Table 13 Measurements of Horse, Dog, Deer, Fox and Polecat

Measurements in mm except where given; Bp/Bd – Breadth proximal/distal end; BFd – Breadth of distal articulation; GL – Greatest Length; GLl – Greatest lateral length, Kiesewalter in von den Driesch and Boessneck 1974; GLP – Length of Glenoid Process; L – Length. Dog height estimates: method of Harcourt 1974; where several bones were probably from one individual, the mean was used.

Horse					
Scapula GLP	Ph. 1	83, 88, 98			
	Ph. 3	84, 85			
Height	Ph. 1	1.23m/12 hands	Femur	GL1	349
estimates		1.42m/14 hands	Metacarpal	GL1	222
	Ph. 2	1.25m/12 hands	Metatarsal	GL1	234
	Ph. 3	1.17m/11½ hands	Metacarpal	GL1	182
		1.37m/13½ hands	Metacarpal	GL1	214
		1.40m/14 hands	Metatarsal	GL1	263
Dog		**N**	**Range**	**Mean**	
Tibia GL	Phs. 1-3	6	154-212	177.2	
	Ph. 4	1	169		
Shoulder height estimates					
	Phs. 1-3	12	41-63c	51.9cm	
	Ph. 4	2	38, 54cm		
Red deer					
Mand. Cheek tooth row L	Ph. 1	120			
Radius Bp	Ph. 1	51.2			
Tibia SD/Bd	Ph. 3	22.8/45.6			
	Ph. 4	28.0/47.2			
Metatarsal G/SD/BFd	Ph. 1	289/20.2/38.6; –/–/40.3			
	Ph. 3	276/24.8/42.1			
Roe deer					
Metacarpal GL/Bp/SD/BFd	Ph. 1	–/18.1/11.3/–; –; –/20.1/–/–			
	Ph. 2	–/20.8/12.9/–			
	Ph. 3	154/20.8/12.8/21.1			
	Ph. 4	–/– /11.8/21.4			
Metatarsal	Ph. 3	188/– /11.5/22.0			
Fallow deer					
Metacarpal GL/Bp/SD/BFd	Ph. 4	202/29.2/17.5/30.1			
Tibia SD/Bd	Ph. 3	15.6/31.7			
	Ph. 4	22.0/33.4; –/35.5			
Calcaneum GL	Ph. 4	83.2			
Metatarsal GL/SD/BFd	Ph. 4	199/14.3/27.2			
		201/14.5/27.4			
		202/14.4/28.0			
		211/14.9/30.1			
		–/14.2/28.3			
Fox					
Radius GL/Bp/SD	Ph. 3	106/11.3/8.0; 110/11.3/7.9			
Tibia GL/SD/Bd	Ph. 1	142/9.0/16.7			
	Ph. 3	132/8.1/14.4; 142/8.8/16.8			
Ulna GL	Ph. 2	141			
Polecat					

Birds

Most bird bones were of fowl or goose, fowl being more numerous than goose in all phases. The importance of sieving, for bird bones, can be seen by comparing the hand-collected bone from phase 1, where there were more goose than fowl bones, with the total bone from the phase, where there was nearly twice as many fowl as goose bones. There were no partial skeletons. Immature bones were common but not predominant for fowl, as follows for the four phases: 35% immature of a sample of 52; 14% immature of 14; 35% of 35; and 17% of 28. By contrast, only one immature goose bone was found (from phase 4). No spurred fowl tarsometarsi were found (numbers of unspurred specimens for the four phases: 4, 5, 1, 7). Measurable bones were not numerous (data held in archive). For phases 1 to 3, they were within the ranges found at medieval Exeter (Maltby 1979). In phase 4 most bones were from the same, typically small, type of fowl. Two bones suggest the possibility that a larger type was present by the 15th to mid-16th-century in Shropshire: a humerus (GL 90.3mm, SC 8.6, Bd 20.4; context 1244, with some intrusive pottery); and a femur (GL 84.3, SC 7.9, Bd 16.9, Context 1617). Compared with the 16th-century and 17th – 18th-century groups at Exeter, the humerus is larger than any. The femur is among the larger specimens of 14th – 15th-century and later groups, and may simply be from a cockerel. Larger fowl have been found at York from the 15th – 16th-centuries (Allison pers. comm.).

