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Catterick 1959: John Wacher's excavations of 4th-century shops and houses in *Insula* V

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5 Colchester's Roman Town Wall

Philip Crummy

The following contribution has two aims. The first is to present an up-to-date description of Colchester's town wall, particularly in the light of the discoveries made between 1986 and 2000. The second is to set out a case for dating the construction of the wall to after the end of the Boudiccan uprising, when the provision of stone defences would have been a key feature of the refoundation of the colony.

Previous work

The work on the wall up to *c*. 1958 is summarised in Rex Hull's *Roman Colchester* (Hull 1958, 14–63), and the two sections dug by R Dunnett (now R Niblett) in the 1960s are published in Dunnett 1971, 68–9, 102; Crummy 1992; 2001 provide accounts of the relevant excavations during the periods 1970–1985 and 1986–2000 respectively.

As part of a major conservation programme, the faces of the town wall were drawn stone by stone at a scale of 1:20 prior to cleaning and consolidation. The survey took place between 1988 and 1992, and was funded by the Colchester Borough Council and English Heritage (HB MC). The resulting drawings, which were prepared by the late Terry Cook and Bob Moyes of the Colchester Archaeological Trust, have been deposited with Colchester Museums.

Description of the wall

Colchester's Roman town wall is one of the best preserved in the country (Figure 5.1). Of the original circuit of 2,844m, about 65 per cent (1,835m) of town wall is visible above ground. Moreover large sections are relatively well preserved and in places reach a height of 2.6m above modern ground-level.

The wall was of the standard ashlar construction found in many town walls in Britain and Gaul (Figure 5.2). The faces are of brick and dressed *septaria* laid in ne horizontal courses. The coursing is nearly always in t form of four courses of brick alternating with four course of *septaria*. The front and rear faces were of the sar quality of build. The brick courses match front and ba in height, but do not pass through the core as they do some town walls. In places (e.g. north and south of t Balkerne Gate: Hull 1958, pl 5b; Crummy 2001), t joints were picked out with the tip of a trowel to improthe look of the work. The technique is paralleled in mar walls in Gaul (Adam 1994, 137–39). The quality of t rear face and the lines in the pointing mortar suggest the rear face was meant to be seen and that therefore t rampart was a later addition.

The core was made by filling the space between the faces with alternating layers of rubble and mortar (Figur 5.2). The wall must have been raised in stages. The top the uppermost brick course in each group of four wou have been a convenient stopping point for each stage construction, but no evidence has been recognised support this assumption. The mortar in the faces wou need to have set before the core was added, otherwise the faces would not have been strong enough to withstand the weight of the core and the tamping of the mortar. None the upper surfaces of the mortar layers in the core appet to be smooth, which suggests that the last layer to be last the end of any one session was always rubble. No put holes have been found in the Roman work, indicating the the wall had been built using free-standing scaffolding.

The width of the wall is difficult to assess exactly, b measurements at various places produce $2.6m \pm 0.1n$. There usually were basal offsets front and back, abo 30-40mm wide, formed of one brick course over one *septaria*. The offsets make the wall about $2.67m \pm 0.2$ wide, which suggests an intended 9 *pedes Monetal* (2.66m). (The *pes Monetalis* is taken here to measu 0.295m.)

A few tegulae occur in the brick courses (common walls such as Richborough), but overwhelmingly the

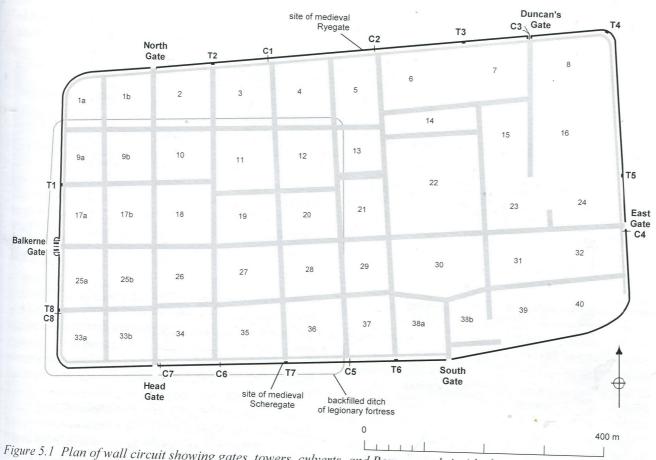


Figure 5.1 Plan of wall circuit showing gates, towers, culverts, and Roman roads inside the walled area of Colchester.

