Medieval settlement near to the St. Peter's church - environment and economy

Středověké sídliště u kostela sv. Petra - přírodní prostředí a ekonomika

Mark BEECH

Introduction

A total of eleven bulk soil samples were taken from the site near to the St. Peter's church for palaeoenvironmental analysis, primarily in order to recover archaeobotanical remains. These came from three Late-Bronze age (Knovíz culture) pits (13086, 13148, 15060) and from eight Medieval features (pits 15071 and 24020; house layers 16027, 19037, 28021, 3037, 3045 and ID/54). A more detailed description of these samples and their subsequent processing and analysis has already been detailed elsewhere (*Beech 1993a*). In addition, a detailed study was made of the animal bones recovered from 17 archaeological features: nine late Bronze age and eight Medieval contexts (*Beech 1993b*).

This present contribution aims to discuss the broader implications of the data recovered from the medieval samples, and in particular, to discuss its contribution towards the reconstruction of the environment and economy of the medieval site.

Archaeobotanical remains

Generally cereals were only recovered in small quantities is discussed below. *Triticum sp.* (wheat) was present in two samples (contexts 3037 and ID/54), *Hordeum sp.* (barley) in one sample (context 24020), and *Panicum miliaceum* (millet) in three samples (contexts 16027, 3037 and ID/54). By far the richest deposit of cereal material identified within all the Petrská samples was context ID-54, the medieval burnt house floor deposit (semi-sunken building 1/93). This deposit consisted of large quantities of carbonised grains of *Triticum aestivum* (bread wheat) and *Secale cereale* (rye).

Mineralised fruit remains were identified within several 13th century contexts: *Rubus sp.* (blackberry/ raspberry) in contexts 16027 and 24020, *Malus/Pyrus sp.* (apple/pear) in context 3045, and *Sambucus nigra* (elder) in contexts 16027 and 24020. Carbonised nut remains were represented by a single species, *Corylus avellana* (hazelnut) in context 15071.

Animal bones

A total of 1,979 animal bone fragments (more than 20 kg) were analysed the site, of which a total of 778 (39.3%) were identifiable to the level of species.

A total of 934 fragments were identified from the medieval pit under the stairs (feature 24021), of which 372 (39.8%) were identifiable to the level of species. The most commonly represented animal was *Bos primigenius f. taurus* (cattle) (N=176, 47.3%), followed by *Ovis/Capra* (sheep/goat) (N=103, 27.7%), then *Sus scrofa f. domestica* (pig) (N=78, 20.9%). *Equus ferus f. caballus* (horse), *Lepus europaeus* (brown hare), *Gallus gallus f. domestica* (domestic fowl) and *Anser f. ?domestica* (goose, ?domestic) all being represented in small quantities.

A total of 993 fragments were identified from the medieval house (features 10084, 11064, 13150, 17045, 18033, 19038 and 21052), of which 389 (39.2%) were identifiable to the level of species. The major domestic species were all represented by quite similar amounts, *Bos primigenius f. taurus* (cattle) being the most common (N=144, 37.0%), followed by *Sus scrofa f. domestica* (pig) (N=122, 31.4%), then Ovis/Capra (sheep/goat) (N=112, 28.8%). Gallus gallus f. domestica (domestic fowl) was only present in very small numbers, with *Equus ferus f. caballus* (horse) and *Cervus elaphus* (red deer) being represented by single fragments.

There were traces of carnivore gnawing to many of the bone fragments, suggesting that many of the bones probably lay around on the ground surface for a period of time prior to their incorporation in the deposits. Although no bones of dog were identified from the site, they undoubtedly played an important and active role in the post-depositional modification of the assemblage.

Many of the bones also showed apparent traces of burning to their surfaces, perhaps resulting from cooking and/or post-discard activities. It is worth pointing out that the general percentage of burned bones was much higher from the house deposit than from the pit under the stairs, e.g. 68.1% of cattle bones being burnt in the former, as compared to 14.8% in the latter. This perhaps suggests that many of the bones from the house deposit represent household waste from domestic cooking activities. The bones were generally very fragmentary. This fragmentation was partly caused by the butchery practices represented at the site (see below), and also perhaps as a result of carnivore damage, as discussed previously.

