

The **COLCHESTER** ARCHAEOLOGIST

WARRIOR
GRAVE

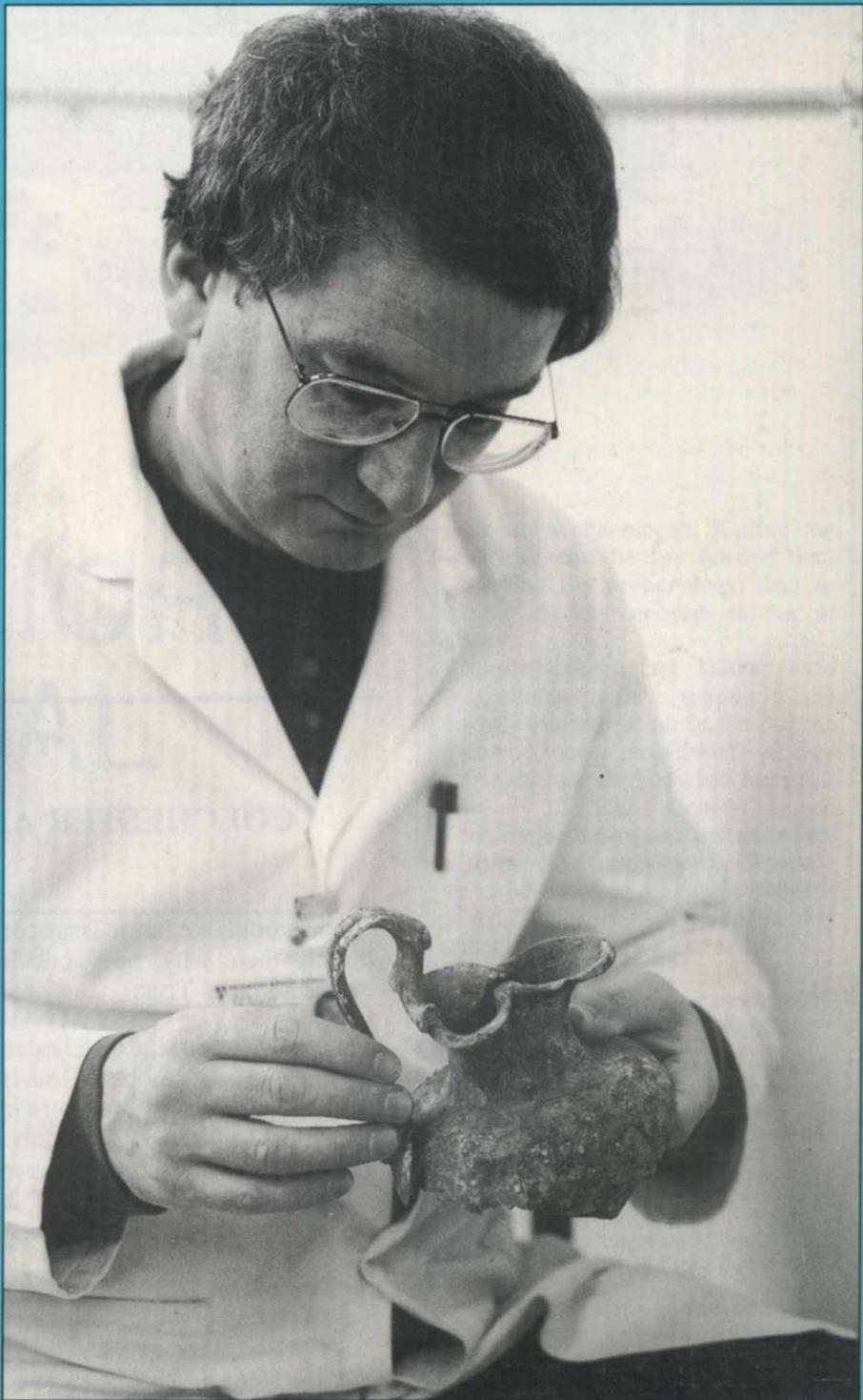
CHIEFTAIN'S
BURIAL AT
ST ALBANS

BREATHING
NEW LIFE INTO
OLD BONES

AROUND ESSEX

ARCHAEOLOGY
FOR YOUNG
PEOPLE

Issue Number 6 (1992-3)



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THE FRIENDS OF THE COLCHESTER ARCHAEOLOGICAL TRUST

Cover: Dr Paul Sealey, Assistant Keeper of Archaeology at the Colchester Museums, holding the copper-alloy jug from the Warrior Grave.

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WARRIOR BURIAL

Right to the end, the Stanway site continued to provide surprises. This time it was the remarkable grave of an Iron Age warrior who died during the early years of the Roman occupation.

For an archaeologist, finding the money can be far harder than finding the archaeology. And so certainly it has proved to be at Stanway...

English Heritage and Tarmac were very generous in their support of the Stanway excavations but in the end the site proved more complicated and thus more costly than anybody had expected. Fortunately the Essex County Council and the Essex Heritage Trust were both able to provide timely grants to enable more to be achieved whilst the site still survived. But the most spectacular find was that of the 'Warrior Burial', made as a result of a last-minute grant of £500 from the Essex History Fair. In terms of value for money, this must rate as one of the most effective £500 spent on excavation in Britain in recent times.

Earlier work

Readers of last year's *The Colchester Archaeologist* will recall the discovery of the burial place at Stanway and how

Above: a hypothetical reconstruction of the funeral of the 'warrior'. By Peter Froste.

the main phase of the excavations led to the uncovering of the remains of remarkable wooden burial chambers intended for members of the native aristocracy. These had each been as large as a small room and contained the remains of a rich collection of grave goods which had been ritually smashed and scattered throughout the backfill of the chamber. Cremated human remains were also sprinkled throughout the backfill, and the chambers themselves seem to have been broken up as part of the ritual. The burials date from the late 1st century BC to AD 60 or slightly later — in other words they belong to the period when the native stronghold of Camulodunum was at its most important and overlapped the arrival of the Romans by two decades or so.

Each of the chambers had been placed symmetrically in a large enclosure which was up to 80 m across and demarcated by a ditch. In all, there were five enclosures forming two rows, one of three and the other of two.

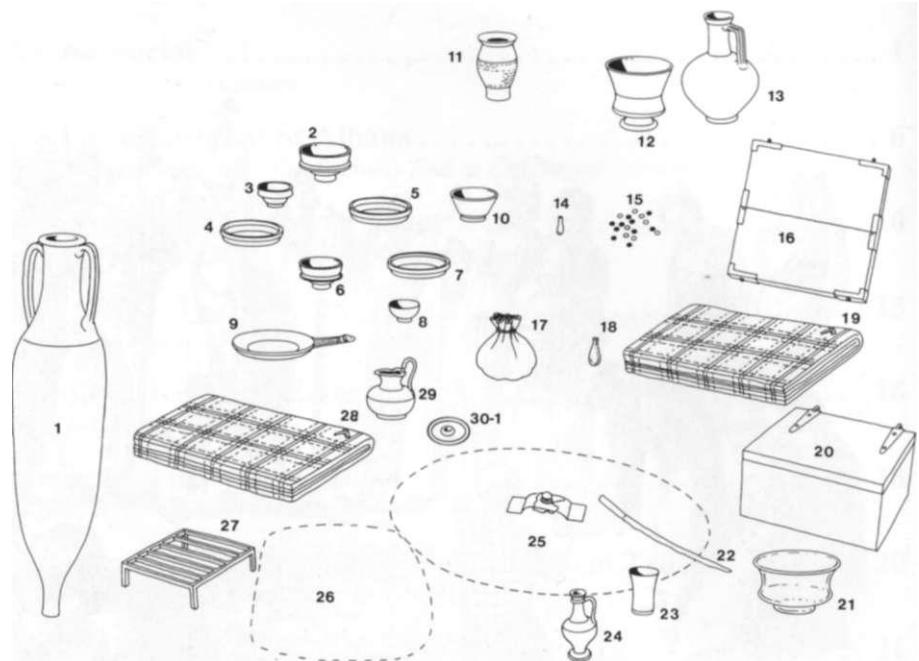
The 'Warrior Burial'

Just as the quarry-face was to be moved over the site, the grant from the Essex History Fair provided a last-minute opportunity to strip the site once more and search for unexcavated features. With the aid of machinery provided free by Tarmac, the work took place on a single day. The results were extraordinary — two small grave-pits, one containing an exceptionally rich collection of grave goods.

The largest pit was 2.0 by 2.6 m in area and 1.0 deep. Although box-like in shape, there were no indications that the pits had contained wooden chambers. They seem to have simply been square unlined pits on the flat bases of which were placed the cremated remains and other objects.

The richest of these, our so-called 'Warrior Burial', contained over twenty vessels of pottery, metal, and glass, a set of glass gaming counters, a possible gaming board, a small wooden casket or box, two brooches, woollen textiles, a large blue and white glass bead, a copper-alloy armlet, a spear, probably a shield, a large wooden box, and possibly a gridiron (used for cooking on).