material is of building brick. All the brick and tegulae seem to have been fragmentary. Typically the brick courses were two or three fragments deep, so that one formed the face and the others were buried in the mortar. Other defensive walls, e.g. Richborough and Verulamium, also use brick and tile which is broken. The brick is so consistently fragmentary, that it gives the impression of having been broken deliberately, which is hard to believe. On the other hand, there seems to have been too much of it to have been reused, and some bricks would presumably have been salvaged complete, which they plainly were not. The explanation for the broken fragments presumably lies in the width of the facings. Complete bricks would have formed straight joints inside the wall which would be structurally weak. Fragmentary brick, on the other hand, would have created ragged internal edges to the facings, and these would have made for a stronger, betterbonded wall. We will return to the explanation of the broken bricks below.

A run of up to eleven bricks on edge alternated with single blocks of septaria immediately south of the Balkerne Gate, and there were also at least three bricks laid horizontally in the septaria courses directly above them, which is very unusual (Figure 5.3). This arrangement probably represents the remains of a deliberate decoration of the wall as, for example, at Richborough (in Section 9

on Figure 5.5). The technique recalls the elaborate decorations at the Porta Nigra in Trier and elsewhere. However, there are another four bricks in the same section of wall, which are also upright and occur in courses of septaria. These have a more random appearance.

Traces of what appeared to have been a white coating have been noted at many exposures of the internal face where it is well preserved (Crummy 1992, 64). This was thought to be the remains of whitewash as found at Hadrian's Wall (Frere 1988, 458), but a reappraisal indicated a natural origin for the coating (Crummy 1992, 65-7).

Internal towers (turrets)

Internal towers were placed along the inside of the wall. They were at the ends of the streets and in the four angles of the wall circuit. The towers were in the form of solid rectangular projections of masonry (20 x 6 pedes Monetales) built as one with the wall. Rex Hull shows six in his Roman Colchester (Hull 1958, pl. 41), but two more can now be added to his total. The latest discovery was at no 22 Northgate Street in 1994 (Crummy 2001), where part of the base of a tower was uncovered during underpinning works to a house that had suffered subsidence. The

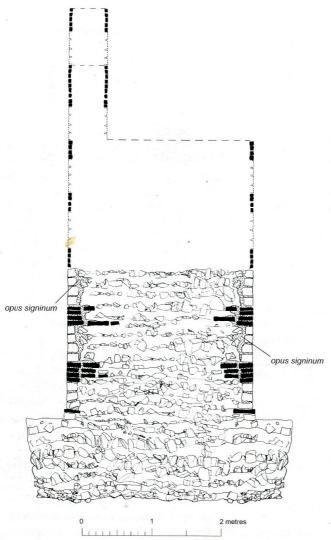


Figure 5.2 Hypothetical section through the town wall to illustrate its internal structure. (Based on the sections at Culver Street (Crummy 1992, 64, fig 3.32) and Lion Walk (Crummy 1984, sheet 6a, Sx 54).)

configuration of brick and core at the rear of no 42 St John's Street, excavated in 1994 (Crummy 2001), hints at the presence of another one on the southern part of the wall circuit. In all, there could be another 15 or so towers, but this must be a maximum figure since the excavation at no 11 Short Wyre Street (Crummy 2001) showed that at least one of the roads did not end in a tower.

Culverts

The towers were closely associated with culverts in the wall. The typical position for a culvert is immediately adjacent to one side of an internal tower. One of the functions of the towers may have been to secure the mouths of the culverts, because the culverts were large enough for a man to crawl along. Although the culverts were below ground-level, the tiles forming their arched

tops were not, so that an aggressor would have know where to dig to gain access to them. However, it should noted that not all culverts were next to a tower, and may not all towers were next to a culvert.

