

# LATE ROMAN TOWN WALLS IN GAUL

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The problems raised by the steadily increasing amount of information about the defences of Romano-British towns and by the consequent revision of long-established theories as to their dates of construction have recently attracted much interest. It seems appropriate, therefore, to survey the present state of knowledge about the late Roman town walls of Gaul, where the different fate suffered by the countryside during the 3rd century brought about the erection of new defences strikingly unlike the majority of those then existing in Britain. The area covered by this survey comprises France and Belgium, as well as parts of Germany, Holland and Switzerland, but the towns of the *massif central* and of Mediterranean France will not be treated in any detail, since they were less affected by the calamities which overtook the north, nor will much be said about the fortifications of the eastern frontier which, from about 260 onwards, ran along the Rhine. It is the town walls of northern and western Gaul which are the principal subject.<sup>1</sup>

An appreciation of the historical background is essential for understanding the Gallic walls, but fortunately much more is known of events in Gaul during the 3rd and 4th centuries than about happenings in Britain. Although the raid by the Chauci in A.D. 174 had disturbed Belgica and the conflict between Severus and Albinus in 196/7 had damaged the prosperity of Lyons and the Middle Rhone area, the interior of Gaul had enjoyed wellnigh unbroken peace from A.D. 70 until 254, when the first serious invasion of barbarians devastated the district between the frontier and the Saône-Meuse line. In 259 and 275/6 two more incursions, each more destructive than the previous one, affected most of Gaul—the numerous coin hoards hidden during this period when the ‘Gallic Emperors’ attempted to rule their provinces independently give an idea of the extent of insecurity and of the course of the invaders.<sup>2</sup> Probus, and then Constantius, worked to restore order, but the latter had to cope not only with barbarians and Bagaudae but also with Carausius, who from 289 to 293 ruled part of Gaul as emperor, in addition to Britain. Prosperity recovered

<sup>1</sup> The essential works on this subject are: E. Anthes, *Spatrömische Kastelle und feste Städte im Rhein und Donaugebiet*, *Rom. Germ. Komm.* X (1917), 86ff.; A. Blanchet, *Les Enceintes romaines de la Gaule* (1907); A. Grenier, *Manuel d'archéologie gallo-romaine I* (1931), 362ff. (Vol. V of J. Dechelette, *Manuel d'archéologie*.); W. Schleiermacher, *Der obergermanische Limes und spatrömische Wehranlagen am Rhein*, *Rom. Germ. Komm.* XXIII (1943-50), 133ff.; and R. E. M. Wheeler, *The Roman Town-walls of Arles*, *J.R.S.* XVI (1926), 174ff. Details of the few towns in Belgium, Holland and Switzerland can be found in J. Breuer, *La Belgique Romaine* (1943); A. W. Byvanck, *Nederland in den Romeinischen Tijd* (1943); F. Staehelin, *Die Schweiz in Römischer Zeit*, 3rd ed. (1948); and H. van de Weerd, *Inleiding tot de Gallo-romeinse Archeologie der Nederlanden* (1944). I. A. Richmond, *Antiquity* V (1931),

344ff. corrects Grenier, and the articles by R. Laur-Belart and F. Oelmann in *The Congress of Roman Frontier Studies*, 1949. ed. E. B. Birley (1952), 55ff. and 80ff. supplement Anthes and Schleiermacher.

<sup>2</sup> That the distribution of coin-hoards of this period reflects the successive disturbances and invasions has been demonstrated by I. J. Manley, *The Effects of the Germanic Invasions in Gaul*, 236-286 A.D. (Univ. of California Pubs. in History, XVII, 2 (1934)), and H. Koethe, *Zur Geschichte Galliens in Dritten Viertel des 3. Jahrhunderts*, *Rom. Germ. Komm.* XXXII (1942), 199ff.; see also P. van Gansbeke, *Les trésors monétaires d'époque romaine en Belgique*, *Revue belge de Numismatique* CI (1955), 5ff

under Constantine, yet fresh efforts were needed to repel Franks and Alemanni from the frontier zone: from 356 to 360 Julian pacified Gaul again. Valentinian I spent his reign in reconstructing the defences along the Rhine, but the aggressive policy which accompanied his building programme did not deter the Germans from still another invasion. This his son hurled back in 378, and from then on there were no further serious barbarian attacks on Gaul until the frontier line was finally broken in 406/7.

### EARLIER TOWN DEFENCES

Before the 3rd-century invasions apparently very few Gallic cities beyond the boundaries of the Republican Province had any defences at all (fig. 1). Of those which were fortified, all but two were near the frontier, where a German raid was always a possibility. The exceptions are Lyons<sup>1</sup>—only the bare fact that it possessed walls is known—and Autun,<sup>2</sup> where much of the Augustan circuit is still traceable. The other towns known to have received defences before A.D. 250 are Avenches,<sup>3</sup> Cologne,<sup>4</sup> Heddernheim,<sup>5</sup> Ladenburg,<sup>6</sup> Tongres,<sup>7</sup> Tournai,<sup>8</sup> Wimpfen,<sup>9</sup> and Xanten.<sup>10</sup> The earliest of this group to be fortified was Cologne (c. A.D. 50), followed by Avenches (c. 74), Xanten (c. 110), Tongres (2nd century), Tournai (c. 200), and the three settlements in the *agri decumates* (all c. 215). The walls of Augst<sup>11</sup> near Basle may have been in course of construction when the disastrous invasion of 259 overtook the city, for only two lengths of wall, one tower and two pairs of gate-towers without the connecting arches have been found, and these were apparently abandoned unfinished.

The features which most clearly distinguish these walls from those built after the invasions are the much greater area enclosed, for only two of the towns mentioned above were smaller than 100 acres and the others range from 160 to 500 acres in size, and their thickness (5 to 7½ ft.), since all, except those of Cologne, were backed with an earth rampart. Other characteristics are their monumental gateways, with impressively-decorated multiple portals at the main approaches, and the towers, which were either purely internal or were circular, standing astride the line of the walls at wide intervals. Autun, Cologne, and Tongres had hollow round towers averaging 30 ft. in diameter; those at Augst and Avenches were semicircular, projecting internally; while those at

<sup>1</sup> P. Wuilleumier, *Lyon: Metropole des Gaules* (1953), 57f, fig. 1.

<sup>2</sup> Grenier, *op. cit.*, 337ff.; H. Kahler, *Jahrbuch des Deutschen arch. inst.* (1942), 290ff. Suggestions that earlier walls existed at Tours and Evreux are made by J. Boussard, *Rev. Et. Anc.* L (1948), 313, and C. E. Stevens, *Rev. Arch.* (1938), 399ff.

<sup>3</sup> Staehelin, *op. cit.*, 205ff. 604ff.

<sup>4</sup> O. Doppelfeld, *Die römische Stadtmauer von Köln in Kölner Untersuchungen* ed. W. Zimmermann (1950), 3ff.; There is a full discussion of the recent dating evidence on p. 13ff. and it seems likely that the wall may replace an earlier rampart to which the ditch belongs. H. Schmitz, *Colonia Claudia Ara*

*Agrippinensium* (1956), 147f. would put the walls earlier than c. 50.

<sup>5</sup> E. Linckenfeld, *Pauly-Wissowa R.E.* XVII, 1 (1936), 183ff.; K. Woelcke, *Germania* XXII (1938), 161ff.

<sup>6</sup> Anthes, *op. cit.*, 163; H. Mylius, *Germania* XXX (1952), 67.

