The extensive excavations at Christ Church College, Canterbury and Townwall Street, Dover provided large quantities of ceramics, animal bone, small finds and building materials, and the study of these assemblages will go a long way towards advancing the study of the material culture of Middle Saxon and Early Medieval East Kent.

A fabric series for Canterbury’s Middle Saxon ceramics has existed for some years, and was founded on the work carried out at St Martin’s Hill and the first series of excavations at Christ Church College (Macpherson-Grant in Bennett 1986, 105–11; Macpherson-Grant in Rady 1987, 177–82). For this period there is a fascinating contrast to be made between the nature of intra- and extra-mural settlement and its relationship to historical sources, which outline the ecclesiastical and political development of the city. Middle Saxon ceramics can be found around most of the eastern and northern suburbs of the city and they turn up whenever sites are excavated in those areas, as at Old Dover Road, for example, as well as Christ Church College. Within the city they are harder to find, as noted in the Marlowe Theatre volume (Blockley et al. 1995, 870) and it may be that during the eighth and ninth centuries Canterbury functioned principally as an ecclesiastical city, with settlement clustering about its churches and their extensive domains. The development of the port at Fordwich at this time may also have diminished settlement within the centre of the city itself. Further work on the ceramics of this period, based largely on the Christ Church College assemblages, is expected to refine its dating framework and may also allow some insight into the function of some of the vessels, not all of which are simple ‘cooking pots’. The madder staining seen on one of the Christ Church College vessels, described below by Penelope Walton Rogers, indicates that ceramics had many uses, some of which can be classed as industrial. The work at Christ Church College has provided the impetus for a new appraisal both of the ceramics and of other elements of the Middle Saxon culture of Canterbury. The quantity of ceramics is slight, however, in comparison with the 40,000 sherds retrieved from Anglo-Norman deposits at Townwall Street, Dover. Some of these ceramics have been reported on already (Canterbury’s Archaeology 1995–96, 74–81) and when their analysis is complete we will be in a position to judge, for the first time, how medieval Dover worked in relation to the rest of East Kent. The size of the assemblages retrieved from Dover are such that they will form a baseline for all future studies in this area. This applies not only to the ceramics, but also to the animal bone. Although several small faunal assemblages from Canterbury have been published in the past, the 30,000 fragments from Townwall Street will provide the first detailed study of animal management in medieval Dover. An interesting contrast with the contemporary use of animals in Canterbury is expected, but is yet to be fully understood.

Dover and Canterbury are inexorably linked throughout history, although not everybody would wish to acknowledge all of the connections which can be made. One of the most interesting to have been discovered recently stems from Townwall Street, where several bones of the caudal vertebrae of the common or harbour porpoise (Phocoena phocoena) have been identified. These can be compared with similar assemblages excavated some years ago in contemporary twelfth-century deposits within the Cathedral Precincts at Canterbury. A wider range of skeletal elements is present in the Canterbury material but the two assemblages are remarkably similar. The harbour porpoise was undoubtedly caught in the nets of the Dover fishermen and would have been landed as an incidental catch which, in theory at least, would need to be reported to the Warden of the Cinque ports. Porpoise was regarded as a delicacy at this time and was fished in its own right by the French, and along the coast of Holland and Belgium. We cannot say whether the Dover porpoise meat, once removed from the spinal column of the animal, was transported to Canterbury or to Dover Castle, and whether the Canterbury assemblage came from English or French fishermen. None the less, the forthcoming study of these remains does provide a valuable insight into the medieval exploitation of marine mammals, a study which has hitherto remained heavily dependent on historical sources (Sabin, Bendrey and Riddler forthcoming; Gardiner 1997).

The study of material remains is concerned both with individual objects and with broader perspectives. The latter are developing for both lithic studies and for ceramic building materials. In both of these areas sufficient material has accumulated in recent years to allow for reviews.
Identification of dye on Middle Saxon pottery from Christ Church College
Penelope Walton Rogers

A purplish red staining was noted on the inner face of a vessel recovered from a Middle Saxon rubbish pit, at Christ Church College, Canterbury. The vessel is of a local Kent fabric (MLS2) dated c. A.D. 750–85/75. Two sherds of the vessel were provided for analysis, of which one was tested.