The culverts were brick-turned arched passages through the foundation of the wall. Most of the known culver line up with one side of a Roman street, showing that the purpose was to provide passages through the wall f wooden box drains to conduct waste water from inside the town into the defensive ditch beyond. The mouths of tw culverts are visible (Figure 5.1, nos. C4 and C5), and pa of another (C8) can be seen at St Mary's Steps. There a records of a fourth near the north end of Maidenburg Street (C2; Hull 1958, 80-1), and a fifth at the east side the Head Gate (C7; Hull 1958, 60). Three more har come to light in recent years: at Ryegate House in Peter's Street in 1976 (Crummy 1992, 817–18), at no 4 St John's Street in 1988 (Crummy 2001), and at no Short Wyre Street in 1988 (Crummy 2001). Parts of y another culvert are permanently exposed in the Castle Par but this culvert might post-date the construction of the wall since it passes under the carriageway through Duncan's Gate and was associated with the ?waterworl to the south (Crummy 1980, 271-72, although see Hu 1958, 40 on its relationship to the gate).

The culverts all appear to have a double arch of bric The only exception might be C5 in Vineyard Street, exce that the wall in this part of the circuit was refaced in the late medieval period and an outermost arch of bricks mig be obscured.

Most of the culvert at St Mary's Steps (C8) was removed in the early 18th century to provide a passage through the wall for pedestrians (Crummy 1992, 324–28 Scheregate seems to have been a medieval creation about which little is known (VCH, 250). Its site (Scherega Steps) seems to overlie a Roman tower (T7; Hull 19559), which indicates that, rather like St Mary's Steps, the 'gate' might have been a gap in the wall made by enlarging a Roman culvert. Another culvert may have existed on the south side of the tower T1, at the point where the missing section of wall broke off at what was a weak point.

Interestingly, the culverts seem consistently to be of the left-hand side of the street when viewed from inside the walled area. There appear to be two exceptions to the rule. One is the culvert C4, but, being next to East Gate there may have been a matching culvert on the other side. The other is the possible culvert at Scheregate mentione above, which, as explained, is dubious anyway.

The culvert C5 (at no 11 Short Wyre Street) projecte 1.4m behind the rear face of the wall, where it was mor like the brick drains found in *Insula* 22 (Hull 1958, 16, 175–76), and at Duncan's Gate (Hull 1958, 87–90). The rear of a culvert has only been examined in one other place (i.e. C8; Crummy 1992, 324–28). No rear projection was found here, but the culvert was next to a tower, and this might somehow explain the absence.

The culvert C3 under Duncan's Gate continued beyon

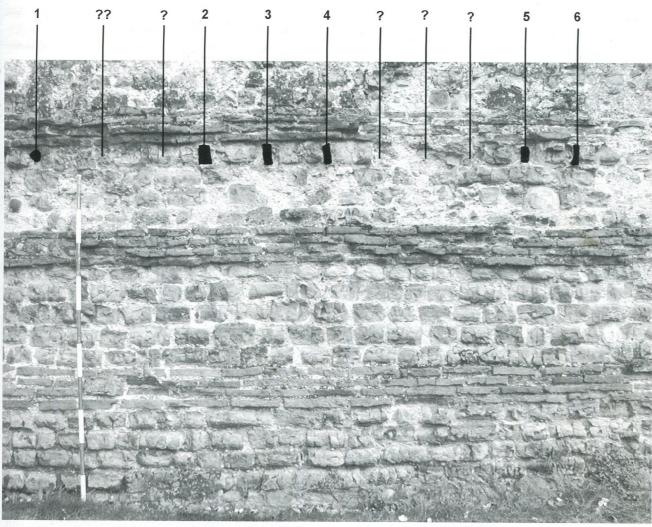


Figure 5.3 Possible decoration in the face of the wall immediately south of the Balkerne Gate.

the line of the town wall to end in the town ditch (Hull 1958, 36–42). It is not possible to tell if the other culverts behaved similarly, because any continuations might have been destroyed as a result of post-Roman erosion and robbing.

Gates

There appear to have been six Roman gates (Figure 5.1). The plans of two of them (the Balkerne Gate and Duncan's Gate) have been fully recovered, and the part of the eastern sides of two others (North Gate and Head Gate) are recorded. Almost nothing is known about the other two gates (East Gate and South Gate).

The Balkerne Gate had four portals (Figure 5.4; Crummy 1984, 121–23), but it was not typical of the other gates, because it incorporated an earlier monumental arch. Duncan's Gate was a single portal gate, the width of the portal corresponding to the width of each of the main portals at the Balkerne Gate.