<sup>7</sup> Van de Weerd, *op. cit.*, 66ff.

<sup>8</sup> H. Amand, *L'Antiquité Classique* XX (1951), 384ff; XXIV (1955), 128, 141f.

<sup>9</sup> Anthes, *op. cit.*, 162f.

<sup>10</sup> P. Steiner, *Xanten* (1911), 17ff.

<sup>11</sup> R. Laur-Belart, *Führer durch Augusta Raurica* (1948), 30ff.

Wimpfen and Xanten were rectangular and trapeze-shaped respectively. No certain details are known of interval-towers at Heddernheim, Ladenburg, or Tournai, but the former had internal rectangular gate-towers. Single contemporary ditches have been found at most of these places; that around Cologne was 13 feet from the walls, was 16 ft. deep, and from 27 to 40 ft. wide. It should be mentioned that none of these walls seems to have had either the levelling courses of tiles or the re-used blocks, which, as will be seen, are so characteristic of the later defences.

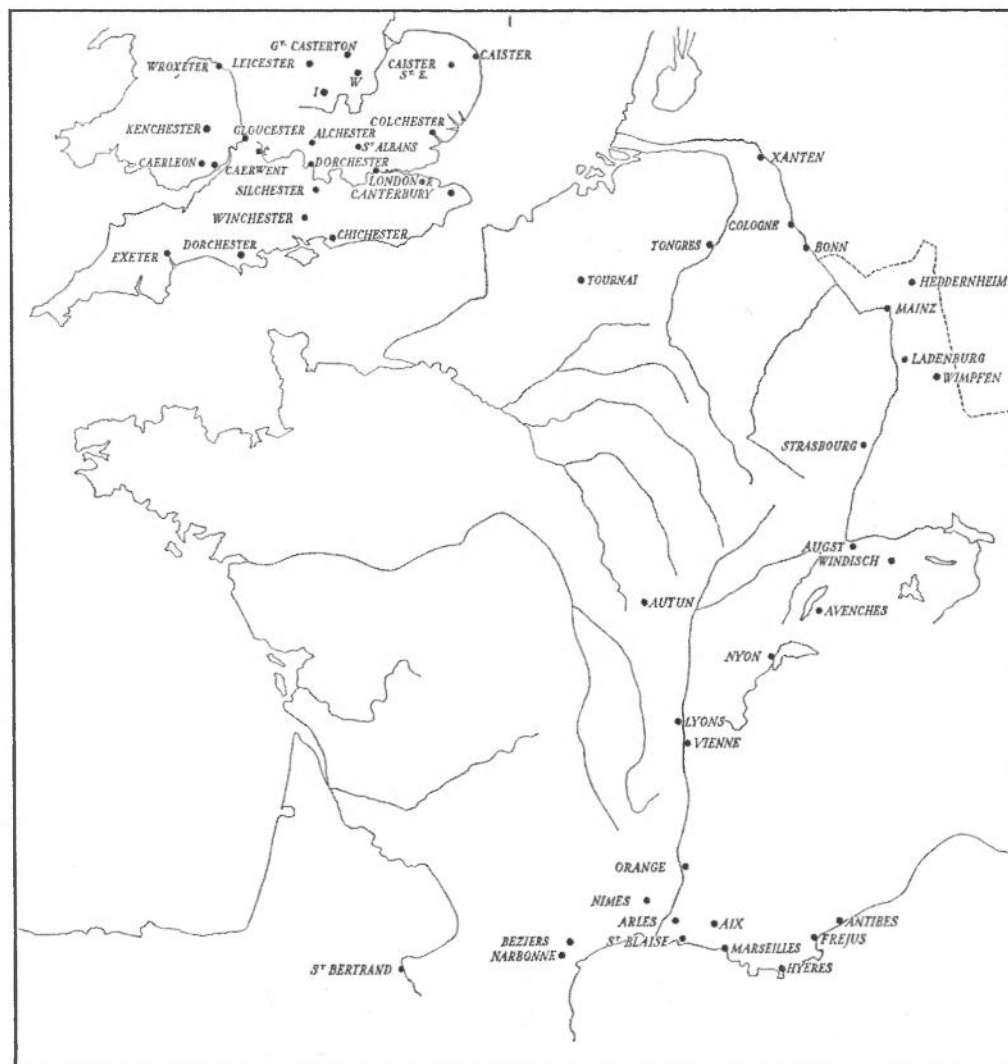


Fig. 1. Towns and fortresses with stone walls built before A.D. 260  
(In Britain C=Cirencester, I=Irchester, R=Rochester, W=Water Newton)

## THE LATER TOWN WALLS

Fortifications of a very different kind were subsequently erected around the cities of northern and western Gaul, but not until these previously-undefended centres had been burned and ruined by one or other of the roving bands of invaders or pirates. These later walls, with their greater thickness and projecting bastions, can readily be divided into two main groups, of which the characteristics can best be understood by the description of individual sites. In each group, therefore, six examples have been selected for description, and it will also be necessary to give a short account of those forts where similar features occur. The western group of towns is by far the larger: consequently summary accounts of representative sites from that group are given first.

## BORDEAUX (fig. 4)

The rich city of Burdigala lay on the left bank of the Garonne, where two rivulets flowed into it. The walls enclosed the southern part of the earlier city, forming a correctly-orientated rectangle 2296 by 1476 ft., 80 acres in extent.<sup>1</sup> They were 13 ft. thick and over 30 ft. high, with the lower 20 ft. entirely composed of re-used masonry, mostly tombstones, and including blocks 7 ft. long. This part was unmortared, but above it the wall was built of rubble concrete faced with ashlar cubes and having triple tile courses above every seventh or ninth stone course. These tiles only penetrated to the depth of one tile into the core, and six such bands have been noted in the upper part of the walls.

Solid semi-circular towers, 30 ft. wide and projecting 12 to 15 ft. from the curtain wall, were erected at intervals of about 70 ft. There were twelve or thirteen of these on the long (north and south) sides and eight on the short sides, apart from the four angle towers. These were circular, perhaps hollow, and 65 ft. in diameter. No details of the main gates are available, but they may have been simple arches protected only by the adjoining wall towers. In addition to the water-gate on the east, by which ships could enter the basin enclosed within the defences, there were probably two west gates and one in each of the other sides. A small postern 10 ft. wide and 15 ft. high seen in the south wall may have been opened later. The medieval name of *Porte Dijoux*, given to the north-west gate, may represent the Latin *Porta Iovia*. The enclosed harbour, formed in the mouth of the Devez stream, measured about 820 by 330 ft.

The walls were certainly built earlier than about 375, when Ausonius celebrated them in verse,<sup>2</sup> and later than 269, for coins of Claudius II and dated inscriptions of 237 and 258 have been found in the base. Only fragments of them now remain.