The anatomical representation data for the major species

suggested that whole animals were being slaughtered in the nearby vicinity. The numbers of bones present were generally too small to permit a detailed evaluation of the relative presence/absence of different body parts, although it is perhaps worth pointing out the relatively high numbers of pig maxillae and mandibles in relation to other elements within the house deposits. This concentration may have resulted from the slaughtering and deliberate dumping of primary waste from pig heads during butchery activities.

Traces of butchery marks were recorded on many of the bone fragments. Following the interpretation of cut and chop marks as provided by *Binford (1981)*, these largely suggest basic dismemberment activities, along with the filleting of meat. The butchery pattern was broadly similar for the major species, attle, pig and sheep. Heads appear to have been removed by chopping or cutting through either the atlas or axis. Horncores (of cattle and sheep) were chopped off through the base. Skulls were split, presumably to remove the brains. Mandibles had traces of chops and cuts suggesting their separation from skulls and perhaps alsoto facilitate tongue removal. The trunk carcass of all the main species were split axially (as witnessed by the numerous split vertebrae centrae), with subsequent partitioning of the trunk into smaller portions (obliquely chopped vertebrae centrae, and rib segments). Other post-cranial elements were regularly dismembered at the following points: scapula glenoid, distal humerus, proximal radius, proximal ulna, pelvis: acetabulum/ilium shaft, proximal femur (capnt), distal tibia, proximal metatarsal, and astragalus.

Both dental and epiphyseal fusion age data indicated that cattle were mostly of mature adult age, and were probably kept for milk or used as traction animals. Sheep were primarily slaughtered for their meat, some older animals being kept for their milk and/or wool, as well as for breeding stock. The majority of pigs were killed before attaining complete maturity for their meat, with young male, rather than female, pigs being generally slaughtered. Several bones of neonatal pigs and ovicaprids were identified, perhaps indicating that they may have been reared in the nearby vicinity of the settlement.

Generally there were few notable pathological specimens implying that the livestock were for the most part healthy and well treated. However, a pig 1st phalanx from context 17043 (the early medieval pit under the stairs) showed marked bone changes to its distal facet, with the presence of exostoses and the extension of the articular surface with new bone formation. Such changes may be connected with the onset of osteo-arthritic associated diseases. It has been suggested by *Boessneck et al. (1971)* that the penning of pigs and the habit of tieing them up by their legs may have contributed to the development of such a phenomenon.

It was possible to reconstruct the withers heights of three specimens using the indices of Fock (for cattle), cited in von den *Driesch and Boessneck (1974)*, and *Teichart (1975)* (for sheep): a cattle metacarpal (context 18029) gave a withers height (WH) of 1.10m, a cattle metatarsal (context 17037) gave a WH of 1.04m, and a sheep calcaneus (context 13121) gave a WH of 0.53m. The general size of these animals falls within the known range for the period in question.

Fish bones

Two Medieval features (contexts 19037 and 24020) contained substantial quantities of fish skull, vertebrae, spine and scale fragments. Feature 19037 contained a *Cyprinidae* dentary fragment, an *Esox lucius* (pike) vertebra and seven unknown fish scale fragments. Feature 24020 contained the richest collection of fish bones, eighteen *Salmoniformes: ?Salmo trutta* (trout) vertebrae being identified, as well as 12 unknown fish skull fragments, 29 unknown fish spine fragments and 5 unknown fish scales.

It is worth noting that all the aforementioned material was recovered from the residues resulting from the processing of the bulk soil samples for archaeobotanical material. No fish bones were observed by the excavator during the course of the exeavation. This provides a cautionary note to archaeologists of the importance of on-site environmental sampling.

Discussion: environment and economy

Analysis of the bio-archaeological remains from the site near to the church of St. Peter has revealed valuable information about the environmental and economic practices of the local inhabitants of the settlement. Most of the biological remains recovered appear to represent food refuse and organic waste dumped from nearby settlement activities.

The large concentration of carbonised *Triticum aestivum* (bread wheat) and *Secale cereole* (rye) in the Medieval burnt house deposit (context ID/54) appeared to be a relatively pure crop with very little chaff material present within it. Such cereals would perhaps have been used for the preparation of flour, and the part of the house excavated may have been originally used for grain storage. It is worth noting that *Triticum oestivum* and *Secale cereale* represent the two most commonly occurring species found on medieval sites in Bohemia and Moravia (between 1200-1700 A.D.), both being present at 22 ont of the 42 known localities (52% of all localities) with plant remains. (*Wasylikowa et al. 1991*, 219).