The North Gate was substantially rebuilt in the

medieval period as the existing stretches of medieval wall to either side testify. Illustrations of the gate in the 18th century show it as having one square-headed portal, and they allow us to estimate how this related in plan to the eastern side of the Roman gate as recorded by Rex Hull in 1944 (Hull 1958, 32–4). If the rebuilt medieval gate retained the core of its Roman predecessor, then the North Gate probably took the form of one large portal flanked by two smaller footways. If it was completely rebuilt, then a single or double portal plan for the Roman gate seem to be the two possibilities.

The same ambiguity applies to Head Gate. The eastern side of the gate was found in 1988 (Crummy 1992, 396–98). By projecting the likely position of the north-south street, I suggested that Head Gate had two portals (Crummy 1992, 396–98). The inclusion of culvert C7 produces the double portal plan on Figure 5.4. However, the limited evidence for the post-Roman gate (principally Morant's map of Colchester in 1748) shows a single portal just like the North Gate, thus leaving the plan of the Roman gate uncertain.

Medieval East Gate is similarly shown on Morant and

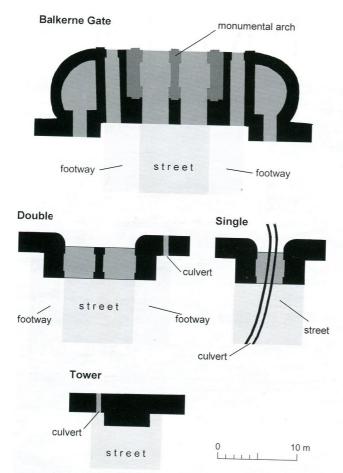


Figure 5.4 Plans of the gates and towers.

elsewhere as a gate with a single square-headed portal. The only other clues about the form of its Roman predecessor come from the relationships between the surviving stump of town wall on its south side, the culvert C4, and the position of the east-west street as extrapolated from the west. Together, these suggest that the gate was not like the Balkerne Gate. A plan of simple double portal form seems the most likely guess at present.

Nothing can be deduced about the plan of the Roman South Gate, except that if must have been irregular to cope with the configuration of the wall and the street.

There were two gates which seem to have been post-Roman creations. Scheregate has already been mentioned, with the possibility that it was an enlarged culvert like the postern at St Mary's Steps. However, Ryegate is more problematic, since it appears that it did not originate as a Roman gate or an enlarged culvert. We can now work out accurately where the gate stood, because of a reference to the western part of the gate and a staircase being incorporated in a house in 1671 (VCH, 250). The house in question can be identified on Monson's map of Colchester in 1848, and its location seems to confirm what has always been supposed, namely that the gate was almost certainly of medieval origin, because it does not correspond to the end of a north-south street in the Roman town. Ryegate

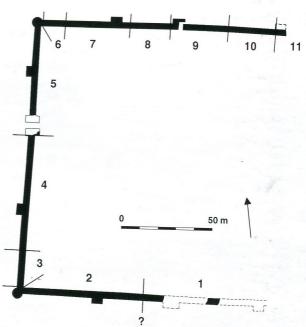


Figure 5.5 Sections of wall at Richborough which were built by different gangs.

was almost exactly equidistant from North Gate and Duncan's Gate, and thus might have been inserted between two existing gates to break up what otherwise was a long stretch of wall.

Gangs

The town wall is unlikely to have been raised as one unit, but it would be been built in short lengths, each with its own gang and its own stock-pile of materials. The materials might vary from gang to gang as might their building practices. Features which allow gangs and their handiwork to be identified include changes in building materials, discontinuities in coursing, and changes in the pattern of coursing. A good example of a wall circuit where such sections of wall can be discerned is Richborough, where there are at least twelve (Figure 5.5).

The work of different gangs seems detectable at the Balkerne Gate and the wall to either side of it (Figure 5.6). The gate is of two phases. The first phase was a monumental arch, which was presumably built at the foundation of the colony c. AD 50. The second phase corresponded to the building of the town wall and was the construction of the gate itself, which was built around the pre-existing arch (Crummy 1984, 70–3). Evidence for gangs and their relative speed of working is as follows.