## CARCASSONNE (figs. 3 and 4)

The importance of the Roman walls of Carcassonne has been obscured by the considerable alterations and imposing additions made to them in the 13th century, and by their ascription for a long time to the Visigoths.<sup>3</sup> The site of Carcaso was a high plateau with steep slopes down to the river Aude on the west, and the area enclosed was an irregular oval of 17½ acres, 1,145 by 585 ft. When the outer ring of walls was added the slope outside the existing circuit was scarped vertically, and so the Roman foundations now appear above 10 ft. of medieval walling. The foundation layer, probably originally partly concealed in a trench, consisted of seven stone courses laid on a thick bed of gravelly concrete. Above this 6-ft. thick footing

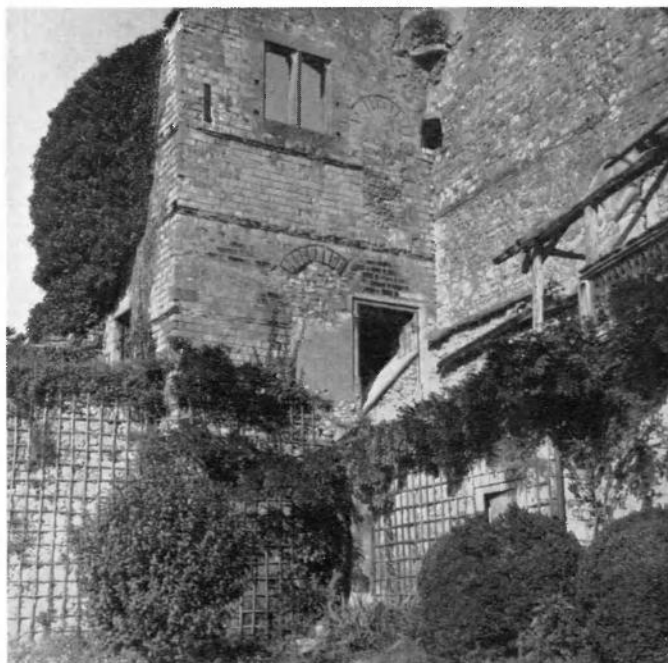
<sup>1</sup> C. Jullian, *Les Inscriptions romaines de Bordeaux*, II (1890), 279ff., 590ff.

<sup>2</sup> Ausonius, *Ordo Nobilium Urbium*, XX Burdigala, 13ff.

<sup>3</sup> J. Poux, *La Cité de Carcassonne*. I (1922), 117ff. A. Grenier, *Carte Archeologique de la Gaule romaine: Aude* (1956), 166f. for bibliography and some cautions on the walls. The restored plan used in fig. 4 is after Poux.



A. Outer side of a tower of the north wall

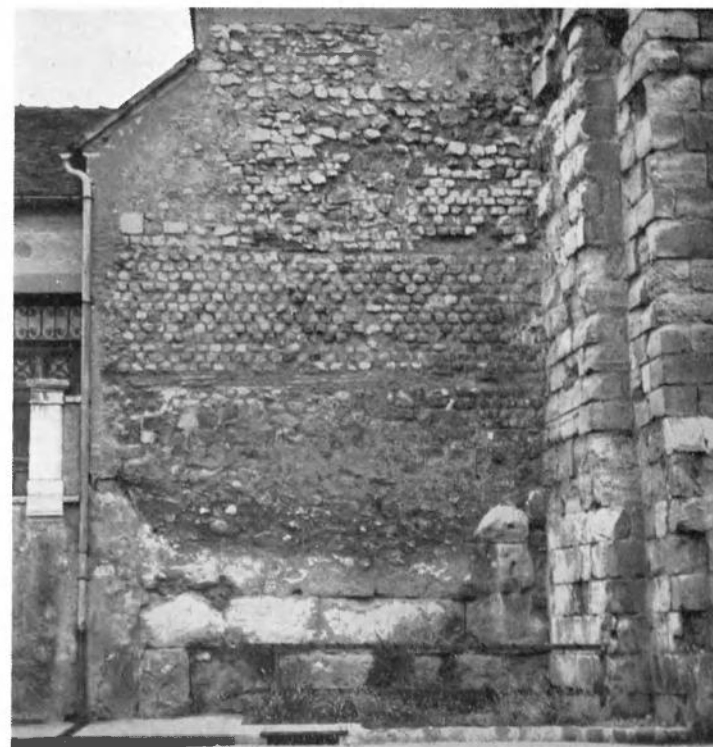


B. Inner side of a tower from the Castle grounds

SENLIS



A. A tower on the south side



B. Detail of walling

*(Photographs by J. M. C. Tynbee)*

SENS

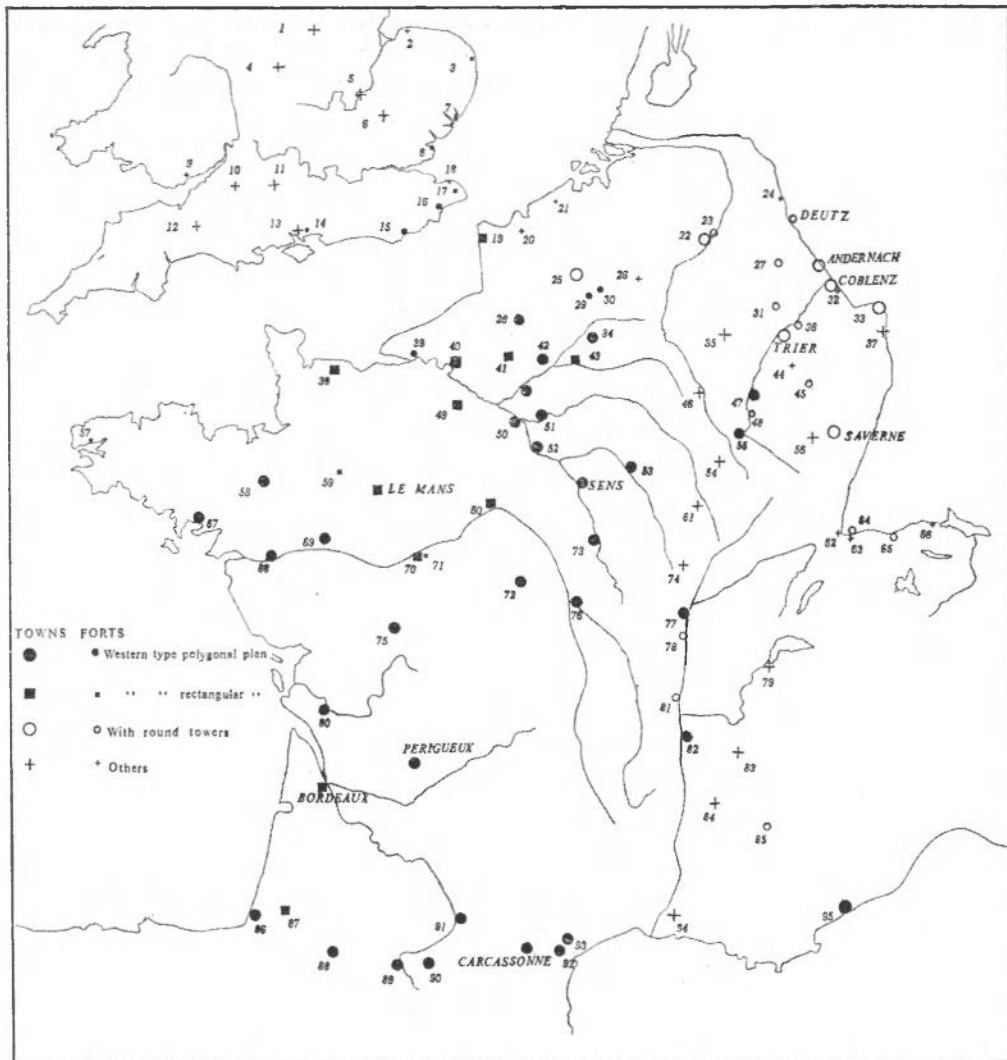


Fig. 2. Towns and selected forts with walls built after A.D. 260  
(see Appendix)