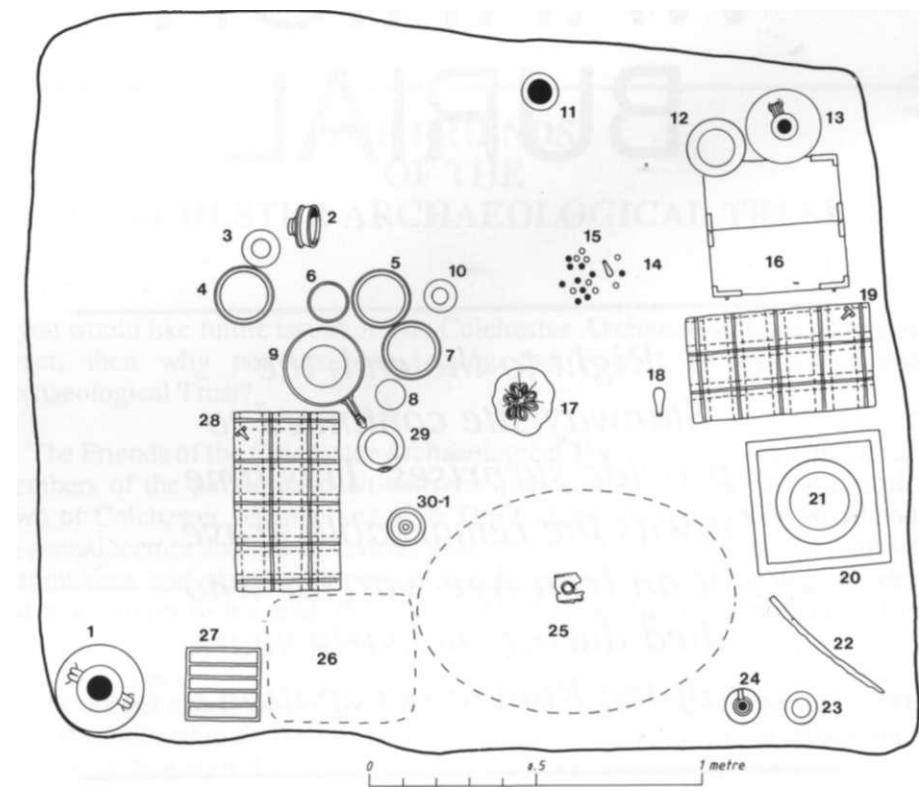
The vessels included a jug and a handled pan of copper-alloy, two glass phials, and an unusual amber-coloured glass bowl. The pottery was practically all imported, mainly from Gaul, but included a wine amphora from Pompeii. One of these pieces (a slip-decorated jug from Central Gaul) was decorated in

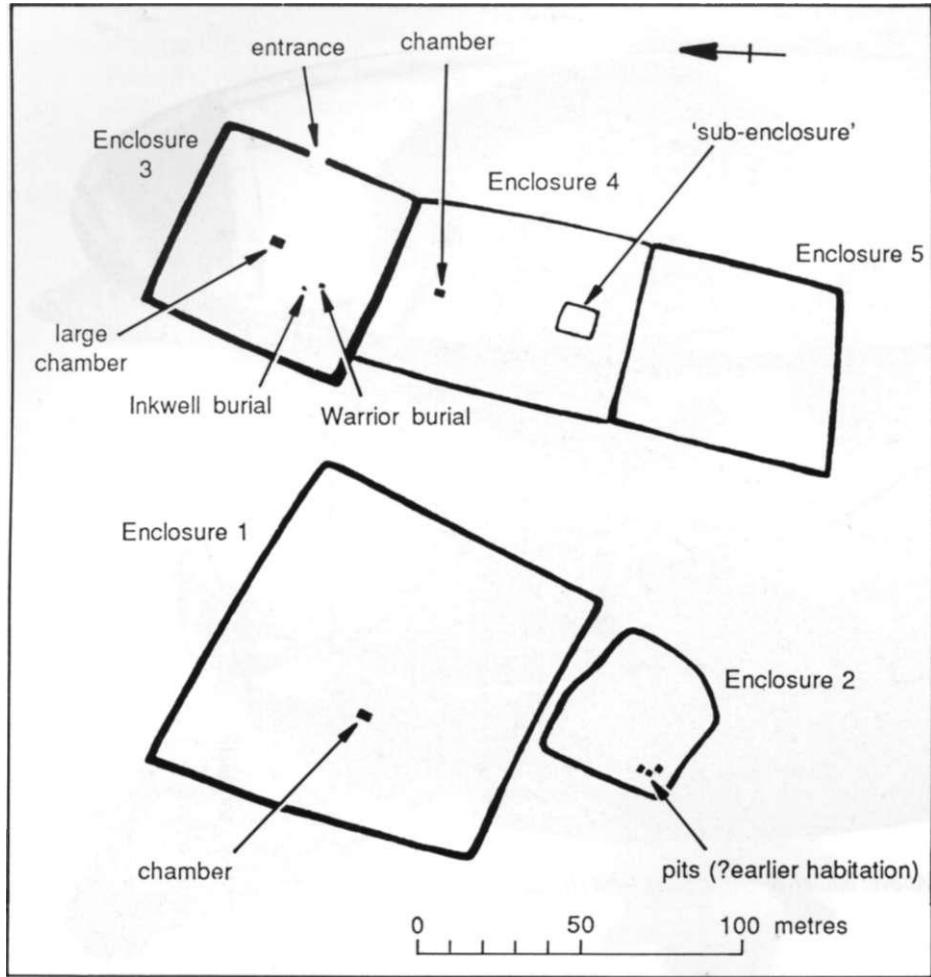


The objects with the 'Warrior Burial'.

1 amphora (from the Pompeii region), 2-7 pottery vessels (terra nigra from northern Gaul), 8 pottery bowl (terra rubra from northern Gaul), 9 copper-alloy flat pan (continental import), 10 pottery bowl (terra sigillata from southern France), 11 pottery beaker, 12 pottery bowl (terra rubra from northern Gaul), 13 pottery flagon, 14 blue glass phial (continental import), 15 white and dark blue opaque glass gaming counters, 16 ?gaming board, 17 cremated bones in ?bag, 18 clear glass phial (continental import), 19 brooch with ?cloak, 20 wooden box, 21 amber glass bowl (from Italy), 22 iron spearhead, 23 pottery cup (terra sigillata from central Gaul), 24 slip-coated pottery jug (from central Gaul), 25 ?shield, 26 wooden object (furniture), 27 gridiron, 28 brooch with ?cloak, 29 copper-alloy jug (continental import), 30-1 copper-alloy armlet and glass bead.

Below: the objects as they lay in the pit for the 'Warrior Burial'.





Below: probable boss from the centre of a wooden shield.



relief with three wading birds (such as storks or herons) placed evenly around its girth. The presence of the shield is deduced from the 'boss'. This is made of copper-alloy sheet on an iron frame and would have formed the central part of the shield, the main body of which would have been of wood and no longer survives.

The 'open' vessels (ie the plates, cups and bowls) had been grouped near the centre of the grave next to the copper-alloy pan and jug. These formed a dinner service in which some vessels could be nested. The other vessels were 'closed' and would have been used for the storage of food or presentation at table. These were placed around the edge of the grave-pit.

Unlike the material in the chambers, all the items appear to have been intact when placed in the grave. The objects were carefully arranged on the floor of the pit around the cremated remains which had been placed in the centre, presumably in a cloth or leather bag. Despite the evident care with which the objects had been arranged, many of them were subsequently smashed where they lay. The copper-alloy jug ended upside down and the iron head of the spear was bent.

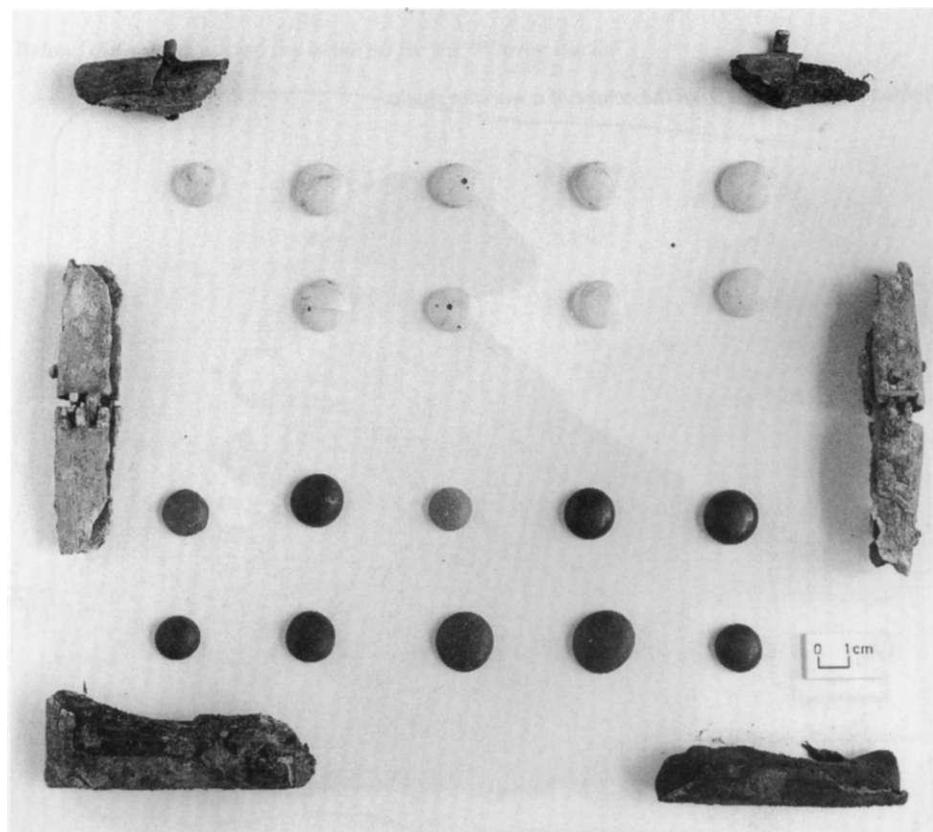
The gaming pieces were made of glass. There were nineteen in all, ten translucent dark blue (some almost black), and nine opaque white. There may have originally been a tenth white piece but this was not found. (We kept all the spoil from the pit and it is being sieved in the hope that if there is a missing piece it can be recovered.) The gaming board was wooden with corners reinforced with copper-alloy strips. Four interlocking pieces were found nearby suggesting that the board was made in two pieces.

It is not possible to tell what game could have been played with these pieces. Presumably it was a game between two players, and the absence of dice suggests a strategy game such as soldiers or nine-men's morris, both of which needed two sets of nine pieces. 'Soldiers' (known as *ludus latrunculorum*) was a battle game requiring great skill. The pieces were used like a rook in chess — they could move forwards, backwards and sideways, but not diagonally — and the aim was to capture your opponent's counters by trapping them one at a time between two of yours. Boards for three- and nine-men's morris are known from the Roman period in Britain. These games are a development of noughts and crosses. In three-men's



Above: amber-coloured glass bowl (Italian).