- 1) The coursing of the lowest parts of the gate and adjacent stretches of wall correspond, whereas higher up they do not (Figure 5.6).
- 2) The Phase 2 part of the gate is set in *opus signinum* whereas the adjacent sections of wall incorporate very little (Figure 5.6).

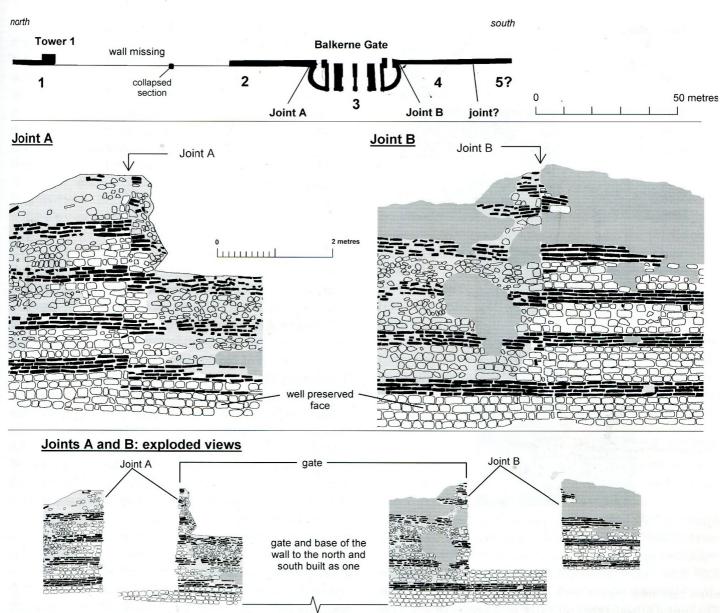


Figure 5.6 The evidence for five different gangs building the Balkerne Gate and the adjacent sections of wall.

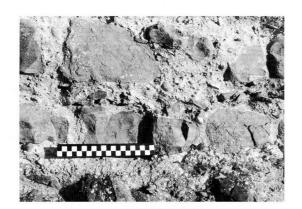
- 3) Some *opus signinum* was used in the lowest courses of the southern stretch of wall (Figure 5.6),
- 4) The only visible *opus signinum* in the north wall is a small spill adjacent to the Phase 2 gate (Figure 5.7).
- 5) The spill is contiguous with a small fragment of brick which corresponds to a single course of tile in the adjacent tower of the Phase 2 gate (Figure 5.7).
- 6) The outer face of the stretch of wall north of the gate contains thousands of fragments of waste chippings from the dressing of the *septaria* blocks for the wall facing (Figure 5.7). This is the only place in the wall circuit where chippings have been observed in such large numbers.
- 7) No chippings are present in the stretch of wall to the north of the last one.
- 8) There is a change in the quality of the face about 26m south of the gate where the brick becomes smaller and less carefully bedded.

From these details, it is possible to see the work of at least

five different gangs, one for the gate and four for the adjacent stretches of wall (Figure 5.6). Gang 3, who built the gate (Section 3), favoured *opus signinum*, whereas Gang 2 working on Section 2 liked to use the waste from dressing the facing stones as aggregate in the mortar.

The relative speeds of Gangs 2, 3, and 4 can be tentatively deduced from Joints A and B (Figure 5.6). All three gangs started at the same time, and the courses matched throughout the wall. When the work was about 0.7m high, Gang 2 began to lag behind the others. Gangs 3 and 4 continued to keep up with each other for another 0.6m. Gang 3 then started to push ahead more quickly, and the effect was that the courses in Sections 3 and 4 no longer matched (Figure 5.6). The gate was of course to be much higher than the wall to either side, which may be why, metre for metre, it was built more quickly.

Unfortunately the lengths of the different sections of wall cannot be measured precisely. Section 4 appears to be about 26m long. Section 2 terminates 29m north of the gate, where a 61m length of wall is almost entirely



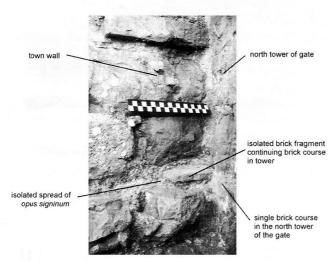


Figure 5.7 Above: waste septaria chippings in the wall north of Balkerne Gate (Section 2 in Figure 5.6). Below: brick and opus signinum at Joint A (Point A in Figure 5.6). Although in Section 2, the fragment of brick and the opus signinum tie in with the adjacent Balkerne Gate (Section 3), and represent the last stage in the constructional sequence when the courses in Sections 2 and 3 matched.

missing. The absence of the distinctive *septaria* chippings in the wall to the north suggests that Section 2 was between 29m and 90m in length. (Section 2 may turn out to be no more than 46m long, because there is a small piece of collapsed wall in the 'missing section' which does not seem to contain the chippings, although it needs to be cleaned to be sure.)