1. Castle Hill. 2. Brancaster. 3. Burgh Castle. 4. Witherley. 5. Godmanchester. 6. Great Chesterford.
7. Walton Castle. 8. Bradwell. 9. Cardiff. 10. Bath. 11. Mildenhall. 12. Ilchester. 13. Bitterne. 14. Portchester.
15. Pevensey. 16. Lympne. 17. Richborough. 18. Reculver. 19. Boulogne. 20. Cassel. 21. Oudenburg.
22. Tongres. 23. Maastricht. 24. Haus Bürgel. 25. Tournai. 26. Liberchies. 27. Jünkerath. 28. Amiens.
29. Famars. 30. Bavai. 31. Bitburg. 32. Boppard. 33. Mainz. 34. Laon. 35. Arlon. 36. Neumagen.
37. Worms. 38. Bayeux. 39. Lillebonne. 40. Rouen. 41. Beauvais. 42. Noyon. 43. Soissons.
44. Pachten. 45. Saarbruck. 46. Verdun. 47. Metz. 48. Scarponne. 49. Evreux. 50. Paris.
51. Meaux. 52. Melun. 53. Troyes. 54. Grand. 55. Toul. 56. Saarbours. 57. Brest. 58. Rennes.
59. Jublains. 60. Orleans. 61. Langres. 62. Basle. 63. Kaiseraugst. 64. Wyhlen. 65. Zurzach.
66. Eschenz. 67. Vannes. 68. Nantes. 69. Angers. 70. Tours. 71. Larçay. 72. Bourges. 73. Auxerre.
74. Dijon. 75. Poitiers. 76. Nevers. 77. Chalon-sur-Saone. 78. Tournus. 79. Geneva. 80. Saintes.
81. Anse-sur-Saone. 82. Vienne. 83. Grenoble. 84. Die. 85. Gap. 86. Bayonne. 87. Dax.
88. Lescar. 89. St. Bertrand. 90. St. Lizier. 91. Toulouse. 92. Narbonne. 93. Beziers. 94. Arles.
95. Antibes.

the base of the towers and of parts of the curtain wall was faced with one or more courses of large blocks 1 to 2 ft. high. Since most of the footings are secured from investigation by the lofty walls above, it is uncertain whether any of this material was re-used.

The wall core, constructed in stages of about 3 ft., was of alternate layers of mortar and rubble, with the rectangular ashlar facing-blocks forced into a sticky layer of concrete on either face. Tile courses, generally only one or two tiles thick, are visible on the outer facing only, and never penetrated deeper into the core. They are generally about  $4\frac{1}{2}$  ft. apart, but vary greatly in number in different sections of the facing. The wall has an average thickness of 10 ft. and was generally about 23 ft. high.

Originally there were probably thirty towers set about 70 ft. apart. Seventeen still exist with about a third of the wall circuit, and all, with one rectangular exception, were semi-circular and solid at the base, 18 to 20 ft. wide, projecting 10 to 12 ft. outside the curtain and 3 to 5 ft. within. Above the parapet level they were hollow, containing in each a room entered from the wall-walk by two tile-arched doorways, both 7 ft. high and  $3\frac{3}{4}$  ft. wide, and with three round-headed windows in the curved outer wall (fig. 3). These were 4 ft. high and 3 ft. wide, splaying out to 4 ft. wide inside the towers. There was probably a second, similar storey above, nowhere preserved.

Of the three gates the main, north-eastern, one was probably flanked by bastions, and another was apparently 11 ft. high and 7 ft. wide. Two square-headed posterns survive, both similarly placed near a minor gate with a tower on the right of the exit, and both being 6 ft. high and 3 ft. wide (fig. 3). Contemporary drains pierce the curtain wall in several places, since the ground surface within the defences was higher than that outside.

#### LE MANS (fig. 4)

At least half the total circuit still survives of the late Roman walls of Le Mans, in places to parapet-walk level.<sup>1</sup> They formed a slightly irregular rectangle measuring 1,640 by 660 ft., enclosing a 25-acre spur between the river Sarthe on the west and a tributary stream on the east and south. The base, 13 to 14 ft. thick, was of large re-used ashlar blocks, including capitals and cornices, set on a thin bed of concrete and only sunk slightly into the old ground surface. Above this solid foundation, about 5 ft. high, the wall core of rubble concrete was faced with cubes of brown sandstone, 4 to 5 ins. square, with triple courses of red tiles at  $2\frac{1}{2}$  to 3 ft. intervals. Patterns were made in the facing by the use of differently-coloured blocks. Semicircular or U-shaped towers, solid at the base, projected 20 ft. from the walls at intervals of 80 to 100 feet. They were 25 ft. in diameter and rose to a height of at least 50 ft., since in two cases the two hollow upper storeys remain, each once having had three arched windows. The lower room was entered from the parapet walk which is marked by a band of six tiles in the facing 30 ft. above ground level. Although only twelve now survive, there were probably once thirty-six of these towers in all: twelve on each long side, four at the angles, and four on the short sides.

Less is known of the gates, of which there were probably six. All were apparently single openings with arched heads of stone and tiles. Two are still visible on the river front, and one, la Grande Poterne, is still in use. It is 10 ft. wide and was once about 17 ft. high, set 10 or more feet above the external ground level and reached by steps. The other, discovered in 1953, is only 6 ft. wide and 11 ft. high (fig. 3). It is interpreted as a water-gate leading to a quay.<sup>2</sup> A more important gateway in the east wall had a wide arch flanked by guardrooms, or possibly by narrow passages. The only indication of the date of the defences, apart from the re-used stonework, is the discovery that at one point the footings overlay a cremation burial of about A.D. 200.<sup>3</sup>

<sup>1</sup> R. Charles, *Bull. de la Soc. Hist. et Arch. du Maine*, IX (1881), 107ff. 250ff; X (1882), 325ff; R. Triger, *ibid.* LIV (1926), 267ff.; R. M. Butler, *J.R.S.* XLVIII (1958), 33 ff.

<sup>2</sup> P. Cordonnier-Detric, *Gallia*, XII (1954), 172ff. figs. 6-8.

<sup>3</sup> P. Cordonnier-Detric, *ibid.* IX (1951), 97f.