To remove the colorant, the inner face of the sherd was swabbed with cotton wool soaked in an acid/alcohol mix (10 per cent aqueous sulfuric acid + Industrial Methylated Spirits, 1:2, v/v). The cotton wool swabs were then analysed for dye using techniques developed for the analysis of dyed textiles (Walton & Taylor 1991). After swabbing, the sherd was soaked in water for three hours, to remove any traces of acid.

The dye extracts were analysed by absorption spectrophotometry and then thin-layer chromatography. These procedures showed the presence of alizarin, with a trace of purpurin. Alizarin and purpurin are the principal colouring constituents of madder, the red dye derived from the roots of Dyers Madder, *Rubia tinctorum* L.

*Rubia tinctorum* is not a native English plant, but there is evidence that it was being cultivated here as a dye source by the tenth century (Walton 1989, 400–401). It has been speculated that before that date the dye was imported: certainly, the merchants of St Denis, Paris, had established a trade in the dye by the ninth century (ibid.).

Madder staining has been identified on a number of other pottery wares. The earliest appears to be on seventh-century E-ware from sites in Northern Ireland and western Scotland (Walton unpublished a). The source of E-ware is likely to be outside the British Isles and the association of E-ware with madder could perhaps indicate that the one was used to transport the other.

The Christ Church potsherd is the earliest example of an Anglo-Saxon ware stained with the dye, although there are a number of later examples. Madder has been found on sherds from late Anglo-Saxon Thetford (Cole in Rogerson & Dallas 1984, 167), late Anglo-Saxon London (Taylor 1991, 169–170), late Anglo-Saxon and Anglo-Norman Winchester (Walton Rogers unpublished b) and medieval Norwich (Walton Rogers unpublished c). Most of these are also locally made pottery.

The sooting often seen on the outside of these vessels and on the Christ Church sherd (and also on some of the E-ware sherds) suggests that the pots have been used for heating the dye. Most madder-stained sherds come from modestly sized cooking vessels, which would indicate small-scale domestic dyeing, where only a little bit of fleece, or a hank of yarn was dyed at a time. Madder-stained sherds seem to have disappeared from the archaeological record as dyeing developed into a specialist craft and the dyeing of whole cloths became more usual. On the other hand, there are other recorded medieval uses of madder, as a medicament, a colorant for ivory and antler and as a paint (when deposited as a ‘lake’ on a mineral substrate), and any of these would have required a pot and a fire to heat it on.

Scattered flints: lithic analysis during 1996–97
Tania Wilson

Over the past year there has been an increase in lithic studies at Canterbury Archaeological Trust, including both the detailed analysis of assemblages recovered from recent excavations and the examination of lithic material from sites excavated this year. The results of the analysis of flint artefacts recovered from the Monkton–Mount Pleasant excavations and those from the Medway Tunnel site are to be published in the near future.

Rather than reiterate these findings, it is intended here to highlight some of the significant discoveries of the past year.

Lyminge

One of the best assemblages in terms of quantity and content was collected during the fieldwalking programme at Lyminge (see p.22). In all 873 purposely-struck flint artefacts were recovered.

Examination of the condition of the assemblage shows that the artefacts are quite ‘fresh’ and only a small number have slight patination as the result of exposure to the elements. This indicates that the assemblage is almost certainly derived from the vicinity and has moved little from its original place of deposition. As part of the fieldwalking programme all the finds were plotted on a plan of the field in order to determine whether there were any noticeable densities. This exercise demonstrated that there were no apparent ‘clusters’ of flint artefacts and that generally they were fairly well distributed throughout the field. On close inspection, it was evident that over two-thirds of the assemblage had experienced post-depositional damage almost certainly caused by farming practices, such as ploughing. This implies that the artefacts had been redistributed throughout the topsoil, probably over a number of years, hence explaining the general distribution observed.