For phases 1 to 3, other species of bird were uncommon, even from the sieved samples, with duck (mallard, *Anas platyrhynchos* or domestic), partridge (*Perdix perdix*) and woodcock (*Scolopax rusticola*) present in phase 1, and teal (*Anas crecca*) and woodcock present in phase 3. The list was more varied in phase 4, with duck (mallard or domestic), grey heron (*Ardea cinerea*), mute swan (*Cygnus olor*), partridge, woodcock and raven (*Corvus corax*). There were no remains of any birds of prey, as might be expected at a secular high status site, nor were any dove bones found. An increase in the importance of wild birds has been found at other sites in the later

medieval period (Grant 1988, 170). In Shropshire there are records of feeding partridges with wheat, and of flocks of geese and swans (Stamper 1989a, 41, Kettle 1989, 99).

Evidence for injury, disease or anomalous growth

Pathological bones were separated and are stored together; notes and sketches were made of about fifty specimens and copies of these are held by the author and in the archive. A summary is given here. Bone pathologies were not very common. Most fall into three categories: changes in the dental region, bone fractures and alteration to joints.

Dental pathology and anomalies

In cattle, absence of the lower second premolar was observed occasionally, most commonly in the later phases. The lower third molar was of normal form, with all cusps present, in all cases except one (phase 3) where the posterior cusp was reduced in size. Incidence was as follows: (phases 1-4 respectively) P2 present/absent: (1) 6/1, (2) 3/0, (3) 3/2 and (4) 17/3; (phases 1-4) M3 normal/abnormal: (1) 13/0, (2) 3/0, (3) 13/1 and (4) 34/0. A phase 4 M3 was well worn on the anterior unit but unworn distally, presumably indicating the absence of the upper third molar.

Only four cases of periodontal disease were observed in the cattle mandibles, all affecting the area around P3, P4 and M1. They seemed not to be age-related– a phase 1 mandible with alteration of the mandibular bone below the premolars was only sub-adult (P4 erupting). In a phase 4 mandible from an adult, not old beast (M2 Grant stage j), the anterior part of M1 was broken during life (there was wear on the broken surface) and there was an abscess below M1, draining through to the lingual side. In a phase 3 mandible, P3 and P4 were shed *ante mortem* and the alveoli filled with bone. Incidence of periodontal disease was: (phase 1) 1 of 33 mandibles; (2) 0 of 15; (3) 1 of 19; (4) 2 of 66. Additionally, another mandible from phase 4 had a tooth which was broken during life, perhaps indicating the presence of stones mixed in with the fodder.

From phase 4, three sheep (or goat) mandibles (from a total of fourteen) showed some alteration, one an adult (Payne stage F) with some widening of the alveolus around P4 and M1, and one with some bone recession by M1. The other was from an old animal (Payne stage H) with reduction of bone especially buccally, 1cm below M1; this mandible also retained an incisor tooth (I3), with the cingulum worn away (Deniz and Payne 1982, 160-2) and P2 absent.

Of the quite large collection of pig mandibles, seven showed some pathology or anomaly. Of interest was an adult male (from phase 4) with P4 lost ante mortem and a large area (7 x 4cms) of the mandible below altered, buccally, with a hollow and raised part suggesting an injury to the jaw, perhaps in fighting or from some aspect of management. Enamel hypoplasia on a third molar was observed (phase 1), and on the same jaw there was wear on the lingual side of M1 at the cement-enamel border, well below the occlusal line. Another case of the latter was seen on a second molar (also phase 1); it was not clear what would cause such wear. Overcrowding of teeth in mandibles was observed occasionally, with the fourth premolar somewhat rotated (phase 1, three cases in 49 mandibles, phase 2 one of 16; phases 3 and 4 none, of 26 and 32). Absence of the lower first premolar was recorded, and found to be somewhat commoner in sows than boars (all phases: present in 11 male mandibles, absent in four; present in 15 females, absent in 8).