The presence of *Rubus sp.* (blackberry/raspberry), *Malus/Pyrus sp.* (apple/pear), *Sambucus nigra* (elder) and *Corylus avellana* (hazelnut) suggests that fruits and nuts were probably gathered from areas peripheral to the major settlement zone, being brought into the city for trading as well as household consumption. It is known that the settlement and economic system within Prague's rural hinterland came into being, by and large, even before the transformations of the 13th century (*Klápště - Smetánka - Dragoun 1983*). As there was a growing urban demand the economic hinterland would have increasingly felt pressure to supply the city population. These imported fruit and nuts would have probably been used largely as foodstuffs, although *Sambucus nigra* (elder) is also a fruit well known for its healing properties, and may have been also used as a dye in the processing of wines (*Hajnalová 1985*:423).

Comparing the botanical data recovered from the site (particularly the mineralised fruit remains) with other known Medieval localities, the material appears broadly similar to, for example, that recovered from early 15th century deposits in Prague (from house no. 24/1, at the corner of Maislova and U Radnice street) (*Čulíková 1987*), as well as from the published Medieval deposits at Most (*Čulíková 1981*), Olomouc (*Opravil 1965*; *Burion - Opravil 1970*), and even some localities in Slovakia (*Hajnalová 1985;1989*). It is perhaps worth pointing out that the majority of material from these other localities probably originated from faecal pits, perhaps hinting that many of the sampled contexts from

the site may have also been partly of faecal origin. Unfortunately comparatively little work has been carried out of a more detailed nature on such deposits, the only exeeption being the early 15th deposits from U Radnice (the "non-traditional interpretation of pollen spectra" by *Jankovská (1987)*, who also identified parasite eggs in her samples).

With respect to the faunal data recovered, important information has been revealed regarding the animal husbandry practices utilised. All the major domestic species appear to have been brought to the nearby vicinity of the site and slaughtered. Cattle and sheep were utilised both for their milk and hide/wool, as well as probably for their meat. Pigs were slaughtered at a young age, and were mostly young males surplus to breeding requirements. The presence of newborn pig and sheep bones within the assemblage suggests that the rearing of these animals was probably carried out within the nearby settlement area. The presence of dentary and skull elements of fish, as well as fish scales, perhaps suggests that they were processed, i.e. prepared for eating, locally. Fish may very well have been procured from the nearby Vltava river or one of its local tributaries, and undoubtedly would have provided an additional important source of food for the inhabitants of the settlement. Unfortunately the lack of sieving and sampling on many previons excavations in Prague may have failed to recover fish bones, hence underestimating their relative dietary contribution.

Comparing the results of the faunal analysis with that of other localities is problematic, as few assemblages are published. Analysis of a small collection of bones from early 13th century deposits at Jilská street identified a broadly similar range of material, largely consisting of *Bos primigenius f. taurus* (cattle) (N=59, 67.0%), followed by *Sus scrofa f. domestica* (pig) (N=15, 17%), *Ovis/Capra* (sheep/goat) (N=10, 11.4%), then *Equus ferus f. caballus* (horse) (N=2, 2.3%), *Canis lupus f. familiaris* (dog) (N=1, 1.1%) and *Corvus corax* (raven) (N=1, 1.1%) (*Peške 1982*). The occurrence of raven is of some interest here, as it became extinct in Bohemia during the late 18th century (*Peške 1982*, 621). Ravens normally feed on carrion and also on waste disposed from human settlements. Its presence in the Jilská deposits perhaps suggests that such birds may have regularly scavenged the open waste dumped in the streets of Prague.

Environmental archaeology n Prague and its environs - the future: towards an interpretation of social status from food consumption

The nature of modern urban development of course dictates to a certain extent access to archaeological deposits. The previous research strategy behind excavations carried out in historic Prague has been largely based on the documentation of stratigraphic 'reference points', as well as the elaboration of major geomorphological and hydrological factors affecting the development of the historic urban landscape (*Hrdlička 1983*; *1984*).

