentrated within 16th century deposits. These include Battlebridge Lane<sup>5</sup> and the West

4. J. Conheeny and A. Miles *A post-medieval population from London; excavations in the St. Brides lower churchyard, 75-82 Farringdon Street, London EC4*. Museum of London monograph series, in prep.



Fig. 2: cucumber/melon and marrow/pumpkin seeds from post-medieval London (photo: MoLAS)



Fig. 3: the Farrington Street vault (photo: MoLAS)

Vent Shaft, London Bridge Street, this being one of the Jubilee Line Extension sites. A wide range of plant remains, preserved by waterlogging and charring, were recovered from Battlebridge Lane. Evidence of food plants included bread wheat, barley, rye and oats, waterlogged cereal bran, fruit seeds, e.g. fig, grape, cherry, plum/bullace, peach, apple/pear, and herbs, e.g. coriander and fennel. Hop seeds were found in very large quantities in several contexts suggesting that brewing activities were taking place close by (Fig. 4). Seeds of flax, hemp, and dyer's rocket represented several other potential economic plants. The residues of garden plants included box leaves.

All the animal bones were found in extensive dumping levels and contained a general mix of food waste, con-

5. I. Grainger 'Excavations at Battle Bridge Lane in 1995: medieval and early post-medieval development along Tooley Street' *Surrey Archaeol Collect* 87 (2000) 1-48.

6. D. Serjeantson 'Animal Remains and the Tanning Trade' in D. Serjeantson and T. Waldron (eds) *Diet and Craft in Towns*. B.A.R. British Series 189 (1989) 129-146.

7. D. Saxby *Jacob's Island (JAC96)* MoLAS archive report, 1997.

tributed principally by the major domesticates but also by a wide variety of wild species, plus distinct concentrations of industrial waste. At Battlebridge Lane, a small number of shaved, gouged and sawn cattle metapodials are clearly waste items from a Pinner's shop, while a concentrated assemblage of approximately 50 juvenile sheep/goat metapodials are likely to represent skinning waste. A similar sheep/goat assemblage was recovered from Mayor Sworders Arches. The age of these animals is perhaps significant. It is known that calf skins produced the best vellum<sup>6</sup>, and perhaps a similarly distinct use was made of lambskin. At London Bridge Street there were large dumps of cattle horncores, clearly representing the waste from hornworking activities. Of interest is the continuity of this activity shown at this site, where lesser dumps of horncores were also found within underlying late medieval and overlying 17th-century deposits.

A further site, the block defining Jacob's Island<sup>7</sup>, has been recently investigated. Most of the bones date to the 18th- and 19th-century occupation of the area, during which time a water works was built on the Island, followed by a series of light industries, eventually becoming, in the 19th century, the notorious slum de-



Fig. 4: hop seeds from Battle Bridge Lane, Southwark (photo: MoLAS)

scribed by Dickens in *Oliver Twist*. An obvious point of interest was to establish whether the animal bone evidence would reflect the very low economic status of the 19th-century occupants. Within each of the later two periods, there was a similar array of mammalian domesticates and fish bones. There was, however, a noticeable slant amongst the 18th-century cattle assemblages towards the meat-rich parts of the carcass, while the same species in the 19th-century deposits is largely represented by meat-poor parts. While no firm conclusions can be reached concerning this data, due to the small quantities of bones involved, it is certainly worth noting that this evidence does appear to coincide with the historically established economic pattern for this area.

The plant remains from 18th-century samples included plum and cherry stones, and pips of grape, apple/pear, mulberry, fig, currant, and wild strawberry, while the later samples contained a smaller range of food plants. Study of these plant food remains will provide information on the diet and social status of local inhabitants, whose refuse would have been dumped in these channels, and may illustrate changes from the 18th to the 19th century. The earliest sample contained no food remains, but had seeds of possible arable weeds, and large numbers of well-preserved beetles, virtually all apparently of one type, suggesting that the insects must have been living and perhaps breeding in the deposit, which is likely to have also included spoiled cereal remains. Despite the fact that all features would have contained water, at least at high tide, very few seeds of wetland plants were seen, suggesting that the plant assemblages derived mainly from material dumped in the channels.

From Rainbow Quay, Rotherhithe, large whalebone fragments were recovered from an 18th-century whaling station<sup>8</sup>. Buildings included a circular brick structure, interpreted as a blubber-processing oven. The bone assemblage includes a small, though substantial, collection of whalebones, largely composed of Great Right whale mandible fragments and a moderate quantity of food waste items, mainly composed of cattle fragments. It can be envisaged that both components were relevant to the organisation of the whaling station. Notably, the cattle assemblage was almost entirely lacking in head and foot parts, suggesting the import of either dressed carcasses or joints onto the site. These can perhaps be interpreted as provisions for the whaling ships, where a certain degree of processing, i.e. jointing and/or defleshing, may have taken place at the station. The whale mandibles are likely to have been used for their oil; this is thought, in general, to be superior to that provided by blubber<sup>9</sup>. Indeed each of these bones had been drilled through, often more than once, this acting as a method to drain the bone of its oil content. This extraction process generally took place at sea, the bones being hung from the rigging<sup>10</sup>. The remains of metal spikes were found embedded in two of these mandibles, these possibly being the means by which these particular

bones were hung. Arriving home, these bones were then used for various architectural purposes, as gateposts, fences or supports for roofs or sheds.

## Conclusions

The post-medieval evidence collected from archaeological sites is often considered to be relatively unimportant. However, the range of information from often exceptionally well-preserved assemblages can cover aspects of archaeology which are poorly known from other periods, and even the documentary sources. One specific example is the range of industrial waste which is identified in the archaeological record, identifying not only the processes, but the locations and technology involved. Perhaps most significant is the information that can be gleaned from the cemetery sites about the population of London in this extremely interesting period.

This series of articles have outlined the range of analyses undertaken on biological and geoarchaeological deposits and assemblages, whilst describing the types of information which feed back into the interpretation of archaeological sites. The diversity of material and information from London is unparalleled in England and shows how significant a part can be played by environmental research, particularly in the wetlands and cemetery sites. It from the often small individual sites, that are so much a part of the developer-funded system, that synthetic accounts can be drawn together, contributing to the interpretation of London's past throughout the archaeological record.

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8. K. Rielly *The animal bones from Rainbow Quay* unpublished assessment document.

9. G. Jackson *The British Whaling Trade* (1978) 167.

10. Ellis *Men and Whales* (1992) London: Robert Hale.