Below: glass gaming pieces with the remains of the probable board (copper-alloy corner pieces and four interlocking pieces suggesting that it may have been a folding board).



morris there is a squared board with nine points. Each player has four pieces and takes turns to place one on the board, the object being to be the first to get a row of three pieces. In nine-men's morris each player has nine pieces, and the rules are more complicated, but the aim was still to get three pieces in a row.

Another smaller grave-pit was near by. It was around the same depth but only 1.6 m square. Finds were comparatively few, consisting of a brooch, a pottery flagon, the remains of a possible bucket, and a small inkwell. The last of these objects is of special interest since it provides evidence of literacy.

Burial place of kings

Although other examples of this kind of burial rite probably occurred in Colchester, it must nevertheless have been a ritual awarded to only the most important people. The only other clearly comparable example of this kind of burial in Britain was recently discovered at St Albans (see pages 6-9.) In this case, the quality of the grave goods, the size and complexity of the chamber, and the pivotal position of the site in relation to the Roman town suggest that this was the burial place of a native king. The same cannot be said to be true of the Stanway burials although they must presumably belong to the next social tier down — ie close relatives of the kings.



Above: copper-alloy flat handled pan

Below: close-up of one of the fragments of textile adhering to the jug and elsewhere. The cloth seems to be wool, woven in two-over-two weave. Note the distinctive herring-bone pattern.
Photograph by Anne-Maria Bojko.



Remains of the inkwell from the 'Inkwell Burial'.

The famous Lexden Tumulus was excavated in 1924 and must be the burial place of a native king. A re-assessment of the excavation by Jennifer Foster about ten years ago led to the suggestion that there is some evidence of a large wooden mortuary chamber under the barrow mound. She re-dated the grave to c 15-10 BC, thus making it conceivable that it was for a king called Addedomarus, known from the coins he struck at Colchester. The grave goods are exceptionally rich and include gold cloth, items of furniture, pottery vessels, copper-alloy figurines, and a chain mail apparently with a leather under-garment. Like the graves at Stanway and Verulamium, many of objects seem to have been deliberately broken or cut up.

The recently-found Warrior Grave and the smaller grave nearby were in the corner of the enclosure containing the largest of the chambered burials. The fact that they shared the same burial area could be taken to suggest that the two people concerned had been close associates of the owner of the chambered grave, except that the pottery and other objects in the graves show that the two small graves post-date the chambered grave by ten to twenty years or so.

One reason why the Warrior Grave is of great interest is because it is of someone who died a short while after the Roman invasion. That he was buried with arms suggests that he enjoyed a favoured status with the Roman authorities, and the fact he was buried with a wine amphora and an elegant glass bowl, both of which came from Italy, shows that he had no qualms about enjoying the finer things of life which the Romans could provide.

Chieftain's burial at St Albans

The rich burials from Stanway were the first of their kind to be recognised in Britain. Yet within months a similar, even richer grave was found at St Albans. Ros Niblett, Keeper of Field Archaeology at St Albans Museums, describes this remarkable discovery.

The earliest chartered towns in Roman Britain were the *colonia* at Colchester and the *municipium* at St Albans (Verulamium). In AD 61 when the Roman historian Tacitus tells us that London was merely a trading post, Colchester and Verulamium were already established as 'Roman' towns. In the past there has not been much direct comparison between the two towns, but recent excavations have revealed closely similar burial rites among the local aristocracy suggesting that in the mid 1st century AD there were close links between the two.

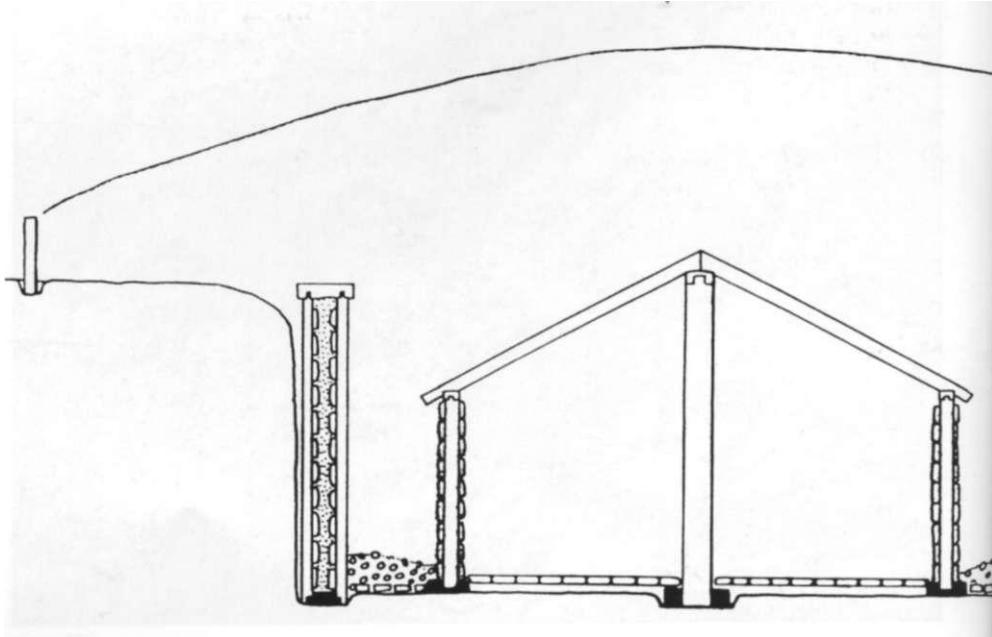
At Verulamium, burial within square or rectangular ditched enclosures was a well-established practice in the 1st century AD. In 1966-8 Dr Stead of the British Museum excavated a large late Iron Age/early Roman cemetery a short distance outside the south-west gate of

the Roman town. This cemetery contained six square enclosures dating from between c 10 AD and 70. In each enclosure a comparatively wealthy cremation burial was found in the centre, with less well-provided graves grouped round it — the central pre-eminent burials have been seen as those of family heads, and the other burials those of lesser family members.

During the winter of 1991-2, the Verulamium Museum undertook a rescue excavation over 8 acres of former allotments a short distance outside the north-east gate of Verulamium. This was an area where no previous Iron Age or Roman occupation was known, and so it was something of a surprise to find a large rectangular enclosure covering 5 acres on the crest of the hill overlooking the river valley and the site of the Roman town.

When first excavated, this enclosure looked as if it might mark the defences of a small Roman fort, but further excavation soon dispelled us of this idea. In the centre of the enclosure, where, had it been a fort, the headquarters building would have stood, was a large pit, over 10 metres square and nearly 3 metres deep.

In the base of the pit were remains of a rectangular timber chamber (3 x 4 m), resting on sleeper beams, and with two substantial uprights which had presumably supported a ridged roof. The sides of the pit had been revetted with a double wall of horizontal boards supported by regularly-spaced uprights. The space between the double wall was packed with clay and gravel, resulting in an exceptionally strong and durable wall

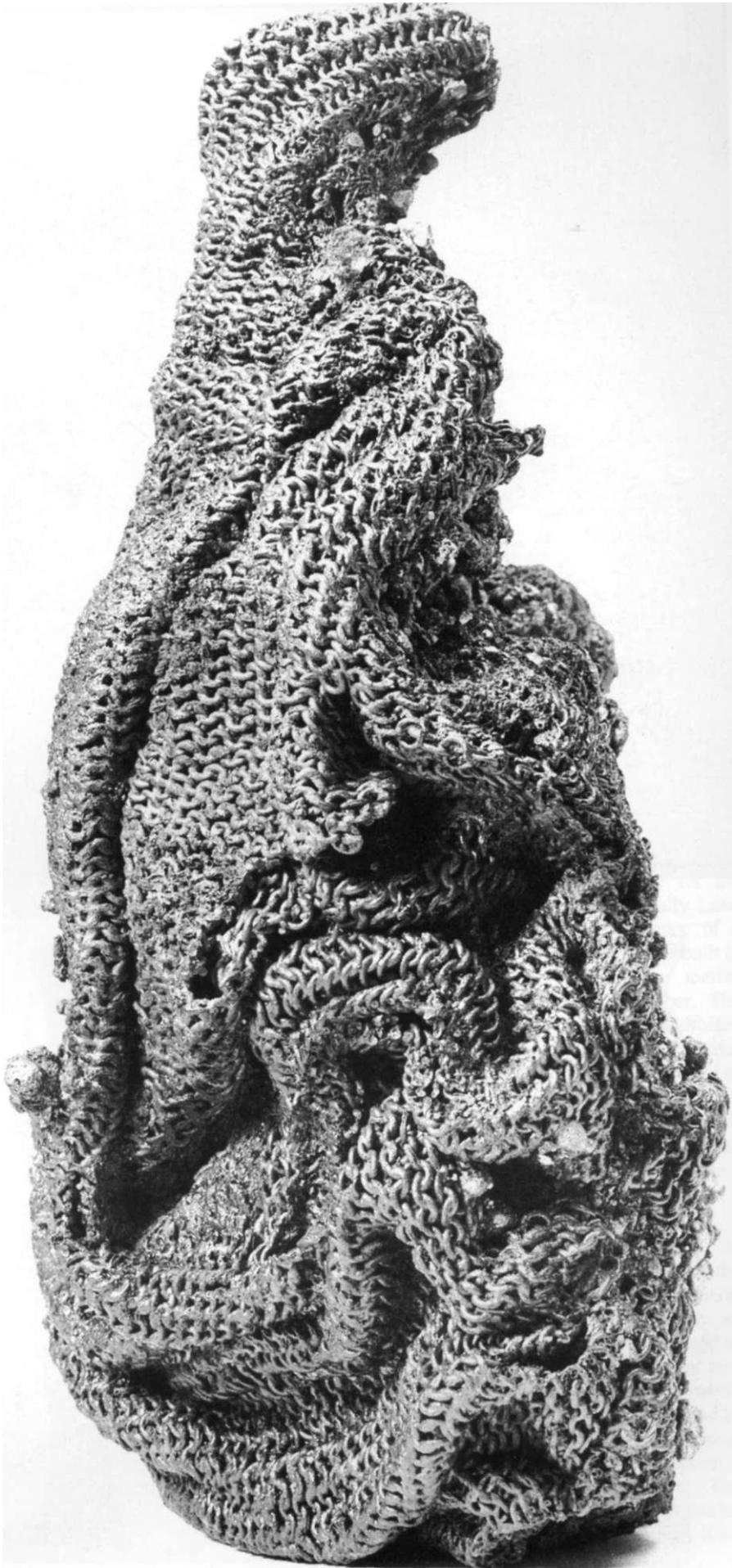
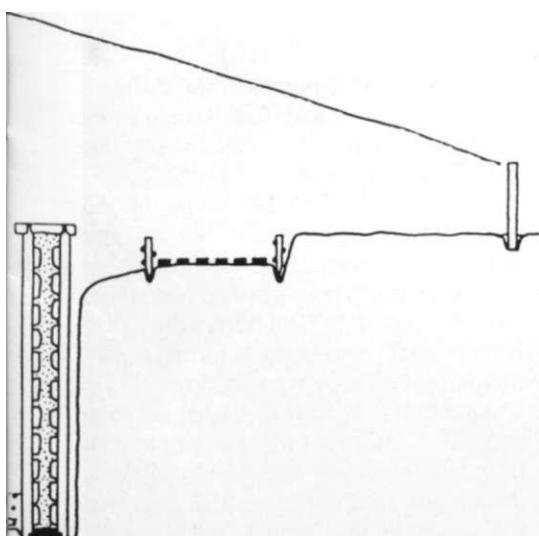