A mandible from a young horse (phase 4) showed developmental irregularity and pitting on dp2 that may have been caused by vitamin D deficiency during growth (Baker and Brothwell 1980, 143-4).

Bone fractures

Healed fractures were seen in cattle-size ribs, all probably cattle not horse (six bones: phase 1, two bones, of 574 cattle-size ribs; phase 2, one, of 148; phase 4, three (ribs were not counted)). In three cases the rib was broken or cracked and had subsequently healed, and in two cases the rib was broken, the bone was remodelled, but not united with the rest of the (missing) rib. Cattle, as working animals, would have been handled more often than sheep or pigs, with, therefore, a greater risk of injury. Sheep may have suffered occasional injury connected with use of sheep folds. One sheep-size rib (probably sheep not pig) was fractured (phase 4); there was proliferation of periosteal and medullary bone, and the (missing) adjacent part of the rib appeared to have moved against part of the rib, causing a small smooth and shiny 'false joint'.

Other fractures were seen in two dog bones (phase 1: one of 49 dog bones, minimum number of individuals (MN) four; phase 3, one, of 27 bones, MN five). The phase 1 bone was a tibia from a large dog; the fracture had healed with the lower end of the bone at a slight angle; the dog was still young (distal tibia unfused, less than c. 13-16 months old). The other bone is from a small dog where the radius and ulna were fused together, possibly the result of a fracture.

One fowl sternum (phase 1, the only sternum, 62 fowl bones, MN 7) was bent and altered in shape as if it had been crushed while still immature.

Joint pathologies

The commonest joint pathologies found were from cattle, from the lower leg and foot. In one metatarsal (phase 3, one, of ten distal metatarsals), there was severe alteration of the distal end, all around the bone, in the area of the epiphysial plate; the medial condyle had moved laterally and lay immediately next to the lateral condyle. In three cases there was slight alteration and extension to the medial condyle (phase 3, one of ten, phase 4, two of twenty distal metatarsals), which may just be an age-related alteration. In two there was also a small area of degeneration in the articular surface. One proximal metacarpal (phase 4, one of nine proximal metacarpals) had some degeneration in the lateral facet with some 'lipping' of bone around the articular surface.

Osteoarthritis was observed in a first phalanx (phase 3: first phalanges were not enumerated; there were seven second phalanges). Much of the distal joint surface was affected, with an area of grooving and pitting, and surrounding bone destruction and spongy exostosis. One second phalanx (phase 4, one of seven second phalanges) showed polish and irregularities in the proximal articular surface, and proliferation of bone around the joint. And another first phalanx (phase 4) had some alteration around the proximal joint surface. Other joint pathologies in cattle were two cases of osteoarthritis in the pubic part of the acetabulum of the pelvis with polish and pitting (phase 1, one of ten pubic bones; phase 3, one of three); and one mandible (phase 3, one of 14 mandibular condyles) where the whole articular surface of the condyle was altered, with bone destruction medially.

Changes due to injury and resulting infection, work, or just age, are reminders of the contribution made by the cattle, chiefly as members of ploughteams, in the years before slaughter. Bone pathologies were more common in phases 3 and 4, and it is of note that more of the mandibles from later phases were classed as elderly, i.e., some of the pathologies are probably age-related.

Two specimens from other species showed alterations of a joint. A horse metacarpal, where there was periosteal extra growth of bone around the distal end medially, but not affecting the articular surface (phase 1, one of 23 horse bones, MN 3); and a set of three immature sheep lumbar vertebrae (phase 1, one of 13 sheep-size vertebrae) where there was a crack in the epiphyses of two adjacent centra, and the articular processess fitted more closely than normal, so that the vertebrae had not become separate.