Overall the assemblage can be divided into the following categories: blades, cores, debitage (flakes and other knapping debris) and retouched pieces (implements). The relative frequencies of these components within the assemblage are shown below:

It is clear that the majority of the assemblage consists of knapping waste and, additionally, a significant number of cores are present. This demonstrates that flintworking was almost certainly taking place within the locality. In addition a small number of chips (flakes less than 15 mm. in length) were recovered. It is unlikely that such pieces would be present had the material been knapped elsewhere and...
Table 1. The Retouched Pieces.

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrowheads</td>
<td>2</td>
</tr>
<tr>
<td>Backed Bladelet</td>
<td>1</td>
</tr>
<tr>
<td>Borers</td>
<td>2</td>
</tr>
<tr>
<td>Burin</td>
<td>1</td>
</tr>
<tr>
<td>Piercer</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous Retouched Flakes</td>
<td>13</td>
</tr>
<tr>
<td>Scrapers</td>
<td>33</td>
</tr>
<tr>
<td>Thames Picks</td>
<td>2</td>
</tr>
</tbody>
</table>

The Mesolithic Thames Pick from North Lane, Canterbury and the Tankerton foreshore

In addition to the Lyminge assemblage, two other artefacts of interest were discovered during excavations this year. The first is a complete Mesolithic Thames Pick which was found during excavations at North Lane in Canterbury (Canterbury’s Archaeology 1995–96). The pick was probably disturbed from deposits close to the river by quarrying during the late first to mid second century and was subsequently dumped into a quarry along with the backfill. The pick measures 178 mm. in length and is made on a shattered nodule originally from a chalk source. The raw material consists of a grey semi-translucent flint with coarse almost cherty inclusions. These inclusions, which do not flake as readily as the remainder of the flint, appear to have been quite problematic for the knapper who nevertheless overcame this and produced this fine implement.

A discovery such as this from Canterbury is important in demonstrating that this location by the River Stour was popular long before urban settlement began.

Lithic artefacts are not solely made from flint and include the use of several other stone types, as is exemplified by the recent find from the Tankerton Foreshore excavations. The implement, a shaft-hole adze, is of particular interest. The adze is incomplete, the break occurring in antiquity, and would have been...
symmetrical in shape. It has an hourglass perforation and appears (by visual examination) to be made from Greenstone. This type of stone is not of local origin and is thought to be derived from a source in Cornwall, but without a detailed petrological examination this cannot be established.

Shaft-hole adzes are relatively rare with only around 265 examples recorded (Roe 1979, 36) but interestingly another example has been recovered from Tankerton (Kelly 1964, 225) which has been petrologically examined and is assigned to Group XVIII, the source of which is thought to be in the Whin Sill of northern England. The importance of the discovery of these ‘exotic’ stone implements lies in the evidence they provide for the continuation of a trade/exchange system established during the late Neolithic period.

All the discoveries made this year, whilst confirming the presence of prehistoric activity throughout east Kent, also embellish our understanding of the nature of this activity and it is through such finds that we gradually become to understand our prehistoric ancestors.

3 Ceramic building material from Dover
Louise Harrison

Although a great deal of Roman brick and tile has been studied from a number of different sites in the past year, more work is required before they can be presented as full reports. The following deals with brick and tile found at Townwall Street in Dover in 1995. The material was residual on a predominantly medieval site but was of intrinsic interest in terms of both its fabric and form.

The material consisted of thirty-five fragments weighing 7.675 kg. It consisted of four brick fragments (3.060 kg.), twenty flue tile fragments (3.325 kg.), two imbrex fragments (266 gm.), three tegula fragments (385 gm.) and three miscellaneous fragments (300 gm.). Although fragmentary, the material did not show many signs of weathering or evidence of re-use, such as mortar on the broken edge of the tile.