which would certainly have allowed the pit to remain open for several years if necessary.

However, it is unlikely that the pit was open for so long, as it appears that, like the Stanway chambers, the Folly Lane chamber was used for ceremonies connected with the funeral of a high-ranking aristocrat. Half a metre east of the main pit was a much smaller pit, containing a cremation burial. The cremated ashes have not been studied yet, but they appear to be those of an adult male. He was accompanied by a collection of exceptionally rich grave goods. Unfortunately these had nearly all been burnt on the funeral pyre, so that many of the objects had been damaged beyond recognition. Nevertheless, sufficient survived to show that the dead man had been provided with a substantial collection of bronze and silver objects, including items of horse equipment decorated with enamel, silvered bronze vessels, and a complete tunic of iron chain mail. Other finds include over 400 grammes of solidified molten silver and the remains of furniture, including what appears to have been an ivory couch. Scattered across the floor of the chamber, and in the filling of the cremation grave were fragments of 30 cups and platters,

Right: the chain mail after conservation. Its strange shape is possibly the result of having been buried tied up in a bag.

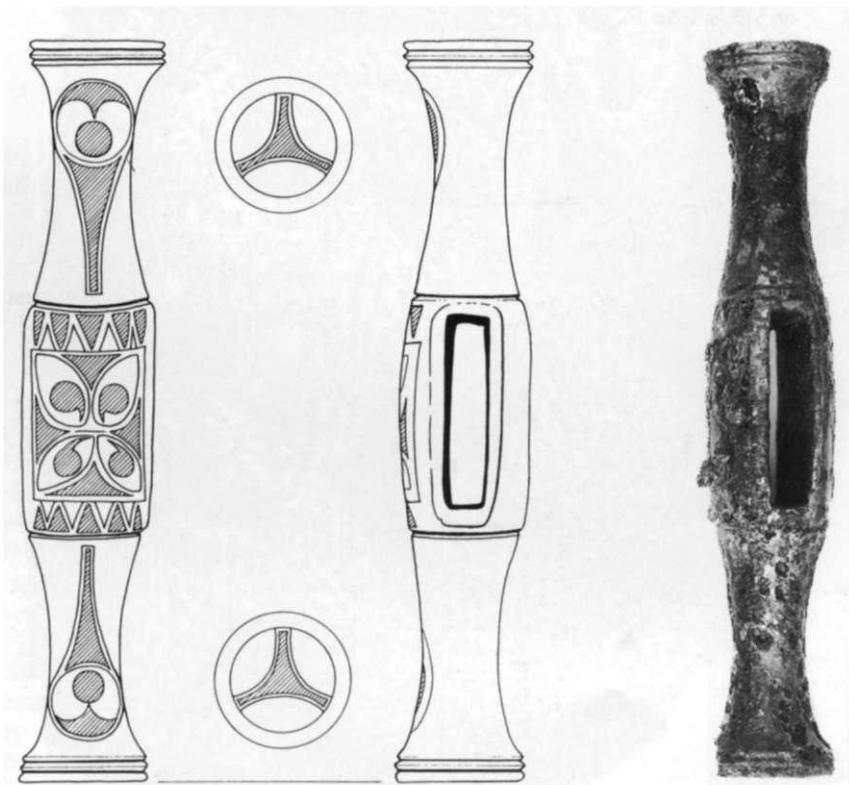
Below: restored cross-section showing the mortuary chamber, revetted pit and burial pit.





Above: the large pit at an early stage of the excavation. Black stains left by the decayed wood of the revetment are beginning to emerge on the left-hand side of the pit.

Left: the toggle, showing details of the enamel decoration.



most of them imported from different parts of France, and four Italian wine amphorae; like the metalwork this pottery dates from about AD 50.

Immediately after the burial of the ashes had taken place, the timber structures in the main pit had been smashed up and both pits had been filled with a deposit of laid turf, which had been piled up over them to form a square mound, revetted by wooden posts.

Although it is clear that what we have at Folly Lane is a further example of a mortuary chamber and burial within a rectangular enclosure, it is also clear that this was more than just a burial place; the site also had a religious importance that



Above: the inlaid bridle bit.

Below: the burial pit during excavation.



persisted for several centuries. At the entrance to the enclosure were three inhumations which had been placed on the unsilted floor of the ditch immediately after it had been dug. These almost certainly had a ritual significance, and are reminiscent of human remains found on religious sites on the continent. At Ribemont and Gournay, two sites in northern France, human and animal remains were exposed in ditches surrounding late Iron Age shrines. However, conclusive evidence for the religious importance of the Folly Lane site is provided by the presence of a Romano-Celtic temple which was built in the late 1st century AD, a few metres north of the burial and chamber. The masonry footings of this temple indicated that it faced south-east towards the burial and the mound that had been built over it. The temple was used at least until the early 3rd century, and may only have fallen into disuse with the rise of Christianity in the later Roman period.

Acknowledgements

The Folly Lane excavation is still in the process of post-excavation assessment, so this description is very much an interim account. The writer is indebted to G B Dannell, I M Stead, V Rigby and I Thompson for their interim comments particularly on the material found, and to the developers, a consortium of housing associations led by Westbury Homes, who financed the excavations. The drawings are the work of Alexandra Thome, and the photographs of Kate Warren.

Breathing new life into old bones

Rosemary Luff has just completed her long and detailed study of the huge quantity of animal bones from the Colchester excavations of 1971-85. Full publication is expected in 1993, but in the meantime Rosemary gives an idea of just how informative bones can be...

Why study bones?

Animal bones from excavations can yield a wealth of information about the animals themselves, the people who kept or hunted them, and the environment they lived in. Most bones come from refuse pits and dump or midden levels associated with houses, and are usually the remains of animals butchered, cooked and eaten as part of the diet of the town's early inhabitants.

Simple species identification can tell us which animals were exploited for their flesh, and comparison of this information between sites and over time can point out, for example, social and economic differences between areas of Roman Colchester, between the colony and the surrounding tribal territory, or even the whole province, and between the Roman and medieval town.

Studying the age and sex of food animals can tell us how old they were

when they were butchered, which in turn provides information as to whether they were kept for their flesh or for something else. Primary animal products are meat, horn, bone, hide, fur, sinew, and gut. All these come from the dead animal, while secondary products such as milk, wool, manure, eggs, feathers, and traction (muscle-power) come from live animals.

This sort of information paints a picture of early animal husbandry, which can be enlivened by the questions answered by a more detailed study of the bones. Did the size of the animals vary at different periods? If so, does this suggest the exploitation of different breeds, or a change in size because of improved, or inadequate, diet? Were cattle used as draught animals? Were there any signs of disease or injury?

The bones of wild birds and deer can illustrate the environmental conditions around Colchester in different historical periods, and can show if hunting was

essential in the provision of food for the townsfolk, or if it was just a casual pastime. The identification of fish bones tells us if fishing was an important local industry, and if the types of fish caught and eaten changed from one period to another. We should not forget the non-food animals whose remains are also sometimes found — pets, such as cats and dogs, and working animals, dogs again, and horses.

Sixty-six thousand mammal bones were identified and recorded from Roman and medieval Colchester, mainly from cattle, sheep, goats and pigs which were slaughtered for human consumption. The bones of domestic fowl numbered 5,139. Although deer bones do occur, their numbers suggest that hunting was not a popular activity, but finds of hare, woodcock, partridge, and pheasant indicate the occasional snaring and trapping of game. Horse remains are scarce in both periods and there is no evidence that horse-meat was consumed in either Roman or medieval times.

The Roman period

The bones of wild birds excavated from Roman levels in Colchester give us details of the environmental conditions prevailing nearly two thousand years ago. The town was evidently situated near marshes and densely-vegetated meadowland. Black-tailed godwits, mallards, whimbrels, wigeons, lapwings, tufted ducks, teals and curlews occurred in the marshes and meadows, and in winter often fed along the mudflats of the sea-shore. Many of these species can still be seen today in the countryside around Colchester. The common crane, *Grus grus*, now extinct in Britain, inhabited bogs and wooded swamps and, outside the breeding season, could be found in marshes and on sand-banks. The corncrake was widespread in meadows and fields where it could find shelter in tall grasses, while woodcocks preferred woods with bogs and wet ground.