Other bones

Other pathological bones observed included the frontal bone and horncore from a young, male goat (phase 2, one of five horncores), with spongy periosteal extra bone on the frontal bone – perhaps a result of fighting other males. Three pig bones bore miscellaneous lesions: a scapula with a lesion on the anterior edge of the blade, surrounding a hole 5.9 x 1.1mm at the edge and 5mm deep (had the scapula been large enough to be wild boar, one might suggest an injury from an arrow wound); a radius with a lesion on the shaft near the proximal articulation; and a tibia with an oval swelling on the distal medial shaft (respectively: phase 1, one of ten scapula blades; phase 4, one of three (only distal radii were counted); phase 3, one of 12 distal tibiae).

In a dog lumbar vertebra (phase 2, MN 5 dogs), the spinous process was bent over towards the right slightly. Locker (1983) describes a dog skeleton from medieval Shrewsbury (the Rigg's Hall site) with similar damage to vertebrae and also a head injury. Other cases were found at late Saxon Thetford (Jones 1993) and interpreted as probably the result of dogs being beaten. Another dog (also phase 2) was a large and probably quite old animal, with an area of degeneration and pitting midshaft on the right ulna and radius, which probably means that there was only restricted rotational movement in the foreleg. The left ulna was similarly affected.

Discussion

Most of the excavated bone probably originates from food prepared for the occupants of the abbey. It is argued elsewhere (chapter 11) that the location of the Queen Anne House site to the south of the western court, and the location in it of the phase 3 kitchen building, makes it probable that rubbish entering the archaeological deposits is likely to reflect consumption by a more diverse population than the monastic community alone: potentially, this could include monks, abbey servants, pilgrims, guests, and their retinues.

Food waste was chiefly from cattle, pigs, sheep and poultry, with small numbers of hunted species. The high proportion of pig bones seen here has also been found at many, though not all, high status sites, including nearby Haughmond Abbey (Levitan 1989, and see Grant 1988 and Wilson 1989). Bones from the head were common for pig, but unusual for other species, suggesting that pig's head and/or braun was served (it was also a well-known local dish in the 18th century). A wider variety of species was found in the phase 4 group, with deer quite numerous, rabbit and hare present, and in addition to fowl, goose and duck, grey heron, mute swan, partridge, woodcock and raven. A similarly wide species diversity was found in the phase 4 fish and botanical remains. Anatomical anlysis of the bones of the main species indicates good preservation of fragile bones and this may partly explain the difference. It does suggest a continued or higher standard of living, with access to hunted species.

The presence of bones from most parts of the carcase and abundant butchery marks suggests that slaughter and butchery took place within the precinct, with rubbish deposited nearby. The precinct at Shrewsbury was not as large as at the later Yorkshire Cistercian houses; for example, at Rievaulx there was a 'clipping garth', 'swine cote' and 'common stable' within the precinct wall (Coppack 1990, 100). But a range of domestic and agricultural activities probably took place, e.g., accommodation for animals before slaughter and stabling for horses (see p.171 for discussion of possible fodder and animal bedding; see also p.201). The presence of bones of cat, dog and horse also strongly suggest these lived nearby. Some selectivity of parts of the carcase appears to have taken place. Numbers were lower than expected for cattle horncores, sheep skull bones, bones from the foot for all three main species; and higher than expected for goat horncores, pig head bones and cattle ribs compared to vertebrae. There was probably movement/trade in less favoured cuts, horn, and hides/skins, to markets in Shrewsbury.

Up until the 14th century, the most important supply of animals would have been from the abbey's demesnes and tithes. Some lands were in Lancashire and Cambridgeshire, but most were in Shropshire, much around Shrewsbury itself and along the Severn to the south-east (Rees 1975).