The Fabrics

The fabric of the tile has been studied under a 10x microscope. Six fabrics have been identified which can be sub-divided into two groups. Fabrics 1, 2 and 3 are red/orange in colour and have been divided by their sandiness, i.e. number of quartz grains present in the fabric’s matrix. These three fabrics are commonly found in many areas including Canterbury, Maidstone and London. Fabrics d.1, d.2 and d.3 are all fired to a pale colour and share characteristic fine sanding on the back of the tile. They have been divided by the frequency of silty inclusions and the number of quartz grains present within the fabric’s matrix. The material has been recorded by fabric type, which is based on the tile and fabric type series currently being compiled (Harrison in preparation).

Fabric 1

This is a fine, sandy fabric with few large quartz grains; occasional calcareous inclusions are sometimes present. This fabric is very similar to material excavated from two tile kilns in Canterbury at Whitehall Gardens and St Stephen’s Hill (Jenkins 1956; 1960).

Fabric 2

This is a fine non-sandy fabric. Inclusions are rare, consisting of very few, if any, small sized quartz grains. This could be a non sandy version of Fabric 1.
Fabric 3
This fabric has a fine, sandy matrix with a moderate amount of medium-sized quartz grains measuring up to 0.5 mm. across. There are no other inclusions. This could be a sandy variant of Fabric 1.

Fabric d.1
This is a pink coloured fabric. It is not sandy although occasional small (usually white) quartz grains are visible in the matrix. Its main characteristic is its colour, which is caused by its many silty swirls and lenses. Frequent red clay inclusions and white clay pellets are also present. The sanding on the back of these tiles is unusually fine. This fabric is similar to clay found in the central Weald and is presumably a product of a kiln nearby as yet unlocated. A large number of tiles bearing the CLBR stamp have been found in the same fabric (Peacock 1977).

Fabric d.2
This is possibly a variant of Fabric d.1. It is a similar colour and shares the same characteristic fine sanding on the back of the tile. It is not sandy and is not as silty as Fabric d.1 with silty swirls and lenses appearing only occasionally in the fabric’s matrix.

Fabric d.3
This is white/cream in colour and has a fine sandy matrix with few large quartz grains. The characteristic feature of this fabric is the frequent red/orange inclusions (iron oxides) measuring up to 6 mm. Fine sanding is also visible on these tiles.

Table 1 indicates which tile types were present in each fabric type; Fabric d.1 was clearly the most common, appearing frequently usually in the form of flue tile.

The Material
Brick
Only four fragments of brick were retrieved from the excavation. Three pieces (Fabric d.1) bore characteristic keying consisting of wide, deep combing. These bricks appear to be similar to Brodribb’s type 1 (Brodribb 1979). The other fragment (Fabric 1/2) has a faint incomplete signature mark, possibly type 2. The thickness of the brick ranged from 35 mm. to 41 mm., tentatively suggesting that they were probably parts of Bessalis, Pedalis or Lydion bricks.

Flue tile
The flue tiles found in Dover are unusual in their fabric and the keying technique employed. No similar tiles have been recorded in Canterbury at the present time. The most clear and diagnostic keying types are listed below. Unclear or small fragments bearing little keying have not been included; full details are recorded in the site archive.

Table 1: tile and fabric types

<table>
<thead>
<tr>
<th>Fabric</th>
<th>Brick</th>
<th>Flue</th>
<th>Imbrex</th>
<th>Tegulae</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
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</tr>
<tr>
<td>1 NR 2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>1</td>
<td>1</td>
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<td></td>
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<tr>
<td>1 NR 3</td>
<td>1</td>
<td></td>
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<td></td>
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<tr>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.1</td>
<td>3</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>D.1/D.2</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.2</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Descriptions of flue tile types

Type A
This flue type has keying consisting of ‘square’ type lattice scoring. The gap between the scoring measures 20 mm.

Type B
This flue type is combed with lines that cross at right angles forming a series of squares. It is possible that two strokes were used, explaining the wide stroke. 11 teeth, width of stroke: 152 mm.

Type C
This flue type appears to be combed in a lattice type pattern. 3 teeth, width of stroke: 23 mm.

Type D
This flue type has keying consisting of wavy combing. 8 teeth, width of stroke: 51 mm.

Type E
This flue type has keying consisting of one wavy and one ‘straight’ stroke. 9+? teeth, width of stroke: 53+ mm.