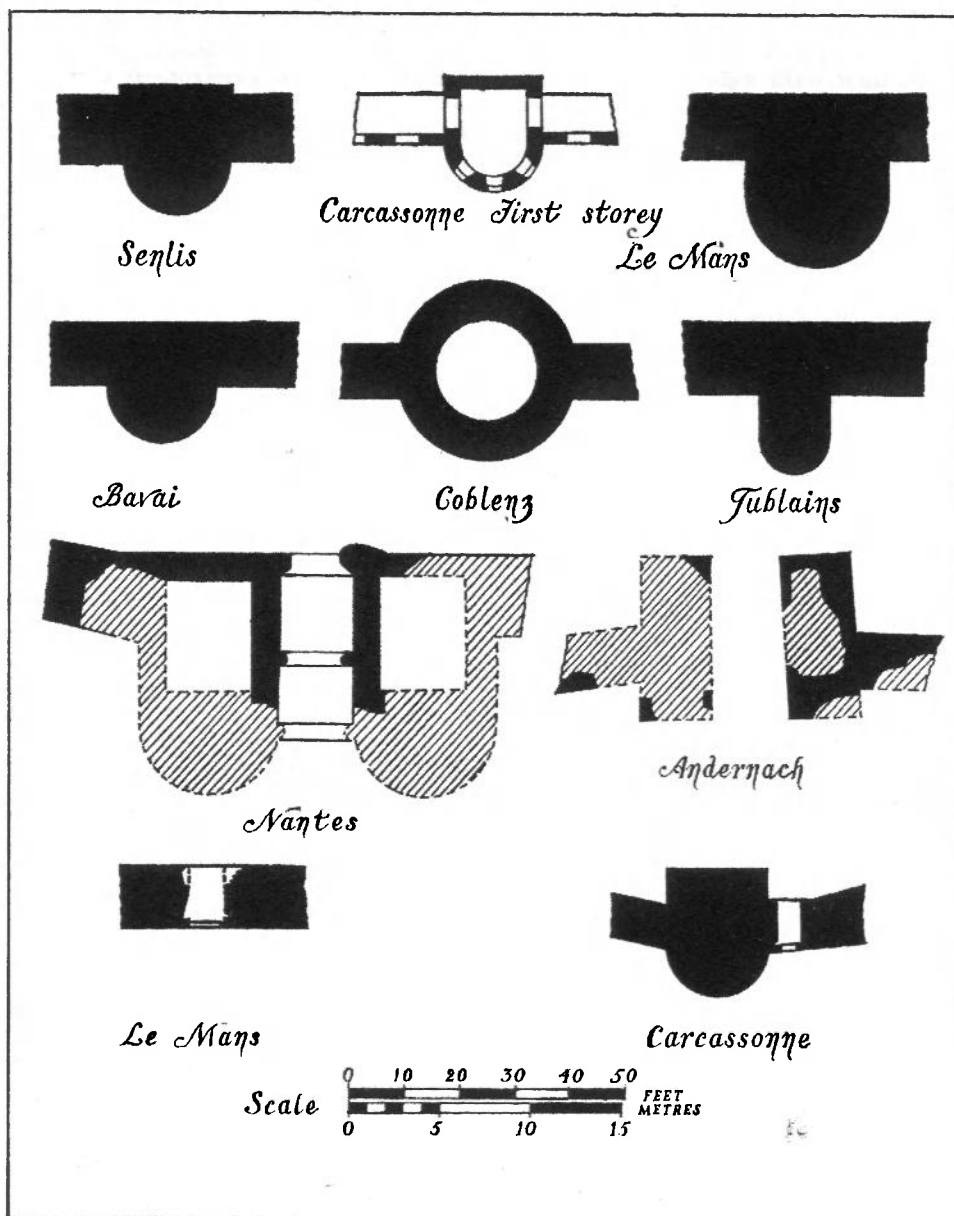


Fig. 3. Towers and Gateways

## PÉRIGUEUX (fig. 4)

The earlier city of Périgueux was built on the slopes to the north of the river Isle, but the new walls only enclosed 14 acres at the highest point, a site probably determined by the desire to incorporate the amphitheatre in the irregular circle, from which it projected.<sup>1</sup> At the base these walls were 20 ft. thick, and for a height of 24 ft. were entirely composed of masonry from the ruins of Vesunna, including marble lintels, columns, altars and facing-stones from the main temple. It is surprising that its circular tower-like cella was not incorporated in the circuit, since it still stands 80 ft. high, and is strongly built. However, it was left just outside the walls to the south, and the fragments of its decorative stonework were carefully fitted together without mortar above two foundation courses of rubble laid in a herringbone fashion. The upper 12 ft. of the wall were of rubble concrete faced with ashlar cubes, including patterns of alternating tiles and stone and the usual tile bonding-courses. The towers, probably twenty-three in number and set at 70 to 100-ft. intervals, were semicircular and solid, 27 ft. wide, and projecting 16 ft. from the walls.

There were three gates, but the southern, flanked by two towers, has gone, and only a single, much-battered arch remains of the north-western. It is 16 ft. wide, with simple decoration, but no sign of flanking towers. The east gate is said to survive below an earth bank: it had a single arch 16 ft. wide and 20 ft. high, flanked by hollow semicircular towers 20 ft. in diameter. These were built of stone blocks and were decorated with five simple pilasters on high bases and with a cornice above; the northern one had a curious postern opening into the inner room, perhaps a later alteration. Only the north gate, parts of the amphitheatre, and a length of the south wall still remain.

## SENLIS (Pl. IA and B and figs. 3 and 4)

The walled area of Senlis, on a low hill lying athwart the Paris-Soissons road, is in shape a polygon of oval form, measuring 1,035 by 799 ft., and enclosing 17½ acres.<sup>2</sup> The walls were 12 ft. thick and stood on a foundation of seven or eight courses of boulders, including re-used material from a temple of Jupiter. Above this footing they were of rubble concrete faced with carefully-dressed blocks of limestone, with a triple tile course to every ten or twelve of ashlar. They were 24 ft. in height to the parapet walk.

The towers (Pl. I and fig. 3), probably twenty-five or twenty-eight in number and 82 ft. apart, were solid and semicircular at the base, where their diameter was 20 ft., but projected as rectangles for 3 ft. within the walls. Above the parapet level they were hollow, 19 ft. in diameter, with two upper storeys, each 10 ft. high. The lower room was reached by two doors from the wall walk, and was lit by three round-headed windows in the outer curve and one set off-centre at the rear. These, like the windows of the upper storey, are 7 ft. high and 3 ft. wide, with alternate arch voussoirs of stone and tile.

There were six gates, of which the eastern was flanked by two bastions, and the northern by narrow rectangular buttresses projecting internally. The remaining gates had each but one flanking tower. An earlier rectangular building with walls 20 ft. thick adjoins the rear of the walls in the former castle grounds, where they are most easily examined. It is probably the base of a lofty tower-temple. The post-war excavations suggest that the defences are later than the invasion of 276.

## SENS (Pl. IIA and B)

The walls of Sens enclosed much of the 2nd-century city of Agedincum on a low east-west ridge with the river Yonne to the west.<sup>3</sup> They formed an irregular and elongated oval,

<sup>1</sup> M. de Favolle, *Congrès Arch. de France*, 1927, 9ff.; P. Barrière, *Gallia*, II (1944), 245ff. At Amiens, Tours and Trier the amphitheatres were similarly incorporated in the defences.

<sup>2</sup> C. Jullian, *Rev. des Ét. Anc.* V (1903), 35; G. Matherat, *Gallia*, V (1947), 438ff.; VI (1948), 453 ff.; VIII (1950), 220; XV (1957), 165ff. See also G. Matherat, *Bull. de la Soc. Nat. des Ant. de France*, 1942,

196ff. on the topography of the town before the invasions, and E. Éspérandieu, *Recueil général des Statues . . . de la Gaule Romaine*. XIV (1955, by R. Lantier), 18f. for re-used material from the walls.

<sup>3</sup> A. Hure, *Bull. de la Soc. des Sciences . . . de l'Yonne*, XCI (1937), 221ff.; Éspérandieu, *op. cit.*, IV (1911), 3ff.; *Gallia* XVI (1958), 313ff.