Despite so much of the wall surviving above ground at Colchester, too little of the faces are well enough preserved to allow the identification of other similar sections of wall. However, the presence or absence of *opus signinum* is one likely indicator of different gangs in operation elsewhere around the circuit. For example, *opus signinum* occurs in the rear face of the wall at Culver Street (Crummy 1992, 64, fig. 3.32), but not at Lion Walk (Crummy 1984, 70–3, sheet 6a, Sx 62) or St Mary's Steps.

The *septaria* chips in Section 2 next to the Balkerne Gate suggest that the each gang dressed their own stone, and that this operation was carried on site next to the part

of the wall which the gang was building. At other places on the wall circuit, two features have been discovered which relate to individual gangs. Part of a stockpile of unworked *septaria* was found at the rear of the wall at the Lion Walk site in 1973 (Crummy 1984, 70–3), and the remains of wooden boards for mixing mortar were discovered behind the wall at the Culver Street site in 1985 (Crummy 1992, 63). The two discoveries were about 200m apart, so that they are unlikely to have belonged to the same gang.

Rampart

The rampart has been sectioned on a number of occasions over the years, and an Antonine date was well established for its construction (Hull 1958, 25–32, 62–3; Dunnett, 1971, 68–9; Crummy 1984, 70–3; 1992, 62–4). At Culver Street, there was some evidence for a later dumping of material on top of the rampart continuing until at least the 3rd century (Crummy 1992, 63).

Ros Dunnett was the first to show that the rampart was a later addition, and that the wall was originally free-standing (Dunnett 1971, 68–9, 102). Two subsequent sections at Lion Walk and Culver Street confirmed her conclusion (Crummy 1984, 70–3; 1992, 62–4). Of the earlier work, there was one section (dug in 1951 by Miss K M Richardson) which seemed to show that the rampart and wall were built as one (Hull 1958, 25–32). This was because thin horizontal layers of mortar and chips of *septaria* in and under the body of the rampart appeared to correspond to mortar joints in the wall. However, with the aid of the more recent sections, it is now possible to reinterpret the layers of mortar and *septaria* chips in a way that is compatible with a rampart raised against a freestanding wall (Crummy 1999, 97–8).

Date of the wall's construction

The wall was dated to c. AD 65–80 following the excavations at the Culver Street site in the 1980s (Crummy 1992, 62–4). The most important sherd is a piece of plain terra sigillata stamped Silvinus which was in a dump of unused septaria in the construction level for the wall (Crummy 1984, 70–3). With the publication of the pottery report in 1999, the sherd was dated slightly later to AD 70–85 (Symonds and Wade 1999, 130, S494). Even so, a date of c. 70–85 would make the wall the earliest of its kind in Britain. Thus we need to consider whether or not such date would be anomalous either in terms of the wall's structure or in relation to colonies elsewhere.

The stratigraphic relationships of the wall and the nearby deposits were reviewed in 1999 in relation to the date of the wall's construction (Crummy 1999, 95–100). The details and argument will not be repeated here, but the key point to note is that, in three of the four sections

dug since the 1960s, the construction of the wall stratigraphically post-dated the Boudiccan destruction and was early in the post-Boudiccan sequences. Although there were no Boudiccan layers in the fourth section (i.e. at Lion Walk), the wall construction seemed to be stratigraphically early nevertheless.