Type F
This flue type has very characteristic wide, quite deep, combing. It is not readily obvious what pattern it forms.

One combed flue tile fragment (Fabric d.1) which bore keying type ‘B’, also has a CLBR stamp. This appears to have been applied before the tile was combed which is unfortunate as the stamp is obscured by the combing. The stamp is rectangular and the less obscured C and L appear to be in low relief which tentatively suggests that the stamp might belong to group F (Philp 1981). Several of the flue tiles were unusually thick, measuring up to 32 mm. compared to the average thickness of approximately 12 mm. The reason for this is not clear, although it is likely that they were manufactured for a particular reason. Sooting was visible on the inside of three flue tile fragments. This suggests that these tiles were probably situated near the base of the hypocaust system close to the furnace.
II Human Bone Studies

Introduction
Trevor Anderson

No recognised cemeteries have been excavated during the past year. However, several unexpected burials have been discovered outside known graveyards. These remains, from Canterbury, Chatham, Deal and Dover, are reported below. My only funded cemetery is the large sample of Anglo-Saxon skeletons recovered in 1994, in advance of housing development, at Buckland, Dover. As such, I am conserving my limited funding by working a two-day week. The combination of part-time work and the poorly preserved nature of the material under examination has meant that fewer than usual academic papers have been published (Anderson, 1996a–d, 1997; Anderson & Andrews, 1996, 1997; Anderson & Thomas, 1997; Carter & Anderson, 1996).

1 Buckland, Dover
Trevor Anderson

At the time of writing, most of the skeletons have been cleaned and 200 have been examined in detail. Two males display spectacular cranial weapon injuries, one of which shows evidence of healing and was not fatal (Anderson 1996a). Detailed examination of 168 individuals with teeth is being carried out in collaboration with Dr Jon Andrews, a dental surgeon. As well as examining evidence for dental disease and decay, we are able to study levels of severe childhood stress, as shown by hypoplastic lines of the tooth enamel. Once formed these defects reappear throughout life as an indelible marker of stress during the development of the tooth crown. In many cases, the jawbones have not survived and we are dealing with loose teeth. This allows us to examine, without the expense of radiography, abnormalities in root formation that we hope will provide valuable clues to familial groupings.

2 Canterbury Motor Company
Trevor Anderson

One burial, continuing outside the area of excavation, was unearthed. A damaged skull, mandible (lower jaw) and the upper five cervical (neck) vertebrae were recovered. The remains appear to be those of an elderly female, with a poor standard of oral health. Eight teeth had been lost during life and two of the five available teeth displayed carious cavities. Archaeological evidence suggests a Roman date.

Tegula

Three tegula fragments were present in the assemblage (Table 2). The flange and cutaway types are based on a type series provided by the Museum Of London. The small quantity of tegulae present precludes any meaningful conclusions.

<table>
<thead>
<tr>
<th>Fabric</th>
<th>Flange</th>
<th>Cutaway</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>D.2</td>
<td>2</td>
<td>C</td>
</tr>
</tbody>
</table>

Table 2: Tegulae.

Imbrex

Only two imbrex fragments, both in Fabric type d.2, were present. One of these had an incomplete CLBR stamp on its upper surface. Although incomplete, the letters BR were visible in low relief. The stamp is probably rectangular and can be identified as being of group F (Philp 1981).

Signature marks

Only five tile fragments bore traces of signature marks of types 1, 2 and possibly type 10. They were all incomplete and have not been illustrated.

(See Canterbury’s Archaeology 1995–96, pp. 72–73 for illustrations of signature marks found in East Kent).