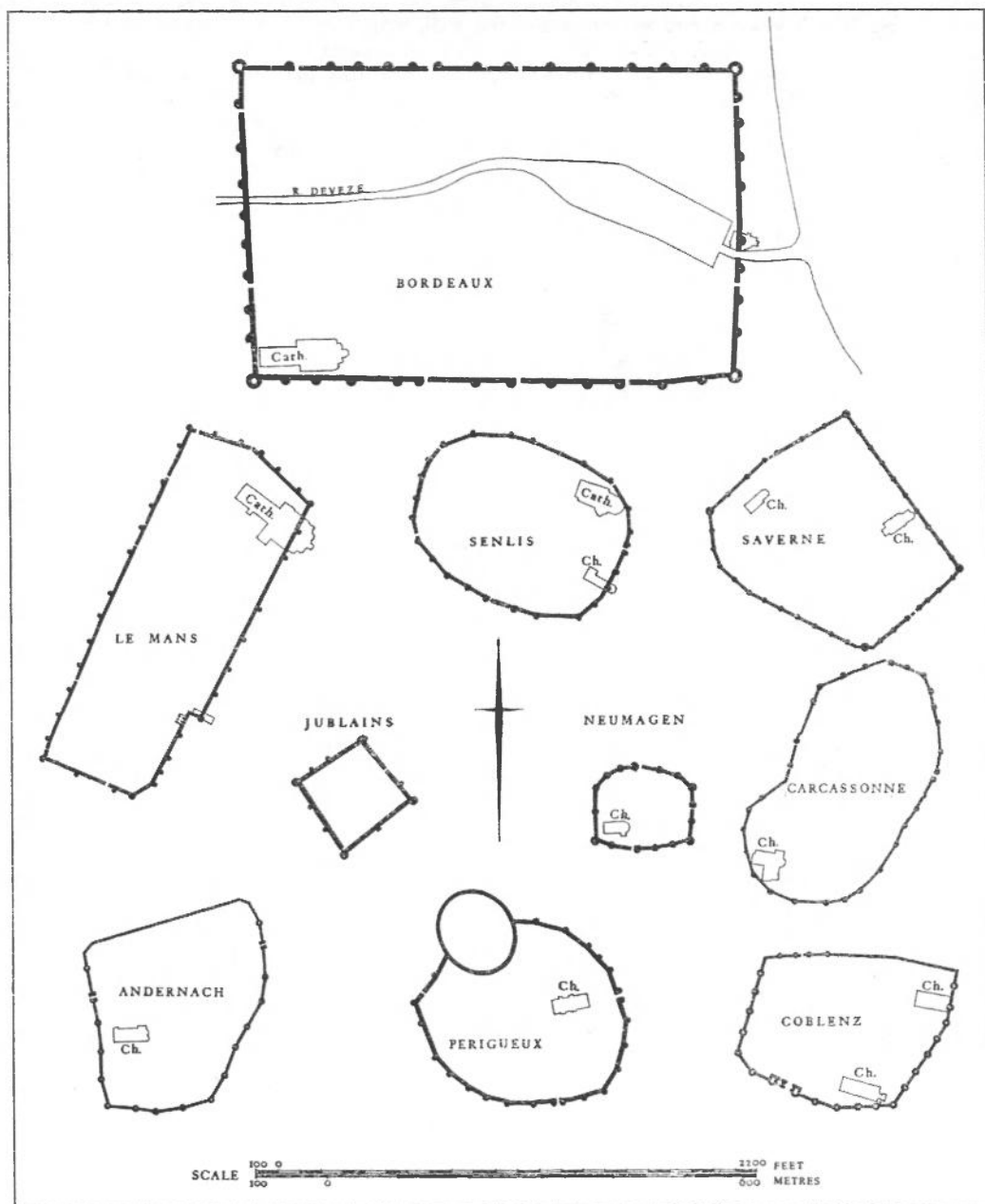


Fig. 4. Restored plans of late Roman town and fort walls in Gaul

measuring 3,120 by 1,560 ft. and 113 acres in area, having the old *cardo* and *decumanus* as its main axes. The lower eight to ten courses of the wall, which was 10 ft. thick, were formed of large blocks from earlier buildings (Pl. IIa). Many sculptures, column-drums, tombstones, and inscriptions have been recovered from demolished portions, including masonry recognised as coming from the public baths, from temples, from an ornamental archway, and from the amphitheatre. Above this massive and unmortared base the wall was of rubble concrete, including much re-used stonework, and was faced with small ashlar, with triple tile courses to every twelve of stone. There were probably thirty towers, set at 175-ft. intervals, but only one survives on the south side (Pl. IIb). This is semicircular and hollow, 20 ft. in diameter, but a round one 25 ft. across once stood at the north-western angle.

There were six gates, each flanked by two towers—one at each end of the central east-west street, and two on each side across the main north-south roads, although the *cardo* seemingly ended in a blank wall on those flanks. The numerous posterns, previously thought to be Roman, are now believed to be Carolingian, except for one on the south with a tile arch above a square-headed doorway. No ditches are known (none existed in the year 1358, when they had to be dug), and the Mondereau stream, which filled wet moats around the defences in the Middle Ages, was probably diverted in post-Roman times. The latest coins found in the wall masonry were of Postumus and Salonina, and the latest dated inscription was of 220.

#### FORTS OF THE WESTERN GROUP (Pl. III)

In addition to those places which still remained recognisable as towns, although the area enclosed was much smaller than that occupied by buildings before the invasions, there are a few sites in north-western Gaul where similar defences occur which can only be described as forts. At Bavai and Famars near Valenciennes the flourishing town of Bagacum Nerviorum and a local sanctuary, Fanum Martis, were replaced by *castella*,<sup>1</sup> while at Jublains near Mayenne walls of the western type surround the ruins of a formidable block-house, apparently built during the 3rd century to guard approaches to Noviodunum Diablintum, an important road centre with extensive temples, baths and a theatre.<sup>2</sup> At Lillebonne near Rouen a small fort seems to have been erected around the ruined theatre of the town of Iuliobona,<sup>3</sup> and at Brest walls and towers have been found under the medieval castle, presumably belonging to the east wall of a coastal fortress.<sup>4</sup> Finally, on a cliff-edge above the Cher, at Larçay,<sup>5</sup> a tiny rectangular fortlet measuring 246 by 131 ft. overlooked the road and aqueduct leading to Tours, 5 miles to the north-west, a city itself protected by fortifications of the same type.<sup>6</sup>

The same sort of walling as at Le Mans or Senlis can be seen at the best preserved of these forts: at Bavai, where the new defences enclosed the vaulted corridors below the forum, with sculptured fragments from its superstructure incorporated in their footings (Pl. IIIc, d); and at Jublains, though there the

<sup>1</sup> H. Biévelet, *Gallia*, I (1943), 159ff.; V (1948), 301ff.; XII (1954), 136ff.; XIV (1956), 120; E. Will, *ibid.* XV (1957), 152ff.; XVII (1959), 247ff. The writer has failed to find a satisfactory account or plan of the fortifications at Famars, and is indebted to H. Guillaume for a summary of the details so far as they are known.

<sup>2</sup> C. R. Smith, *Collectanea Antiqua*, III (1856), 103ff.; E. Laurain, *Les ruines gallo-romaines de Jublains* (1928), 22ff.; Oelmann, *op. cit.*, 91ff.

<sup>3</sup> R. Lantier, *Rev. Arch.* XXI (1913), 189f.; C. Jullian, *Rev. Ét. Anc.* XVIII (1916), 21 (doubting the real existence of a fort there). A. Grenier *Manuel* III, 895.

<sup>4</sup> *Congrès Arch.* LXIII (1898), 88; LXXXI (1914), 1ff.

<sup>5</sup> A. de Caumont, *Bull. Mon.* XXII (1856), 308f.; C. R. Smith, *op. cit.*, IV (1857), 8ff.