Sheep were, from documentary sources, 'by far the commonest animal kept in Shropshire in the early Middle Ages' (Stamper 1989a, 58). For example, in about 1268 at the abbey's demesne in Condover there was common for six cows, twelve oxen, thirty pigs and 120 sheep. Shrewsbury was, from 1326, a wool staple town, whose merchants played a role in the international wool market. The ageing data from the sheep showed the typical late medieval pattern of both ewes and wethers being kept well into adulthood to maximise the wool produced. The sheep were of a size similar to those from Hereford (Noddle 1985). Medieval wool from both Shropshire and Herefordshire sheep was fine and of good quality.

Yet of the three main species, sheep bones were the least numerous in the excavated sample. The meat supply was chiefly from cattle and pigs. A similar disparity was apparent at Bolton priory, where sheep dominated the livestock inventory records, with cattle less than 20% and pig only 3%, yet the larder accounts recorded nearly equal numbers of the three species (Kershaw 1973 and Grant 1988). There was selection of the food preferred, and this must have been reflected in agricultural practices: cattle and pigs were being fattened for the abbey, rather than sheep. The percentage of cattle bones from Shrewsbury was high in all phases, though it may be exaggerated by the circumstances of excavation and the type of deposit. For phases 1 to 3 most cattle slaughtered were adults, with some young adults, which is typical for the period, even on high status sites.

Shropshire was a more pastoral county than those of the midlands or south-east England, but the abbey lands were mostly in the more arable areas. Interpretation of the age at death of the cattle may be complicated by, for example, buying of beasts from the upland areas to the north and south-west of the county. It could also be influenced by the practice, which became common from the 13th century, of driving herds of young beef cattle to midland pastures and thence to London (Stamper 1989a, 56).

In the earlier period, an important source of pigs was as payment for woodland pannage. At Condover, for example, in 1268 payment for pigs was either in kind or at ½d each; at Wem, the income probably represented payment from at least 1000 pigs; and in 1247 pigs were being fattened for Buildwas Abbey. There is evidence that woodland pasturing of pigs continued throughout the Middle Ages in Shropshire (Stamper 1989a, 63). Independently of the historical evidence, the age data for pigs suggested a similar management for all excavated phases, in contrast to later medieval phases at Lincoln and Exeter. The percentage of pig bones was, however, somewhat lower by the 15th century, and in this respect Shrewsbury is similar to other sites; Grant (1988) suggests this may be due to greater availability of pasture for cattle and sheep. Kettle (in Baugh 1989) records that sizes of herds of pigs in Shropshire tended to be larger in the 15th than the 14th century, varying from three to over 100, but numbers of herds were greater in the early 14th century than later, as more manors were given over to sheep farming. She also noted that it was usual for demesne pigs to be kept with dairy cattle, at this time, thus using the waste products of cheese-making. The ageing data for cattle for this phase, with the presence of some calves, and older adults, suggested dairying.

Leasing of demesnes was extensive in the early 14th century, following a succession of bad harvests and epidemics of animal diseases, with the abbey's lands reducing from 21 caracutes (about 2520 acres) in 1291 to 12 in 1355, with many demesnes reduced in size, including that in Abbey Foregate. Increasingly, income was in rents, not kind, and food and drink was bought in the Shrewsbury markets– amounting to 400 marks in 1509 (VCH Shrops. II, 33). The bones from phase 4 therefore probably reflect the supply to Shrewsbury from the local area generally, rather than from the abbey's lands.

There are few local sites for comparison. Excavations at two sites in the town centre (Noddle and Locker 1983) produced very small samples of bone, but some differences from the abbey are indicated. More bones of sheep were found than of pig (except in the pre-Conquest group), and of five cattle bones, three were horncores. In the medieval groups at Haughmond Abbey, four miles from Shrewsbury, pig bones were somewhat more numerous than sheep, though not by so much as at Shrewsbury Abbey, and cattle did not predominate to the same extent (Levitan 1989). Pig was important, and continued to be so into the post-Dissolution period. At neither the town sites nor at Haughmond were deer present in the medieval groups, though they were in the pre-Conquest group at one of the town sites and the post-Dissolution groups at Haughmond.