Conclusion

As mentioned above, fabric d.1 is very similar to the fabric of Classis Britannica tiles found in past excavations in Dover and elsewhere. Two tiles from Townwall Street bore CLBR stamps and both were in this fabric. The bricks in fabric d.1 bear the same deeply applied keying as those recorded from the Roman villa at Beauport Park, in East Sussex (Brodribb 1979). The flue tiles are also worthy of comment. Most are also of fabric d.1. They were all unusually thick and bore characteristic keying which is probably typical of flue tile in fabric d.1. This suggests that the bricks and tiles in this fabric were probably made to certain specifications for particular uses.
3 Old Dover Road, Canterbury
Trevor Anderson

An isolated inhumation was discovered on this site. The remains consist of skull fragments; loose teeth; fragile long bones; eroded lower spine and pelvic fragments. The bones are extremely gracile and are clearly female. The roots of the third molars (wisdom teeth) are not fully formed, indicating she was only 15–17 years old. The skeleton was lying on its back (supine) with lower arms across the chest. The archaeological evidence suggests that the remains are Anglo-Saxon.

4 St Augustine’s Hospital, Chartham
Trevor Anderson

The inhumation

A single inhumation was discovered. The skeleton was complete and the majority of the bones were solid and well preserved. The body was lying on its left side with the head facing to the left, the left lower arm flexed and the right extended. Both lower limbs were extended with the left leg lying over the right. The remains are those of a male aged 18–22 years, who was only 1.62m (5' 3¾") tall.

The feet displayed an anomalous articulation between two bones, a congenital condition known as calcaneo-navicular bridging. A benign bone tumour was noted in the region of the knee. Early stage joint disease was present in the spine. The left upper arm and the left lower leg displayed muscle markings. Both upper leg bones (femora) present with marked anterior-posterior bowing. The lower leg bones (tibiae) display slight medial bowing of their lower shafts. The lower anterior teeth displayed slight crowding. Two teeth presented with carious cavities. Calculus deposits were more marked in maxilla. There was no evidence for ante-mortem loss or hypoplasia. The right mandibular third molar was impacted.

The overall picture indicates a short stocky individual with poor oral health who had been subject to a rather strenuous lifestyle, with over use of arm and leg muscles before his early death in late teenage/early adulthood. The benign tumours would have been asymptomatic. However, the calcaneo-navicular bridging may have given rise to a painful condition known as peroneal spastic flat foot. In modern clinical practice, as many as half the cases of calcaneo-navicular coalition are symptomatic (Braddock, 1961). The bowing of the leg bones does not appear to be related to malnutrition. It is more likely the result of some activity quite possibly horse riding. Before the advent of stirrups, a rider would need to grip the flanks of his mount quite firmly. Growing bones are quite 'plastic' and would be more likely to mould themselves in response to repeated strain. Although he may have been an habitual horse rider during his youth, he is unlikely to be a Roman cavalryman. According to Vegetius the absolute minimum height requirement for entrants was 5' 8". In addition, the nearest ala was stationed in northern Essex, at Brancaster (Johnson, 1976, 67). However, epigraphic evidence indicates that soldiers as young as 14 years were serving in the province of Britannia (Collingwood & Wright 1965, see inscriptions 502 & 523). As such, he was possibly serving in a part-mounted infantry regiment. By the later Roman period, this would not preclude him from being a native of the province.

There is no evidence of cause of death on the available bones. However, a single inhumation outside a known cemetery coupled with the casual disposition, suggesting a hurried burial, may be indicative of foul play.

The Cremation

A single cremation was discovered. A total of 574 gm. of cremated bone was recovered from the soil within the cinerary urn. Individual fragments up to 18 gm. in weight and 10 cm. in length were recovered. The majority of the sample, some 88 per cent by weight, could be identified. Only one individual was represented. The remains are female. The completion of the roots of a third molar, indicate that she was adult. The presence of a bony outgrowth (osteophyte) on the second cervical vertebra (upper neck region) suggests an older, rather than a younger, individual. However, there are no definite ageing criteria. No other pathology was recognised.

In modern crematoria, somewhere between 1.6–3.6 kg. of bone is recovered from an adult body (McKinley 1989). This suggests that our sample, at best, represents only one third of the body.