<sup>6</sup> H. Auvray, *Bull. trimestriel de la Soc. Arch. de Touraine*, XXVI (1937), 495ff.; XXVII (1938), 175ff.

facing-stones are granite and, out of six solid interval-towers, one is rectangular (Pl. IIIA, B) and one is circular, like those at Bradwell and Burgh Castle in England. The others are of the normal semicircular or U-shape, circular at the angles. In thickness the walls of these forts varied from 7 to 16 ft. and the bastions were on the average 20 ft. in diameter, projecting 10 to 12 ft. Famars apparently had twenty-four at 65 ft. intervals—sixteen existed in 1790 and three still remain—while the ten at Jublains, the seven surviving out of a probable eleven at Larçay, and the eight at Bavai are spaced at intervals varying from 50 to 180 ft. Nothing certain is known of their main gateways, but those at Jublains and Larçay were apparently single archways without flanking towers; the former fortification had also two posterns  $5\frac{3}{4}$  ft. wide.

#### FORTRESSES AND FORTS OF THE EASTERN FRONTIER

In the east of Gaul there was no such uniformity in the new defences, and it is often difficult to decide whether a wall circuit protected a town or a fort; most settlements near the frontier were part-military, part-civilian. Of the three great fortress-towns of the Rhineland, Cologne retained its Claudian walls repaired and strengthened with extra towers by Gallienus;<sup>1</sup> and the Trajanic defences of Strasbourg—a 3 ft. thick wall and an earth rampart—were not radically altered until Valentinian I added an outer facing 9 ft. thick with a foundation of re-used blocks, timber lacing in the concrete core, and at least fifty solid, semi-circular bastions,  $22\frac{1}{2}$  ft. in diameter and about 80 ft. apart, to replace the old internal turrets.<sup>2</sup> At Mainz, however, new walls replaced those of the legionary fortress, enclosing a roughly semicircular area of about 300 acres sloping down to the Rhine and measuring 4,920 by 2,950 ft.<sup>3</sup> These walls were 9 to 10 ft. thick, built of ashlar-faced rubble concrete on a foundation of re-used material, including tombstones. The towers were circular and solid, and there were probably four gates. The existence of a small harbour within the wall circuit has been suggested. Coins of Constantine I have been found in the footings, as well as an inscription of A.D. 231.

At both Cologne and Mainz new forts were built to guard the bridgehead on the right bank of the Rhine. Kastell opposite Mainz is only known from a representation of its bastioned walls on a medallion,<sup>4</sup> but at Deutz (Divitia) a fort measuring 505 by 499 ft., with ten hollow, circular towers 45 ft. in diameter, and two massive gateways across the road running eastwards from Cologne, enclosed sixteen barrack-blocks within walls  $11\frac{1}{2}$  ft. thick.<sup>5</sup> As an additional protection there was a ditch 45 ft. wide and 13 ft. deep 100 ft. outside the walls. An inscription shows that Constantine had the fort erected in A.D. 310.<sup>6</sup> Four

<sup>1</sup> See above 26, n.4, and C.I.L. XIII 8261.

<sup>2</sup> R. Forrer, *Strasbourg-Argentorate*, I (1927), 39ff.; J.-J. Hatt, *Strasbourg au temps des Romains* (1953), 13ff.; *Gallia*, VI (1948), 242ff. (a 3rd century fortlet near the fortress); VII (1949), 161ff. (stratigraphy inside the walls).

<sup>3</sup> G. Behrens, *Mainzer Zeitschrift*, XLVIII/IX (1953/4), 70ff. fig. 2, p. 73.

<sup>4</sup> G. Behrens, *op. cit.*, 72.

<sup>5</sup> Anthes, *op. cit.*, 92ff.; Oelmann, *op. cit.*, 95; F. Fremersdorf in A. Marschall, K. J. Narr and R. von Uslar, *Die vor- und frühgeschichtliche Besiedlung des Bergischen Landes* (Beiheft 3 of *Bonner Jahrbücher*, 1954), 159ff., figs. 147-50. The restored plan, fig. 147, can also be found in H. Schmitz, *op. cit.*, fig. 3 p. 241.

<sup>6</sup> C.I.L. XIII, 8502.

of the six towns discussed below also have circular towers set astride the walls and were entered by only two main gates across a main road; with them can be grouped eight small polygonal forts or fortified posting-stations, situated on roads radiating from Cologne, Lyons and Trier (see Appendix, 3b). Of these, Bitburg and Jünkerath have been dated by excavation to the first third of the 4th century,<sup>1</sup> and Neumagen near Trier, where so many fine gravestones have been found in the wall foundations, was called by Ausonius 'divine Constantine's famous fort'.<sup>2</sup>

The larger rectangular forts at Boppard,<sup>3</sup> Kaiseraugst near Basle,<sup>4</sup> and Pachten on the Saar,<sup>5</sup> with towers respectively hollow and semicircular, solid and pentagonal, and hollow and square, presumably belong to a different scheme or schemes of fortification. All three had 10-ft. thick walls, which included re-used material but lacked tile courses, and much still remains of those at Boppard, although they have been considerably robbed and patched. The twenty-eight towers, 25 ft. in diameter, were symmetrically placed at 89-ft. intervals, so that, besides the circular angle bastions, there were four on the short sides of the enclosure and eight on the long ones. The circular inner rooms, 12 to 14½ ft. across, although apparently divided into three floors, could only be reached from above. The towers at Kaiseraugst were 23 ft. wide, projecting 10 ft., but were fewer in number, for even though the north wall has been washed away by the river, at its largest the area enclosed must have been 2 acres smaller than at Boppard, which was 11¼ acres in extent, exactly twice the size of Deutz.

## TOWN DEFENCES

### ANDERNACH (fig. 4)

The walls of Andernach (Antunnacum) formed a polygon, with the Rhine valley road as the east-west axis and the river on the north.<sup>6</sup> The area enclosed measured 985 by 787 ft., and was 15 acres in extent. Tufa and slate foundations supported walls 10 ft. thick, with a core of coursed, mortared rubble, and medium-sized facing blocks. There were fifteen hollow, circular towers, 26 ft. in diameter and with walls 7 ft. thick, placed at intervals of 124 ft. One on the west had 3-ft. wide passages leading from the inner room to doorways opening both outside and inside the line of defences. The entrance on the town side was square-headed, though with a relieving arch above, and 6 ft. high; sockets for bars were found in the passage walls. No towers are known to have stood on the river front. There were two gateways across the main road; the western had a passage 13 ft. wide between solid rectangular towers each 12 ft. wide and 29 ft. deep, projecting on both sides of the wall (fig. 3). At the north-west a wall nearly 2 ft. thick was found 4 ft. within the main town wall, running parallel to it for a distance of 50 ft. A series of slots in both walls suggest that here a wooden stairway may have led to the parapet.

<sup>1</sup> H. Koethe, *Trierer Zeitschrift*, X (1935), 1ff., for Jünkerath; *ibid.*, XI (1936), Beiheft, 50ff., for Bitburg.

<sup>2</sup> Anthes, *op. cit.*, 101; H. von Massow, *Die Grabmalerei von Neumagen II* (1932), 1ff.; Ausonius, *Mosella*, 11.

<sup>3</sup> H. Eltester, *Bonner Jahrbücher*, L (1850), 53ff.; Anthes, *op. cit.*, 100ff.; W. Haberey, *B.J.* CXLVI

(1941), 323ff.