The number of red deer bones recovered from the Gilberd School and other sites is low in comparison to those of roe deer, and this difference may be a reflection of the local environment. The roe deer, *Capreolus capreolus*, is the most widely-distributed European deer and is usually thought to be more adapted to life in woodlands than the red deer, *Cervus elaphus*. However, recent studies of red deer have pointed out that very few modern herds limit their range to open countryside.

Bones of wild birds and deer from

Colchester show that the contribution of wild-fowling and hunting to the townspeople's diet was negligible, with the exception of the Gilberd School site, which is characterised by the highest incidence of roe deer found on any excavated site here, particularly during c AD 44-60/1. These years cover the period of occupation of the legionary fortress and the establishment of the colony, before farms became well established and large herds could be built up, so an increased dependence on hunting is probably to be expected.

For most of the Roman period red and roe deer were exploited not for meat but for their antlers, from which many essential household and commercial items could be made, such as needles, hairpins, combs, dice, tool handles, and weaving implements. Red deer crania, complete with sawn-off antlers, were excavated at Culver Street from early Roman levels.

The skull of a roe deer with what has been interpreted as a hunting injury was found in Room 2 of Building 96 at Culver Street and is dated to AD 75-100. Bows, arrows, knives and hunting-spears were used in Roman stag-hunts; part of a weathered relief from Jarrow shows an archer with his bow and arrow stalking a stag.

The scarcity of hare bones shows that they, like deer, were rarely trapped for either their meat or their fur. Even more unusual finds were two bear bones, identified from late Roman levels at Balkerne Lane and Butt Road. These isolated finds could be the remains of trophies or animals used in bear-baiting, since bears have been infrequently found in southern Roman, Britain.

In contrast to the medieval period, Roman fish remains were not abundant. Since the same sieving procedures had been applied to both the Roman and medieval contexts, the low number of fish bones in the Roman period is perhaps significant and may be related to the manufacture of fish sauce (*garum*). Recent research has shown that the sea-fish eaten by Roman Colcestrians included herring, plaice, flounder, and mackerel, mostly inshore or shallow-water species that could have been caught locally in the Colne, its estuary and environs. Only two freshwater species were exploited, the eel and the salmids (salmon and trout). Out of season, salted and dried fish may have been consumed.

Pork was a popular item of fare in the town throughout the Roman period, with lamb also much favoured. However, the



Above: Rosemary Luff at work in her laboratory.

Below: the top of the skull of a roe deer pierced by a small hole which is thought to be the result of a hunting injury. Roman, 1st century.



carcasses of cattle were much larger, and, bone for bone, would have provided a substantial proportion of the meat consumed.

There is also strong evidence that, during the 1st century, dietary differences existed between the residents of the suburbs and those within the walls. Ageing evidence has intimated that the residents of certain areas enjoyed the consumption of more tender joints of beef, lamb and pork. Mutton was eaten at Balkerne Lane, while lamb was popular with intra-mural inhabitants at sites like the Gilberd School.

Perhaps the single most important point to emerge from Roman bone analyses is the dominance of cattle in the faunal record. This holds true for Colchester, and here is related primarily to the intensity of arable agriculture. The extensive cultivation of the land necessitated an input of traction power which could only be supplied by oxen. Thus, vast quantities of cattle bones on an urban site do not necessarily indicate dependence on cattle as a food item. The age structures, and indeed the pathologies, of the individual samples under analysis provide the vital clues in assessing whether the beasts were primarily raised for food or for muscle-power.

Minor lesions (damage) sometimes observed in cattle hip joints appear to be caused by over-rotation of the hip, almost certainly due to the use of the animal for traction. The lesions always occur in the same place, the point where the force would be on the pelvis when the limbs are in the direction of maximum thrust. Approximately one per cent of the Romano-British sample of cattle hip joints exhibited this pathology while none were observed in later periods. Since the Colchester Romano-British cattle were mainly mature, these lesions are possibly age-related. However, as they are always found in a very specific area, and are not accompanied by osteophytic growths (degeneration of the bone which progresses with advancing age), it is considered that they represent the use to which the animals were put rather than their age.

There is no evidence from Roman Colchester that cows were kept for their milk, although most of the Roman cattle were identified as females. Adult beasts were mainly killed and eaten at about three years old, or in the later Roman period, at twenty-four to thirty months.

Dietary evidence points to a major difference in the utilisation of animal products between Colchester and other

sites in Roman Britain. The colonists demanded tender meat from young animals, a preference which increases throughout the Roman period. It is particularly noticeable with lamb, and to a lesser degree with beef and pork.

Unlike cattle, where consumption was sometimes a secondary consideration after traction, sheep eaten in Roman Colchester were not the by-products of wool production. This can be deduced from the age of the animals at death. In general, Romano-British urban, rural and military archaeological sites show that the main trend in sheep exploitation was to kill the animals between their second and third years, presumably for meat. However, the peak age of slaughter of sheep in Roman Essex was much younger, between six and twelve months. At Colchester, the sheep kill-off pattern is concentrated on six- to twelve-month-old beasts, with an increasing emphasis in the post-Boudican samples on the slaughter of even younger lambs, only two to six months old. This change in emphasis is dramatic with the number of older animals dwindling as the number of younger beasts increases. It seems

evident that the animals were being bred to satisfy the demands of an increasing urban populace, which had the means of purchase, and this rather suggests a certain affluence on the part of some of the citizens. As a spin-off, the increased slaughter of very young lambs could well have released a reservoir of milk for cheese production. A similar pattern is seen for goats, though only one kid was eaten to every two lambs.

Most pigs were slaughtered when mature at 17 to 22 months, although, as with sheep, there appears to be more killing of young pigs (at six months old) in the later Roman period. It is evident from the common occurrence of enamel hypoplasia — a deficiency in tooth enamel — that half the Roman pig population appears to have been under stress after weaning. While the exact cause of this stress cannot be pinpointed, it is thought that infectious disease and underfeeding might well have been contributory factors.

Domestic fowl bones, mainly chicken, with some goose and duck, dominate the Colchester bird-bone assemblages, and in some periods on some sites more chicken

Part of a red deer skull with sawn-off antlers. Roman.





Roman dog skulls (scale in cm).

was eaten than beef, lamb, or pork: for example, at the Gilberd School in the first decades following the Roman conquest, c AD 44-60/1, and at the Butt Road cemetery church in the 4th and early 5th century. The feast organisers at the church showed a preference for the slaughter and consumption of chickens that were much larger than any others found in Roman Colchester.

From the very earliest years of the Roman occupation, there is evidence for at least two different breeds of chicken in Colchester. Most were adults, which suggests they were bred for egg-laying, and some eggshell fragments were found at both Lion Walk and Culver Street, though it is difficult to be certain that they come from hens' eggs.

Analysis of the size of the chicken bones has indicated that hens are only slightly more common than cocks in the Roman period. The male birds would have provided more meat than hens, and are perhaps indicative of a favourite pastime, cock-fighting. Statistical tests support the view that the male birds increased in size during the Roman period, while there was no change in the size of the females. One reason for this could be that there was an increase in the caponisation of fowl, the large birds being capons.

As well as providing manure and being effective eradicators of parasites, chickens, geese and ducks would have provided meat, eggs, feathers and down. The viral condition 'avian osteopetrosis' became established mainly in the post-Boudican period, although there is one example from c AD 44-60/1 at the

Gilberd School. This disease results in dense abnormal ossification, and is shown mainly in the form of additional bone, especially on long-bone shaft surfaces.

Standards of Roman animal husbandry appear quite adequate. The stature of some beasts and birds (cattle, sheep and cockerels) increased during the Roman period, particularly after the Boudican rebellion of AD 60/1. Indeed, late Roman sheep were significantly larger than in the medieval period. However, medieval cattle were significantly larger than Roman ones. Apart from selective breeding, the most likely explanation for increase in cattle size is better treatment of the animals in the form of extra feeding, with hay, other agricultural by-products or foliage in the lean season.

Roman dogs were much more common than cats, and lap-dogs were by far and away the most popular type in Roman Colchester. Both dogs and cats were usually excavated as whole or partial burials. The partial burial of a dog was dug from a silted-up Claudian ditch at Balkerne Lane, and another feature on the site contained the complete skeletons of eight dogs, ranging from short and squat animals to tall and slender ones.

Medieval and later times

The sheep/goat kill-off patterns in medieval and post-medieval Colchester differ dramatically from those of the Roman town. Mature sheep, not lambs, were slaughtered, showing an emphasis on the exploitation of wool and the consumption of mutton.

The kill-off patterns for cattle also showed striking differences, with a progressive increase in calf production from the medieval period to the 17th and 18th centuries. Cows' milk was an important item at that time.

Pigs were killed for the production of bacon at mainly 17 to 22 months during the medieval and post-medieval periods.

There was certainly a greater variety of wild bird bones recovered from medieval levels, but it is impossible to say whether the birds had been actively pursued by man or beast (the numbers of cats in the town increased over the medieval period), or had simply dropped dead on site. Some wild birds may have been kept as pets. Just as in the Roman period, hens dominate the medieval and post-medieval samples and would have supplied eggs as well as meat.

At Lion Walk, excavation of a pit dated to the late 15th to early 16th centuries revealed the carcasses of nine adult and three immature fowl, amongst which was a cock tarsometatarsus with a sown-off spur. In modern France, spurs are sown off so that steel replacements can be attached to aid the cock in fighting.

Goats were kept inside the medieval town, as is demonstrated by possible goat-droppings found in two pits at Culver Street.

Fish remains are better represented in the medieval than the Romano-British periods at Culver Street. The increased importance of some species may reflect a more specialised fishing industry involving the development of herring-fleets in the 13th and 14th centuries and



Leg bone of a cockerel where the spur has been sawn off presumably for cock-fighting. Fifteenth to sixteenth century.

off-shore line fisheries for cod. Since Colchester is situated within easy reach of river and sea resources it is likely that fish would have been eaten fresh most of the year. Fish preserved by a variety of methods such as salting, pickling, and smoking would have been an important source of protein during winter months.