In Gaul, walls with brick courses and 'petit appareil' as at Colchester are held to be especially characteristic of the late 3rd century, and of a type which does not appear before the early 2nd century (Adam 1994, 142; Ward Perkins 1981, 223). A notable exception to this assertion is the Flavian amphitheatre at Fréjus, but the anomaly is ascribed to the colony's proximity to Italy (Adam 1994, 341, n 54) where 1st-century examples occur (e.g. in Pompeii: Adam 1994, 141-42). However, despite the evidence in Gaul, brick courses are certainly well attested in Britain before the end of the 1st century, e.g. the legionary bath-house at Exeter (before c. AD 75; Bidwell 1979, 148-49), and the 'proto-forum' (Philp 1977, 17) and elsewhere in London (Milne 1985, 28, 73-5). Much nearer at home is the podium of the Temple of Claudius at Colchester, which has courses of complete bricks in its outer facing.

Despite imprecision generally in the dating of Roman town walls and, indeed, the difficulty of establishing a town's status (Salmon 1969, 158), there is a case that Roman colonies in western Europe, certainly veteran colonies, were normally provided with a wall when they were founded or soon afterwards. P-A Février (1969) argued for this view on the basis of the Augustan colonies in Gaul. In western Europe, colonies founded under Caesar or Octavian/Augustus thought to have primary walls are Aosta, Arles, Augst (early but symbolic), Barcelona, Fréjus, Lyon, Mérida, Orange, Saragossa, Spello, Turin, and Valence. Other places with Augustan walls are Autun (but not a colony), Nîmes (promoted), and Vienna (a Latin colony under Augustus). Later foundations are few in number and more problematic, but nevertheless most relevant and telling in terms of Colchester. Five post-Augustan examples can be identified in Gaul and Britain (apart from Colchester and titular colonies), and all turn out to have had primary walls. The walls at Cologne, Avenches and Xanten are dated to c. AD 50, AD 72-77, and AD 105 respectively, and thus belong the very earliest years of their colonies (see also Carroll (this volume) for Cologne). In Britain, the two veteran colonies at Lincoln and Gloucester, like the earlier colony at Colchester, were reused legionary fortresses. The legionary ramparts at both places were refaced in stone so that, in effect, the new colonies each had a stone town wall from the outset (Jones 1999, 102; Hurst 1999, 114). Leaving aside titular colonies (notably Trier), the only colony in Gaul or Britain that I have been able to identify as apparently not having a primary wall is Colchester. This is a very rough and ready survey. There are maybe seven or so colonies in Gaul (i.e. Apt, Beziers, Carcassone, Chateau-Rousillon, Die, Nyon, and Toulouse) where relatively little is known, and some

of these may turn out to have only had a secondary wall or even no wall at all. And of course, there are uncertainties in identifying the precise status of towns (Salmon 1969, 158) and in dating walls generally. Nevertheless, it would still seem that the new colony at Colchester must have been unusual in its absence of stone defences, even as late as the mid-1st century AD.

Tacitus clearly agreed, and put the absence of a wall at Colchester down to neglect. He commented that it was easy for Boudicca and the Britons to destroy the colony at Colchester, because it did not have a wall (nullis munimentis saeptam: Annals xiv.xxxi), and that the military commanders were more concerned with the provision of amenities than defences (dum amoenitati prius quam usui consulitur: Annals xiv.xxxi). Tacitus' statement has been corroborated by excavation, and the 'amoenitati' identified as public buildings. The evidence for the corroboration has been described and discussed in print on several occasions. Essentially, excavations at Balkerne Lane and Lion Walk showed that the defences of the legionary fortress were backfilled in the AD 50s without replacement, so that the Temple of Claudius and other public buildings could be erected on the eastern side of the new town (Crummy 1984, 5-9; 1999, 89-93).

The Roman authorities would no doubt would have undertaken a major review into the causes of the Boudiccan uprising when the situation settled, and Tacitus is likely to have repeated a conclusion from such a review. Although Tacitus does not tell us that the colony at Colchester was given its wall immediately after the revolt, his statement about its absence is poignant nevertheless. Given that an unwalled veteran colony would have been anomalous, and in view of the trauma caused by the Boudiccan uprising, it would not be surprising to find that the colony at Colchester was finally given a wall, and that this event occurred in the years soon after AD 60/1.

An interesting feature of the surviving stretch of town wall incorporating the Balkerne Gate is not just the evidence for it being built in sections, but that these sections were apparently raised concurrently by different gangs. If this were true of the whole wall, then it would mean that maybe something like 50 to 75 different gangs were involved, assuming an average length of 40–60m for each section (as in the vicinity of the Balkerne Gate). A work-force of this size would be consistent with a legion and its sixty cohorts, and the scale of the work would be of an order which, to judge by Hadrian's Wall, a legion might complete in a season (Breeze 1982, 87–8).