Shrewsbury Abbey received the tithe of the hunting of the shire, in a grant made by Hugh of Montgomery soon after his father's death in 1094. And, in 1194, the abbot was granted one buck per annum in exchange for giving up part of a wood for a neighbouring lord to extend his park (Rees 1975). The tithe would be a sufficient source for the bones from hunted species, though it is also likely that guests to the abbey took part in the chase. The presence of fallow at an early date (early in phase 1) suggests some deliberate post-Conquest stocking of parks. Forests were extensive in Shropshire in the 12th and 13th centuries, and many new parks were made, especially in the late 13th century, this process continuing into the 14th and 15th centuries. Deer were certainly present in these parks, but the parks also provided pasture and woodland for cattle, horses, sheep, goats and pigs (Kettle 1989, 101). Before 1121, the abbey gained the tithes of the forest mares at Upton Magna and Lustney in Hodnet and at this time Welsh horses had a good reputation (Rees 1975, Davis 1989).

2. Fish Bones *by A. K. G. Jones*

A modest-sized assemblage of fish remains was recovered from the Queen Anne House site using two techniques. Some bones were recovered by hand by excavation assistants, others were recovered by sieving soil samples for biological remains and small artefacts. The small assemblage of fish remains is dominated by the well-known marine fishes: cod, ling, hake, conger eel, gurnard and herring. There can be little doubt that some, if not most, of the larger marine fishes were imported as whole fresh fish, as head bones are usually discarded at the coast when fish are processed by drying. One cod cleithum bearing filleting marks was found.

Herring were imported in vast numbers to medieval towns and their presence in sieved samples is not unexpected. A small number of the herring vertebrae from context 1244 (phase 4) were crushed and one of the eel vertebrae was fragmented in a manner typical of small fish remains that have passed through the human gut (Wheeler and Jones, 1989). It is tempting to suggest that this feature may have received human faeces. It is clear, however, that other domestic refuse was disposed of, as several of the fish vertebrae were too large to be readily ingested by humans.

A small number of river and freshwater fishes were recovered: eel, pike and cyprinid fishes (the family that includes the roach, *Rutilus rutilus*, bream *Abramis brama*, and minnow, *Phoxinus phoxinus*). These finds demonstrate that riverine resources, presumably in the vicinity of the site, were exploited for food.

The assemblage is typical of many medieval fish bone assemblages from monastic sites (Jones, A.K.G., 1989). Given the small size of the assemblage and the limited amount of material recovered by sieving, it is not wise to draw sweeping conclusions. Nevertheless, it is clear that a great variety of marine fishes were imported to the site. It is interesting to note the relatively large number of herring bones in context 1244. Herring bones are amongst the most common fish remains to be recovered from medieval archaeological sites when sieving is carried out (Wheeler and Jones, 1989).

Table 14 Species of Fish found by Phase

	Phase	1	2	3	4
Eel	*Anguilla anguilla*				5
Conger eel	Conger conger				1
Herring	*Glupea harengus*				3
Probably herring					36
?Herring					4
Pike	*Esox lucius*	1			1
	?Cyprinidae				2
Cod	*Gadus morhua*	8			13 + 4h
Haddock	*Melanogrammus aeglefinus*	1			
Ling	*Molva cf. molva*				1h
Cod family	*Gadidae*	15		2h	3 + 4h
?Cod family		3			
Hake	*Merluccius merluccius*		1h		1h
Gurnard fam.	*Triglidaè*	1			
Flatfish	*Pleuronectidae*				2h
Unidentified fish		3	4		50 + 4h

Note. All except those marked 'h' were recovered sieving.