The medieval deposits at Middleborough were quite different from those excavated elsewhere in Colchester, and the large number of cattle metapodials recovered seems to suggest some sort of craft or industrial activity. The most likely explanation is that there was a tannery in the area. In the post-medieval period, skins were brought to tanneries with horns and foot bones still attached. Perhaps the Middleborough foot bones (metapodials) reflect this enterprise. The location of a tannery at Middleborough would have been sensible, since water plays an essential part in the process and the River Colne flows nearby. Documentary evidence reveals Colchester's main industrial specialisation in the medieval period was the preparation of skins by tanning and tawing: the hides of cattle would have been treated by tanners and those of sheep/goat by tawyers.

Some unusual bones were found in post-Roman contexts. The vertebra of a bottle-nosed dolphin was found in a pit at Lion Walk, of c AD 1475-1525. The vertebra shows evidence of butchery and perhaps represents a stranded individual

which subsequently ended up in the stew-pot.

Part of a bear skull was retrieved from 11th- to 14th-century levels on the Long Wyre Street site. This shows clear evidence of butchery at the front of the right eye socket. The bear suffered from a severe infection since much of the surface of the bone is pitted and irregular, and there has been some remodelling with new bone.

There were several other signs of disease in the more common animals of medieval and later Colchester. The cause of osteoarthritis, particularly that of the foot joints, is uncertain. It may be due to heavy draught work, but may, as with 'spavin', be associated with use of the beast on hard unyielding surfaces, which could result in traumatic injury to the cartilage. Unfortunately, there are difficulties in distinguishing use-related from age-related changes. Spavin generally does not incapacitate the beast and shows itself as only slight lameness. Spavin was particularly common in town draught-horses during the last century and the early years of this century. Many factors can bring on the condition, but the principal cause is heavy traction on hard surfaces.

The cause of rickets in animals is not as straightforward as in man, where it is usually caused by a lack of vitamin D. Some researchers believe that dogs, cats, and chickens do not need vitamin D if the calcium-phosphorus ratio in their diet is satisfactory.

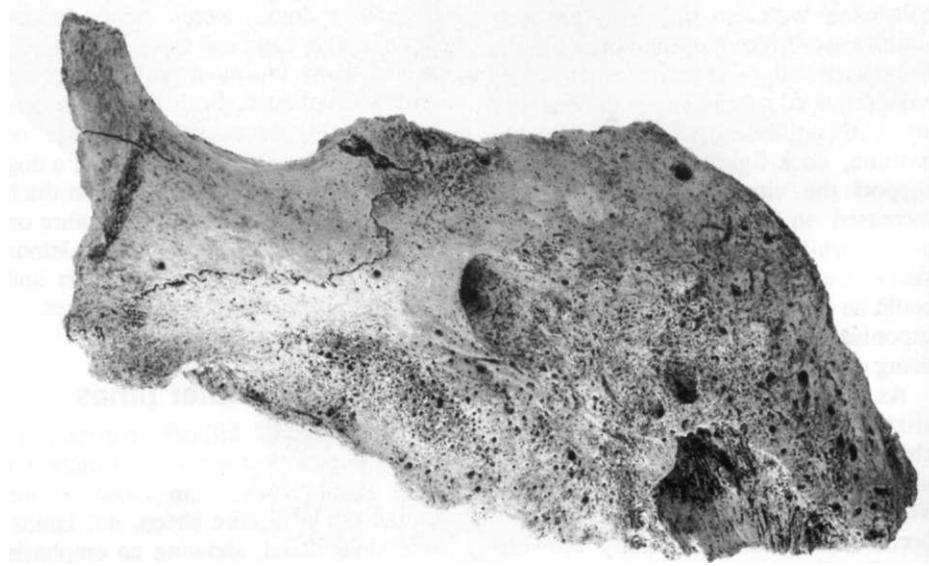
Rickets can show up as a growth defect, resulting in a deformity, such as bowing or twisting. Two medieval animals probably show the condition: a dog from Culver Street has a deformed bone in a foreleg, and a chicken from Lion Walk had a similar problem with its pelvis.

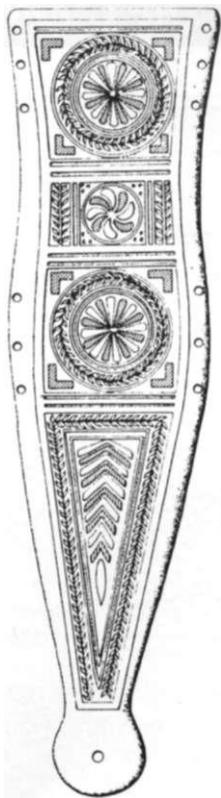
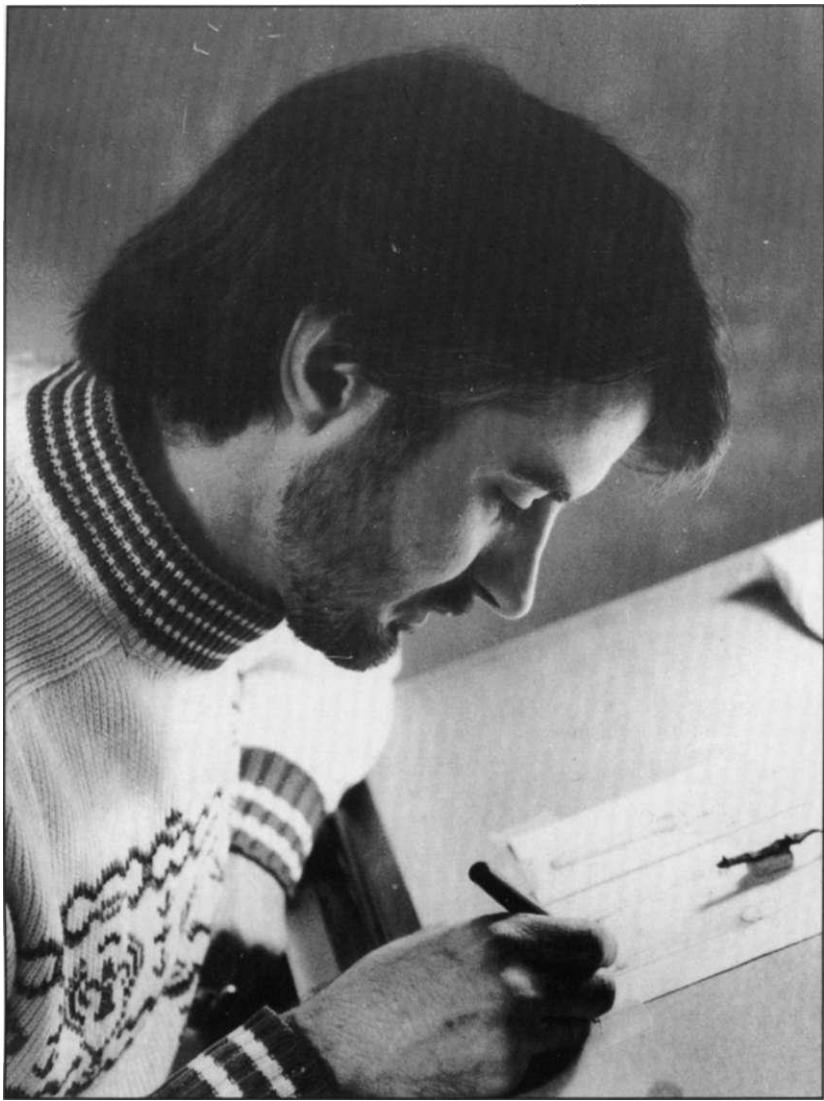
A myeloma is essentially a tumour of bone marrow and related cells, and one of its main characteristics is that it produces multiple spongy growths of new bone (neoplasms) simultaneously in a number of sites. Part of a chicken pelvis from a medieval context at Lion Walk which exhibits spongy outgrowths of new bone suggestive of a myeloma.

Thus animal bones from sites like Colchester, particularly when recovered in large numbers, can tell a great deal more than you might imagine. Not only can they reveal information on the more obvious subjects like past patterns of meat consumption, but they also provide detailed information on animal husbandry, butchery, diseases, and the uses to which some animals and their products were put. Even the wild life is represented in the bone collection, revealing a rich variety of species, some of which, like the corncrake and crane, have long since vanished from these parts.

Animal bones from excavations in Colchester 1971-85 (Colchester Archaeological Report 12) by Rosemary Luff should be available from the Trust sometime in 1993. It will cost around £20.

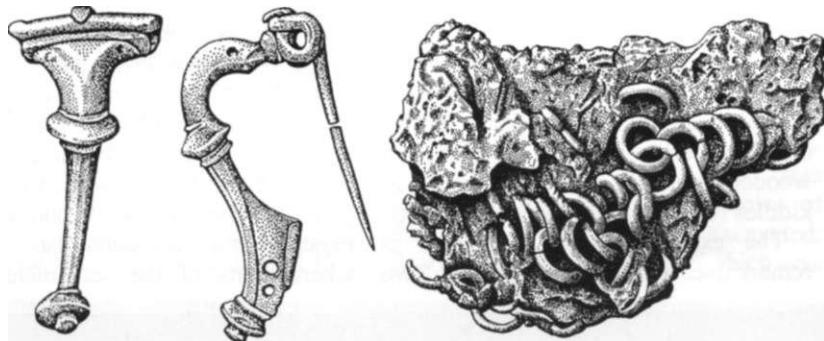
Part of a bear skull. The base of the eye socket is on the left. The lower edge is part of the upper jaw. Medieval.





Terry Cook

IT IS WITH great sadness that we must record the death of Terry Cook. Terry died unexpectedly after a short illness on 18th August 1992, two weeks before his 41st birthday. He worked as a draughtsman at the Trust over a 15-year period, producing during that time work of great quality and skill. In particular his drawings of small finds published in *Colchester Archaeological Reports* 2, 5, and 6 have been widely admired. Together with Bob Moyes, the Trust's other long-term draughtsman, Terry produced a remarkable series of scaled stone-for-stone drawings of Colchester Castle, the town walls, and St Botolph's Priory. An obituary appeared in *The Independent* on 21st August. Trust photographer Alison Colchester, who lived with Terry for 24 years, is to plant a tree in his memory at St Botolph's Priory where the Trust is involved in the landscaping work.