Thus the building of the wall at Colchester is likely to have been bound up with the refounding of the colony after the end of the Boudiccan uprising. The work could conceivably have been done in under a year by a single legion, in which case we might expect the wall to have been built sometime in the early 60s. However, the Silvinus stamp from the wall's construction levels points to a later, more protracted programme of work. Brenda Dickinson (pers. comm. in 2001) feels that, although the stamp could

be as early as AD 65, the vessel is more likely to be early to mid-Flavian. Perhaps, then, the broken brick in the wall really is all reused material after all, and the construction of the wall went hand in hand with the reconstruction and replacement of public buildings in the newly refounded colony. If this is correct, then the scale of the public buildings needed to produce enough reusable brick for a wall almost 3,000m long must have been enormous, and equivalent in area to several insulae. Prime candidates for the locations of such buildings are *Insulae* 22, 29, and 30. The buildings concerned would presumably include the legionary bath-house retained for the new colony (as for example at Exeter) and maybe porticos or other structures around the precinct of the Temple of Claudius. Of course, we must ask why the reused material was not incorporated in the post-Boudiccan buildings. Maybe complete bricks were needed for the new work, or maybe the demolition works and the construction of the town wall were integral, whereas the construction of replacement buildings followed later. Clearly future archaeologists in Colchester will have plenty to do to sort out these issues.

Although dating the wall precisely is always likely to be difficult, there might be a way forward. A large part of the wall on the north side of town is in an area where the water-table is close to the surface, so that, like the walls at Xanten and Avenches, and the riverside wall at London, it may here have been built on wooden piles. If so, the piles will almost certainly be well preserved and suitable for dating by dendrochronology.

Acknowledgements

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Bibliography

- VCH. *The Borough of Colchester* (ed. J. Cooper, 199 History of the County of Essex, **9**.
- Adam, J-P., 1994. Roman building: materials and (London).
- Bedon, R., Chevallier, R. and Pinon, P., 1988. Arc urbanisme en Gaule romaine, 2, Lurbanism romaine.
- Bidwell, P. T., 1979. The legionary bath-house and forum at Exeter, Exeter Archaeol Rep. 1 (E.
- Breeze, D., 1982. The northern frontiers of Ron (London).
- Crummy, P., 1980. The temples of Roman Colche Rodwell (ed.) *Temples, churches, and relig* research in Roman Britain, BAR Brit Ser, (Oxford).
- Crummy, P., 1984. Excavations at Lion walk, Ball and Middleborough, Colchester, Essex, Colchest Rep 3 (Colchester).
- Crummy, P., 1992. Excavations at Culver Street, School, and other sites in Colchester 1971–85. Archaeol Rep 6 (Colchester).
- Crummy, P., 1999. Colchester: making towns out of and the first urban fortifications in Britain. In Hu 88–100.
- Crummy, P., (ed) 2001. Colchester Archaeological Treport.
- Dunnett, B. R. K., 1971. Excavations in Colchester *Trans Essex Archaeol Soc* 3rd ser, **3**, 1–106.
- Février, P. A., 1964. Enceinte et colonie, *Riv di Stud* 277–86.
- Frere, S. S., (ed) 1988. Roman Britain in 1987. I. Sit *Britannia* **19**, 416–84.
- Hull, M. R., 1958. *Roman Colchester* Rep Res Com-London **20**.
- Hurst, H., (ed) 1999a. The coloniae of Roman Estudies and a review, J Roman Archaeol Supp
- Hurst, H., 1999b. *Topography and identity in Glev* In Hurst (1999a), 113–35.
- Jones, M. J., 1999. Roman Lincoln: changing pers Hurst (1999a), 101–12.
- Milne, G., 1985. The port of London (London).
- Philp, B. J., 1977. The forum of Roman Londo *Britannia*, **8**, 1–65.
- Salmon, E. T., 1969. *Roman colonization under t* (London).
- Symonds, R. P. and Wade, S., 1999. Roman potte excavations in Colchester, 1971–86, Colchest Rep 10 (Colchester).
- Ward-Perkins, J. B., 1981. Roman imperial a (Harmondsworth).