It is a pity, however, that no systematic environmental archaeological investigations of different contemporary localities in Prague have been carried out from a socio-economic perspective. It would be of some interest to compare the results of material recovered from Prague Castle excavations with that of different areas of the Old and New Towns. Recent work by Petříčková on the faunal assemblage from Prague Castle suggests that a higher social status may be inferred for the castle inhabitants, who consumed a significantly higher proportion of wild, hunted species (red and roe deer, wild boar, partridge and other game birds) than at other contemporary localities elsewhere in Prague and its environs (e.f. *Boháčová - Frolík - Petříčková - Žegklitz 1990*).

A reeent paper has summarised archaeozoological research carried out for medieval sites in Germany (*Müller 1992*). Several castle sites (e.g. Bischofswarder, Neubrandenburg, Meißen and Zehren) also appeared to have high proportions of wild animals with low percentages of wild species in their surrounding villages. This would certainly appear to suggest that hunting was largely a privileged sport of the castle inhabitants. One shonld take into account, however, the possibility that the faunal spectrum of the castle may have also been affected by the tax-payment system. It is known that castle inhabitants (normally the tax regulators) in medieval times often received their food from tax-paying farmers in the surrounding villages. One method of confirming this might be to compare the anatomical distribution of bone elements between different sites in order to examine if concentrations of particular elements occurred, suggesting the importation of joints of meat.

Analysis of bone assemblages from both post-medieval Loudon, as well as from some of the slavery and early colonial sites in America have, for example, shed light on the social statns and identification of particular ethnic groups (*Davis 1987*). In the case of Prague, we may still be a long way from determining the ethnicity of its inhabitants within its various quarters on the basis of their food remains. Nevertheless, it is clear that bio-archaeological data can provide valuable information with regard to such questions as the diet of the inhabitants, methods of food retrieval and processing, as well as techniques of animal husbandry. Clearly the selection and strategy of future excavations in Prague has to also take into account environmental archaeology, and the necessity for on-site sieving and sampling of deposits.

Analysis of the bio-archaeological data from the site near to the St. Peter's church has provided a tantalising glimpse of settlement activities in 13th century Prague. Clearly the inhabitants of the site were probably for the most part consumers. There is some possible evidence, however, that flour, as well as various fruits and nuts may have been traded. There seems to have beeu a heavy reliance on domestic animals with very low percentages of wild species in contrast to Prague Castle. Cattle, pigs and sheep all appear to have been brought to the settlement "on the hoof", being slaughtered, butchered and consumed nearby. There is possible evidence to suggest that igs and sheep/goat may have been reared in the settlement vicinity.

Future excavations alongwith further environmental analyses will undoubtedly continue to shed light on the inhabitants and environment of early Medieval Prague. Clearly more extensive sampling, along with the analysis of statistically significant datasets, is required if we are to investigate more detailed questions such as social status and ethnicity.

Středověké sídliště u kostela sv. Petra - přírodní prostředí a ekonomika

Článek zahrnuje širší výklad environmentálních dat získaných z řady vzorků, které byly odebrány při nejnovějším výzkumu lokality u kostela sv. Petra v Praze. Získaná data představují důležitý příspěvek k rekonstrukci přírodního prostředí a hospo-

dářství středověkého sídliště. Vrstva interpretovaná jako propálená podlaha částečně zahloubené stavby (1/93, vzorek ID-54) obsahovala značné množství zuhelnatělých obilek pšenice (*Triticum aestivum*) a žita (*Secale cereale*). Obilí obsahovalo velmi malou příměs plevelů. Paleobotanický nález může nepřímo svědčit o užití stavby jako špýcharu. Výskyt ostružin/maliu *Rubus sp.*), jablek/hrušek (*Malus/Pyrus sp.*), bezu černého (*Sambucus nigra*) a lískových oříšků (*Corylus avellana*) dokládá, že tyto plody byly získávány na území v nevelké vzdálenosti od sídelního areálu. Ovoce mohlo být předmětem směny stejně jako přímé konzumace. Důležité informace poskytl i osteologický materiál. Všechny důležité zvířeeí druhy byly zřejmě chovány a poráženy v blízkém sousedství sídliště. Hovězí dobytek a ovce byly užívány pro mléko a kůže/vlnu stejně jako pro maso. Prasata byla porážena v mladém věku (ve většině případů se jednalo o samce). Nálezy kostí čerstvě narozených prasat a ovcí mohou dokládat, že tato zvířata byla chována v sídelním areálu. Doklady rybích zubů, lebek a šupin svědčí o jejich zpracování přímo na sídlišti.

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