Ancient fisheries

The Essex coast is rich in archaeological sites, many of which have been recorded from the zone between high- and low-water marks. More recently, a very exciting find was reported by a local mariner, Ron Hall, from an area of the Blackwater Estuary which can only be safely reached by boat, and which is exposed for an hour or two at the lowest of low tides. On these isolated sandbanks, Mr Hall

discovered many lines of timber uprights, in rows up to 1 kilometre long, with pieces of wooden hurdling lying flat on the mud. These lengthy stretches are being slowly exposed (and eroded) by the tides, and are made up of a mixture of parallel and V-shaped structures. The latter almost certainly comprise the remains of wooden fish-traps, known in Essex as kiddles (or sometimes kettles or weirs).

The extent of these structures is remarkable: so also is their date. Two

The work of Anglo-Saxon fisherman at Collins Creek.

timbers were taken and radio-carbon dated. Both gave Saxon dates — one of AD 640-675, the other AD 882-957. The construction of the fish traps must have required colossal time and effort, implying that fishing was an important part of the Saxon economy. The mystery for archaeologists is the whereabouts of the settlements from

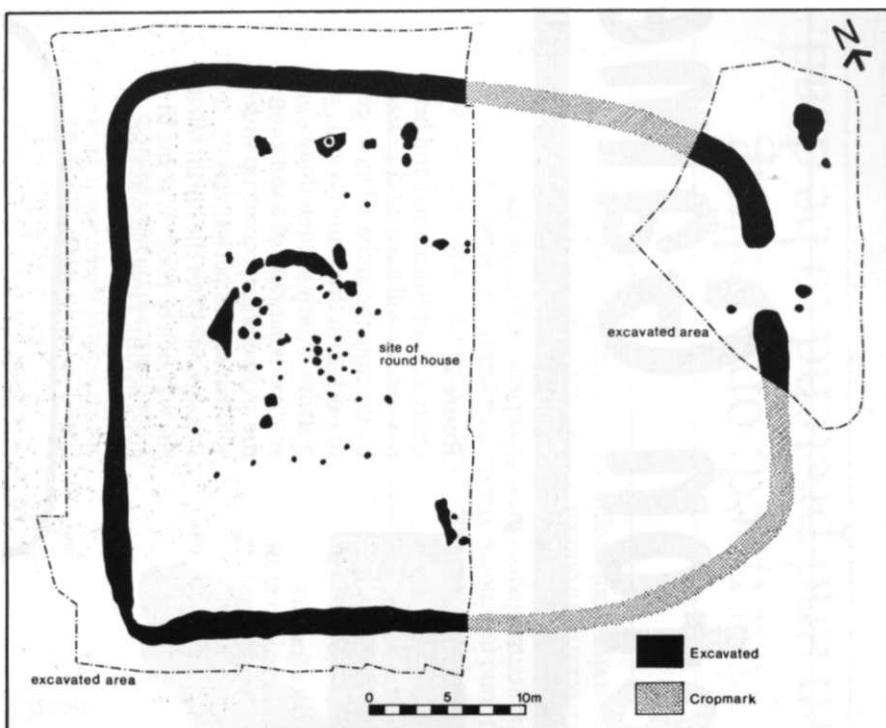
which the work was organised. Known sites of this period are rare in the area around the Blackwater Estuary. The 7th-century monastic site at Othona, on the coast at Bradwell-on-Sea, and a 7th-century settlement near Slough House Farm on the north bank of the Blackwater are possibilities.

As a result of Ron Hall's discoveries, the Archaeology Section organised aerial survey along the Essex coast, and another kilde was found off Mersea Island, as well as confirmation of the continued existence of another site at Bradwell-on-Sea which had been reported some years ago by a local enthusiast, Mr Kevin Bruce.

The study of this kind of site is hindered by their inaccessibility, but since the tides are gradually eroding them away, it is crucial that they are studied as fully as possible over the next few years. In the first instance, the Archaeology Section will be carrying out a detailed investigation of the Blackwater structures over the next year or two, with the aid of a grant from English Heritage. Then, if the results justify it, this may be extended to cover other kiddles along the Essex coast.

Bronze Age Essex

Bronze Age studies have been something of a growth area in Essex recently, particularly for the Late Bronze Age (between about 1000 BC and about 650 BC). This is as a result of the excavation, often on a large scale, of a number of sites. One of the most recent examples was the investigation in 1991 of a cropmark enclosure at Windmill Field, Broomfield. This had been thought, because of the shape of the cropmark, to be Iron Age in date. In fact, rescue excavation in advance of a housing development showed that it was Late Bronze Age. Two thirds of the enclosure was excavated, the rest being left untouched because it would not be destroyed by the development. The enclosure measured 35 x 40 m and was defined by a ditch up to 1 m deep, though in many places this was much less. There would have been a bank on the inside, but this had been ploughed away. The entrance was indicated by a



The Late Bronze Age homestead at Windmill Field, Broomfield.

single gap in the ditch, plus post-holes indicative of a substantial wooden gate. Within the enclosure was a single post-built round house, 8 m in diameter, and probably home to a single family group. The house had a porch aligned on the entrance. Apart from the remains of the round house, there were a few pits and some scattered post-holes. A rough line of six of these to the south of the house suggests the presence of a fence, perhaps to keep stock animals away from the house. Finds consisted of Late Bronze Age pottery, flintwork and pieces of saddle quern worn smooth from the daily grinding of cereals to make flour.

So far, two types of Late Bronze Age enclosure have been recognised from Essex. One is circular, with substantial ditches, opposed east-west entrances, and a central round house. Examples include Springfield Lyons and Mucking South Rings. The other kind of enclosure is smaller, square or rectangular in shape, with much less substantial ditches. Two examples of this type have been excavated: Broomfield and Lofts Farm (which was

double-ditched) near Heybridge. It is anticipated that another of this type will shortly be investigated near the Boreham Interchange north of Chelmsford, not far from the circular enclosure at Springfield Lyons. On the basis of preliminary work, the survival of animal bone at this site is unusually good and this should provide useful information on domestic animals, about which little is known for Late Bronze Age Essex.

Their size and the discovery at some sites of moulds for casting bronze objects suggest that the circular enclosures were the more prestigious sites. However, more research is needed to establish the nature of the relationships between the different kinds of enclosure. Negotiations are taking place with English Heritage about funding for a survey project in the Chelmer Valley, which contains most of the known Late Bronze Age enclosures. The aim will be to look at all sites of all periods, including the Late Bronze Age, and to increase our understanding of how the landscape of this part of Essex developed.

The Friends of the Colchester Archaeological Trust

The Friends of CAT is a thriving organisation with several hundred members. Most live in Essex, but a few hail from as far afield as Denmark, Gibraltar, Canada, the USA, Africa, and the Antipodes. All members of the Friends receive a copy of *The Colchester Archaeologist*, and those living within a reasonable distance of Colchester have a chance to attend an annual lecture on the previous year's work, to go on organised outings to excavation sites, ancient monuments, historic buildings and museums, and to attend events related to the work of the Trust.

The year past

Last January members gathered in the lecture room of the Castle Museum to hear Stephanie Pinter-Bellows talk about some of the results of the pathological study of the Butt Road human skeletal material, and during tea they were able to examine a few of the bones and see the evidence with their own eyes. Carl Crossan and Philip Crummy covered the year's work on sites in Stanway, St Botolph's Priory, and the Castle.

On a wet and windy March day Peter Huggins guided members around Waltham Abbey, which, like St Botolph's Priory, was an Augustinian house, though far grander as a result of royal patronage. Peter has excavated extensively in the abbey, and his knowledge of the below-ground remains was of immense help in understanding what is left above-ground today.

Dendrochronology (tree-ring dating) and new finds at the Bronze Age site of Flag Fen, near Peterborough, have prompted a re-interpretation of previous seasons' results, and in May Francis Pryor gave us a stimulating guided tour and patiently answered innumerable questions. The new Visitor Centre adds much to the site's attractions, making

Flag Fen probably the most civilised excavation in the United Kingdom.

The annual churches outing in July was led by Andrew Harris, who took us to churches in the Braintree area to look at 14th-century stonework. Andrew was, as usual, both entertaining and lucid in his expositions of the important features of each church, and we all felt much wiser at the end of the day.

We were privileged in September to visit St Albans and learn from Ros Niblett about her excavation of a rich Iron Age grave similar to those found near Colchester. The new Museum displays were also very popular, and visits to the Roman theatre and parts of the Iron Age dyke system made this a very full and varied day.

We were back with the Bronze Age in November at a "hands-on" session in the Castle Museum. Paul Sealey had selected a range of pottery types and some metalwork from "founder's" hoards for us to examine, and also prepared an illustrated talk. Family circumstances prevented him from being with us on the day, but the finds and his slides spoke for themselves and averted disaster.

The year to come

The 1993 AGM, with tea and raffle, will be held in the Castle Museum's lecture theatre at 2 p.m. on Saturday January 30th. The business part of the proceedings will be held the previous week, on Saturday January 23rd at 12 Lexden Road, at 10.30 a.m.

In July we hope to combine the annual "hands-on" session with the churches outing in the form of a day-long event organised by Andrew Harris. In the morning we will handle some stonework, probably in the comfort of the Castle Museum, and in the afternoon, our newly-informed fingertips at the ready, we will sally forth to some East Anglian churches to see complete examples of the

morning's fragments.

Excavation hangs on the coat-tails of the building trade, so the recession has hit archaeology hard, with very few sites being dug. The other trips will probably therefore concentrate on monuments.

A special event will be a wine and cheese evening in the Castle Museum courtesy of Current Archaeology. This is Britain's biggest "popular" archaeology magazine and its editor, Andrew Selkirk, wishes to mark publication of an article on Stanway with a party. We hope you will be able to come along and meet Andrew. The date is yet to be fixed but it will probably be in February (1993).