3. Medieval and late medieval Coleopterous faunas *by David N. Smith*

Introduction

During the processing and examination of bulk samples taken from the Queen Anne House site for plant macrofossils, James Greig extracted a quantity of insect remains. Details of the contexts in which these occurred are presented in table 15. The remains were examined in the hope that they could shed light on a number of questions that could not be addressed directly from the plant remains alone: the extent to which these deposits were flood or river lain; sanitary and living conditions in the area of the abbey; and the specific ecological behaviour of certain synanthropic species. How representative these remains are of the fauna as a whole is uncertain, since relatively small soil samples were used and the remains were not extracted using paraffin flotation.

Identification and analysis

Only the Coleopterous (beetle) remains were identified from these samples. Identification was carried out using a range of entomological keys and by direct comparison to the Gorham Collection housed in the Department of Earth Sciences at the University of Birmingham, now curated in the Department of Ancient History and Archaeology. The species list is presented in table 16. The taxonomy follows Lucht 1987.

In addition to a consideration of the individual ecology of the species themselves it was decided to summarise the main ecological groupings present in the largest faunas (contexts 1218, 1643, 1762, 1798, 1829). The groupings used and the majority of the ecological assignments follow those outlined in Kenward (1978) and Kenward et al (1986). The results of this analysis are presented in table 17 and figs. 94 and 95. However, the concerns about the representativeness of the fauna noted above should be considered when examining these proportions.

The implications of the species present

Taken as a whole these faunas all contain a similar range of species and give a similar ecological interpretation, highlighting the homogeneous nature of the deposits.

Chapter 9

THE 13th - 18th-CENTURY PLANT REMAINS

by James Greig

Summary

Waterlogged layers from the Queen Anne House site provided large assemblages of well-preserved seeds and pollen, as well as other plant remains. The archaeobotanical results show that many of the deposits contained various kinds of rubbish, and some features contained concentrations of food remains. Some wetland plants in the samples show that the sediments were water lain. The large range of cornfield weeds and some cereal remains provide evidence of straw and weeds. A few grassland plants were also found, probably from hay. Trees and shrubs were indicated by some seeds, buds and pollen, showing some aspects of the local vegetation, with holly, yew and poplar probably growing around the abbey. The food remains show that wheat, barley, rye and oats were consumed, and buckwheat in the 18th century. Peas and beans were also present. A 12th-century find of almond and stone pine suggests some luxury then. A large range of fruit was consumed, including medlar in the 15th – 16th centuries. Post-medieval results were especially interesting, with peach present in the 18th-century deposits, and cucumber or melon seed, and the tropical spices black pepper and grains of paradise, signs of increasing variety in diet at this time.

Introduction

There have hitherto been very few archaeobotanical results from Shrewsbury to compare with the data emerging from some other midland towns. The fact that this is a monastic site is also important for the comparison with results from the other, mostly non-monastic sites in the midlands. The age range of the deposits provides important data with change at one site over a long time – only rarely has a good post-medieval group of plant material such as this been studied. The samples yielded seeds, buds, pollen and other identifiable parts of many cultivated plants which had been preserved by waterlogging (and a few charred remains) in various contexts. These had probably come from kitchen waste and other rubbish that had been dumped there, such as context 1815. Another group of contexts (1219 and 1205) was associated with a drain and was rich in faecal material. Other contexts may have been deposited in a watercourse.

Other environmental remains studied from this material include animal bones (chapter 8.1) and insect remains (chapter 8.3).

Techniques

During the excavations, sediment samples of 1-2 kg each were collected by the environmental assistant, Jackie Kite, by 'judgement sampling' of suitable contexts, especially waterlogged or organic layers. Some of this material was also sieved and sorted on site to find out the state of preservation and abundance of plant remains, so as to be able to guide sampling strategy as the excavations proceeded. The main part of the archaeobotanical work was done at the laboratory in Birmingham. Here, samples were selected for analysis on the basis of the botanical content noted by the environmental assistant, and also with the aim of including the main chronological and stratigraphic phases of the excavated material. Not all the samples could be processed in the time available.

Each macrofossil sample was prepared as follows: first, a small amount of sediment, usually 100 ml, was measured out by water displacement, dispersed in water and sieved on a 0.3 mm mesh to remove fine material. All