However, all skeletal elements, skull; axial; upper and lower limbs, were represented. Compared to the known weights of these elements in a complete body, the arms were under-represented and the skull and axial elements were over-represented. This is probably related to the fact that skull fragments are more easily recognised and the presence of large pelvic fragments has influenced the weight of the axial skeleton.
During a watching brief at York Street, Dover, the mechanical excavator disturbed articulated human bones. Two individuals were recognised on site. Fragments of coffins and associated fittings indicate that the remains were post-medieval.

The first individual was represented by a badly fragmented skull; upper arms; upper spine and the shoulder region. The remains are those of a large muscular adult male. The second ‘individual’ was represented by long bones, pelvic fragments and lower spine. The presence of two left upper legs (femora) indicates that two individuals were present. Both were young adults, a female aged c. 20–25 years and a male c. 18–22 years. There was no evidence of pathology on the incomplete and fragmented bones.

Workmen excavating a large soakaway discovered bones, including part of a human skull in the back garden of a house in Dover Road, Walmer. Archaeological investigation indicated that the remains dated to the Iron Age.

The bones discovered by the workmen indicate that two individuals were present. A full-term foetus/new born child represented by skull fragments, left arm and a fragment of upper leg. A juvenile, c. 13–15 years old, represented by skull fragments; mandible; a rib and lower leg fragments. A search of the available spoil by the archaeologists unearthed further foetal/new born bones, pelvic fragments and a skull fragment as well as two juvenile feet bones.

Recent excavation at Townwall Street, Dover has revealed a series of early medieval wooden buildings. In two of the buildings, a most unexpected discovery was the presence of a burial of a foetal/new born child. In building 33, the grave was dug parallel to, and in close proximity to, the north-west wall, furthest away from the street. The grave was well cut, subrectangular with near vertical sides. The skeleton was buried supine and extended with both arms by its side. The lower half had been cut away by a later feature. The available bones were solid and well-preserved.

Articulated human foetal/new born bones were recovered from building 7, some 20 m. to the north-east on the same street frontage. In this case, the grave was a shallow circular pit. The feature was adjacent to the south-west wall, some 1.5 m. from the north-west wall. The gravel fill contained numerous blocks of chalk rubble and the skeleton was lying at an angle of c. 60°. It appears that body was unceremoniously deposited in a grave that was too small. No doubt, the difficulty of digging through the chalk was responsible for the inadequate grave. The skeleton was practically complete and the bones solid and well-preserved.

In both cases, the graves were sealed by later floor levels, indicating that the buildings continued to be occupied for some time after the burials had taken place. Metric examination indicates that both individuals are either full-term foetal or new-born. There is no evidence of cause of death on the bones and no sign of surgical intervention.

The medieval cemetery of St James was only 100 m. from these houses. It is possible that the parents were too poor to pay for a churchyard burial; or perhaps, more likely, the children were still-born or had died before they could receive baptism and were therefore excluded from the cemetery. The Council of Canterbury (1236) and the Council of Troyes (1310) indicate that it was unlawful to bury a female until the foetus had been cut out. The latter emphasised that a dead child was not to be buried in consecrated ground (Blumenfeld-Kosinski 1990).

Environmental work was concentrated on the excavations at Townwall Street in Dover and at Christ Church College in Canterbury.

The deposits which had accumulated during 150 years of occupation of the medieval tenements in Townwall Street contained huge quantities of excellently preserved bones, especially of fish, together with charred plant remains and fragments of eggshell, shellfish and crabs. Samples of soil were taken and sieving carried out to maximise the recovery of this material. This whole assemblage is extremely valuable as it is unusual to recover such a closely dated and well stratified sequence of floor deposits. The fish and plant remains are of particular interest and no other work has been published in south-east England outside London for assemblages of this date.

It is clear that the structures excavated in Townwall Street are connected in some way with the fishing industry, and that fish were an
Important part of the diet of the inhabitants. There are an estimated 75,000 identifiable fish bones from the site. All fishes seen are marine. Herring bones were abundant in almost all samples along with those of cod and conger eel. Mackerel, thornback ray, gurnard and garfish were common, and scad and sea bream were present in smaller numbers.