Distant Friends

Many members live too far away to come to the trips or other events so we have decided to invent a new category of membership called "Distant Friends". This is a novel concept which we will try for a year or so and if the feedback is encouraging we will make it a permanent feature. In addition to their usual mailings, Distant Friends will receive copies of a collection of press cuttings of articles which have appeared over the previous year. These will be about aspects of the archaeology and history of Colchester in which we think members might be interested. We also hope to be able to add in the odd leaflet or so which we think might be of interest. In all it will only be a modest package — postal charges leave us no choice anyway — but we hope it will be some compensation for the members whom we can never see.

The first of these annual extras goes out with this magazine. If you would like to be considered a "Distant Friend" and have not received this, please let us know and we will gladly send the bits and pieces on to you.

Nina Crummy

In brief



In the pipeline

In the past year those familiar with the by-ways around Colchester may have spotted unusual machinery at work steadily cutting narrow pathways through the fields. In their wake people in hard hats could sometimes be seen walking slowly with heads bowed, occasionally kneeling on the ground. If you have witnessed such a scene you will have come across one of Anglian Water's many mains renewal projects, part of a major supply improvement programme for the region that will continue into the late 1990s.

Conscious of the possible archaeological implications of their work, Anglian Water consult the County Sites and Monuments Record in advance to assess the sensitivity of each new route. If there is a likelihood that the pipeline laying will affect areas of archaeological interest, they commission organisations like the Trust to carry out the necessary fieldwork which can extend from a simple watching brief to selective excavation of buried features known to lie in the path of the new pipeline. So far, the Trust has examined a total of 12 miles of trenches in Messing, Easthorpe, Copford, Birch, Stanway, Boxted and the Teyns, resulting in the discovery of new sites and hundreds of finds ranging in date from medieval to the Roman, Iron

Age, Bronze Age, and Neolithic periods. It has been said that our countryside is one great archaeological site — following in the path of the trenching machines certainly demonstrates this point.

Observation on this scale demands frequent site inspections: to help ensure this, we have been fortunate in receiving support from volunteer trench-watchers Pat Adkins, Dennis Tripp, James Fawn and Michael Matthews, to whom thanks are due for their invaluable assistance in the course of the works.

Carl Crossan

'The Story of Colchester' unfolds

The new displays at the castle are proving a hit with the public. Visitor numbers have risen sharply since the opening of the first phase of the new displays last year and the second phase, which opened in July, promises to keep the momentum going with the prospect of reaching 100,000 by the end of this year. The second phase starts where the first phase left off, namely just after the Boudican Revolt, and takes the visitor up to the 4th century and the Butt Road cemetery. Daily life is explored through the exhibits in a lively manner and is brought to life with imaginative reconstructions and with artefacts which

Going to the Roman theatre in the new-look Colchester Museums.

the visitor can handle. If you ever wondered what it felt like to be a slave in neck chains, go to the museum and try for yourself.

Colchester Castle

July 1992 was a landmark for Bob Moyes because he finished the mammoth task of drawing the outer faces of Colchester Castle. Something like 150,000 pieces of stone and tile have been carefully drawn, all at a scale of 1:20. The work was done in eight phases, starting in 1987, each usually done by Bob and Terry Cook although Bob did this last stage on his own. The drawings are based on photographs taken by the Photogrammetric Unit at the University of York which are reproduced at 1:20 in such a way that the effects of parallax are minimised. These reduce the need to use tapes and thus save a great deal of time.

The drawings are used to record the extent and locations of the present round of repairs and will, we hope, be used in a similar way in future programmes of a similar nature. The Castle has an extraordinarily complicated structural history which nobody can yet claim to

understand fully. This project has provided an opportunity to study the Castle in a way that has never been done before with some interesting results which we hope to explain in a future edition of *The Colchester Archaeologist*.

Archaeology lectures

Subjects covered in the Colchester Archaeological Group's winter's season of Monday night lectures include human evolution (Dr Robert Foley), the wind- and watermills of Suffolk (Mark Barnard), and Roman jewellery in Britain (Christine Jones). For further details, contact Pat Brown, 172 Lexden Road, Colchester CO3 48Z (telephone Colchester 575081).

Block-buster report

This year saw the publication of the sixth book in our series, *Colchester Archaeological Reports*. This one is a bit of a block-buster covering over 200 sites and

watching briefs which have taken place in and around the town between 1971 and 1985. However it is mainly about the Culver Street excavations which, the way things are going, will probably prove to have been the largest town-centre dig in Colchester for a very long time to come. In fact we can imagine that future generations will look back on the period 1970-85 generally as being one of extraordinary archaeological opportunities because of all the large-scale developments such as Lion Walk, Balkerne Lane, Culver Street and so on which took place in Colchester at this time. What they will make of it all, we can only wonder.

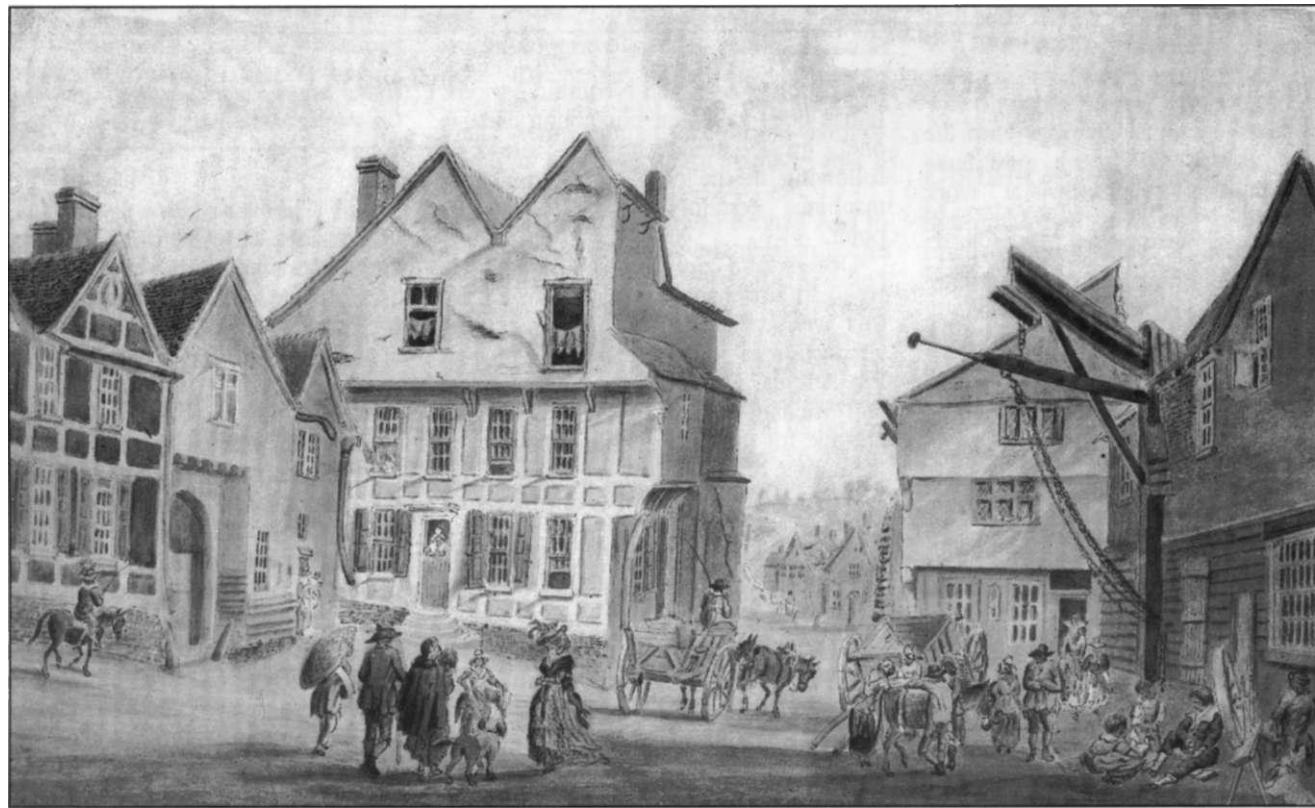
Colchester Archaeological Report 6 is subtitled 'Excavations at Culver Street, the Gilberd School, and other sites in Colchester, 1971-85' and can be obtained from bookshops (ISBN 0-9503727-6-5) and the Trust. It is 446 pages long, and has a wallet of large folded plans and a set of microfiche. The book comes in hardback and is an absolute bargain at

£39.50. Definitely not bedtime reading though...

Spy in the sky

Edward Clack has published a fascinating book about his lifelong hobby, aerial photography. Beautifully produced in full colour throughout, *Spy in the Sky* provides an absorbing mix of aerial photographs and snippets of text on subjects as diverse as the fire which destroyed Southend Pier in 1976, the wild life reserves of Essex, historic buildings like Audley End and Hadleigh Castle, and a whole host of villages and towns. Its emphasis on Essex makes the book an ideal gift which will appeal to a wide range of people from the county. Aerial photography of archaeological sites figures prominently with a special section on our excavations at Stanway. We wish Edward well in his venture.

The book costs £9.95 and should be obtainable from most bookshops (ISBN 0-9520073-0-4).



Photograph courtesy of Sotheby's

Being from the days before photography, pictures such as this can provide priceless information about long-lost historic features. Andrew Phillips realised that this newly-discovered watercolour by Edward Eyre dated 1775 was in fact a view of the lower end of North Hill where the Roman North Gate once stood. As a result the Friends of Colchester Museums were able to bid successfully at Sotheby's for the painting and secure it for the town. Although clearly demolished by the time the painting was done, the plan and outline of the gate

are echoed in the houses which subsequently occupied its site. These seem to confirm what was already suspected about the gate, namely that it was narrow and had only one arch.

Because of the large expense, an appeal has been launched in the hope of raising £500. If you are interested, donations can be sent to the North Gate Appeal, Friends of Colchester Museums, Colchester Castle, High Street, Colchester. The painting is to be on show in the Castle early in the new year.