Further analysis of the fish bones will not only aid interpretation of the site, but will also help our understanding of the early development of the port of Dover, and the English fishing industry. It will, for example, reveal whether fish were processed in the buildings, either for consumption by the inhabitants or for transport elsewhere, or whether the remains recovered represent culinary use only. Comparison of bones from the floors with those recovered from general dumps of rubbish may also provide interesting data. The relative importance of inshore and deep sea fishing to the local community can be assessed, and information may be obtained on both fishing and fish processing techniques.

Mammal remains from the site were predominantly the usual large domestic species, but the assemblage does contain some surprises, notably the tooth of a hippopotamus which appears to be contemporary with the deposits rather than a fossil from Pleistocene deposits which are present in the area. The range of seabirds present suggests that some birds may have been caught at sea while following fishing boats for offal.

Excellently preserved charred plant remains and a smaller quantity of mineralised material probably derived from cess were recovered. Cereal grains, nut shells and seeds of crops grown either for human or animal consumption were recorded. Brewing may have been important at the site. Evidence for this comes from finds of substantial quantities of sprouted barley and oat grains from a hearth which suggests that grain was being malted. Malting is a necessary precursor of the brewing process. Interestingly, grains of darnel (a type of rye grass) were present in some samples and some of these were also sprouted. Darnel has a toxic effect when eaten as a contaminant in wheat flour, causing a range of symptoms including vomiting and diarrhoea, but it was sometimes deliberately malted with barley to produce a very strong type of beer – hence the French name ‘ivreai’ for this plant (ivre = drunk, inebriated).

Conditions on the site were not ideal for the preservation of pollen, but samples taken from some of the floor layers did contain pollen which suggests that cereal straw may have been strewn as a floor covering.

The sheer quantity of bones and other remains both in the floors and in the dump deposits give some idea of what living conditions in the tenements would have been like. The dwellings would presumably have been cleaned out from time to time, but many of the smaller remains where pressed into the earth floors or perhaps covered by a fresh layer of straw. Mice and voles were fairly common on the site – there was obviously plenty of food available for them. One feature produced eggs of a nematode worm which have been tentatively identified as a species which infests the urinary tract of rats with the eggs being passed in the urine. Dumping of rubbish on the ground surface rather than in pits would have made the area rather smelly. Faecal concretions and faeces-coated stones were present among material recovered from these dumps suggesting that cess-pits and tanks were also emptied into these layers.

The charred plant remains have been examined by Gill Campbell, Environmental Archaeology Unit, University Museum, Oxford; the pollen and intestinal parasite eggs by Patricia Wiltshire, Institute of Archaeology, University of London; fish remains by Rebecca Nicholson, University of Bradford; mammal bones by Robin Bendrey; and bird remains by Enid Allison.

The information on the plant and animal assemblages has been taken from their assessment reports. Further analysis of remains is proceeding.

**Christ Church College, Canterbury**

Enid Allison

Sampling at Christ Church was on an industrial scale with approximately 30 tonnes of soil being sieved from the site, most of it by David Knight. This massive sampling programme was implemented not only to enhance the recovery of small bones and other biological material, but also to recover the full range of slag and hammerscale present in the deposits associated with Anglo-Saxon metalworking operations. Charcoal, much of which would have been used to fire furnaces, was also recovered from many layers.

The extensive sampling carried out has enabled us to recover a range of small artefacts such as beads, glass and small metal objects which were not retrieved from hand-excavated contexts. We have still not completed the sorting of the residues from the soil samples and so our work is in a less advanced state than with the previous site. Remains recovered so far are being assessed at the time of writing. A range of mammal, bird and fish bones was recovered, analysis of which will provide insights into the diet and economy of both Anglo-Saxon Canterbury, and from the medieval use of the area in association with St Augustine’s Abbey. It will be possible to compare results from the later deposits with data obtained from St Gregory’s Priory in Canterbury.

We are indebted to numerous volunteers and work experience students who have helped with the task of sorting through the dried residues from both Townwall Street and Christ Church College, and especially to Ingrid Corke, Bob Robson and Krystyna Zaleska whose painstaking work over a considerable period of time has been invaluable.