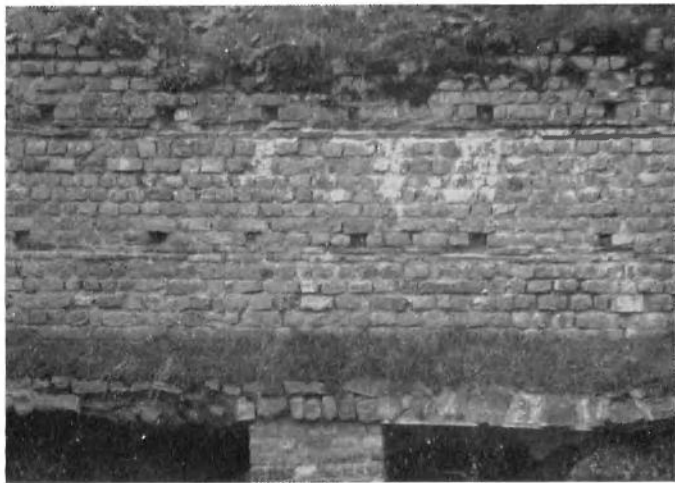
<sup>4</sup> R. Laur-Belart, *Castrum Rauracense*, in *Melanges Louis Bosset* (1950), 140ff.; Stachelin, *op. cit.*, 279 and 603f.

<sup>5</sup> E. Gose, *Tr.Z.* XI (1936), Beiheft, 107ff.

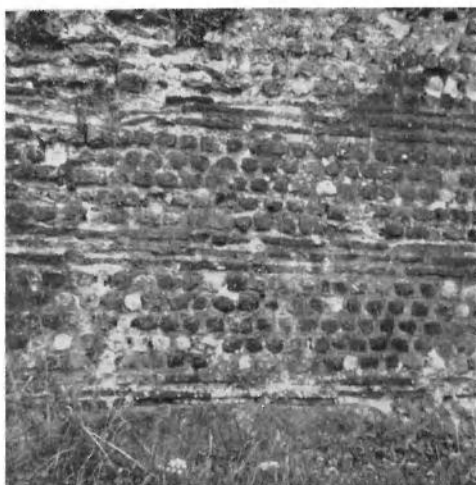
<sup>6</sup> H. Lehner, *B.J.* CVII (1901), 1ff.; Anthes, *op. cit.*, 96ff.; J. Busley and H. Neu *Die Kunstdenkmäler des Kreises Mayen*, (1941).



A. Jublains. A rectangular tower and part of the south wall



C. Bavai. Detail of walling, inner face



B. Jublains. Detail of walling



D. Bavai. A tower on the west side





## COBLENZ (fig. 4)

Between the Moselle and the Rhine lay the walled town of Confluentes, the modern Coblenz, with the road as its north-south axis and the tributary river to the north.<sup>1</sup> The walls, with a thickness of 9-10 ft., enclosed a roughly rectangular area of  $14\frac{1}{2}$  acres, measuring 785 by 690 ft. Some re-used tombstones and a sculptured head may come from their foundations, but generally the rubble core and ashlar facing were constructed from new material. The eighteen hollow, circular towers on the landward sides were 33 ft. in diameter with walls  $7\frac{1}{2}$  ft. thick (fig. 3), but one found on the Moselle wall was only 25 ft. across. Apart from these, the distance between the towers was 85 ft. The southernmost of the two gates may have had a two-arched passageway flanked by hollow, semicircular towers. Some towers still stand on the south and east sides.

## DIJON

Dibio (Dijon) was sited on low ground with the Suzon stream running through the town and other rivulets protecting it on the west. The walls enclosed a rough circle of about 25 acres, some 1,150 ft. in diameter.<sup>2</sup> They were 10 to  $14\frac{1}{2}$  ft. thick and were constructed of rubble concrete faced with medium ashlar blocks on foundations of re-used material; no tile-courses have been observed. There seem to have been thirty-three solid semicircular bastions, 20 to 23 ft. in diameter, and spaced at intervals of about 130 ft. The upper storey of one which still survives, although described as Frankish, may be Roman: it has three arched windows lighting a first-floor room. There were four gates irregularly placed, three of them flanked by a single tower. There is no reason to doubt St. Gregory of Tours, who described the fortress accurately and attributed its building to Aurelian, presumably in A.D. 274/5.<sup>3</sup>

## GRENOBLE

The only inscriptions recording the erection of late Roman town walls in Gaul come from Grenoble (Cularo or Gratianopolis).<sup>4</sup> These were found near the gates and state that the city and its defences were rebuilt by Diocletian and Maximian, who re-named the Vienne (west) gate Herculean, and the Rome (east) gate Jovian, in reference to their titles. The date of this work was between 286 and 305. These walls surrounded an area of about 20 acres, roughly circular, and 1,000 ft. across. They were built of rubble concrete, incorporating re-used material, and were faced with large pebbles. The towers were semicircular and solid, set 85 ft. apart and probably numbering thirty. The only fact known about the gates is their position.

## SAVERNE (fig. 4)

The small town of Saverne or Zabern, a name derived from Tres Tabernae, lies on the main road connecting Metz and Strasbourg, and at the eastern end of the principal pass through the Vosges. The roughly rectangular area of  $18\frac{1}{2}$  acres, measuring 1,050 by 815 ft., was surrounded by 11-ft. thick walls of rubble concrete faced with small ashlar, and set on a base of re-used blocks.<sup>5</sup> The towers were 20 ft. in diameter, circular and solid, spaced at intervals of about 85 ft., but farther apart on the sides less exposed to attack. In all they numbered thirty-seven, including the four angle-towers, which were 29 ft. across. Timber-framing was used in the core of some towers. There were only two gates, at the north-west and south-east, but no certain details can be given about them. Since Julian repaired the defences in 357,<sup>6</sup> they must have been built some years earlier—the excavator thought about 310. One tower, and lengths of walling still remain.

<sup>1</sup> A. Gunther, *B.J.* CXLII (1937), 60ff.

<sup>2</sup> M. Guichot, *Mém. de la Comm. des Ant. du Dép. de la Côte d'Or*, XXII (1940-46), 310ff.; G. Grenaud, *ibid.*, XXIV (1954-8), 113ff.; P. Gras and J. Richard, *Revue Arch. de l'Est* . . . I (1950), 76ff.; *Gallia*, XII (1954), 477.

<sup>3</sup> *Historia Francorum*, III, 19.

<sup>4</sup> *C.I.L.* XII, 2228-9; for details of the walls see Blanchet, *op. cit.*, 148ff.; F. Lot, *Recherches sur la*

*population et la superficie des cités remontants à la période gallo-romaine*, I (1945), 44ff. A 4th-century inscription from Narbonne (*C.I.L.* XII, 4355) mentions the reconstruction of 'gates', perhaps part of the defences.

<sup>5</sup> R. Forrer, *Das römische Zabern* (1918), 97ff.; R. Forrer, *L'Alsace Romaine* (1935), 83ff.

<sup>6</sup> Ammianus, *Res Gestae*, XVI, 12, 11.

## TRIER

Trier, capital of the Western Empire for part of the 4th century, was surrounded by strong walls built of freshly-quarried stone, apparently without re-used material incorporated in them.<sup>1</sup> The area enclosed was 712 acres in extent and measured 7,550 by 5,900 ft., while the perimeter of the circuit was about 4 miles long. These facts would suggest a date in the 1st or 2nd century, but for excavations, which have shown that on the north the foundations cut into a burnt layer, probably due to the civil war of A.D. 196, and ran through a cemetery in use until c. 150. It was discovered that the Porta Nigra replaced an earlier gate. There are consequently several theories as to dating. Both walls and gates may have been the work of Constantine I, together with the cathedral and palace audience hall; Severus may have built the walls and the monumental gates have been replacements under Constantine; or Gratian, whose architects made the cathedral even more impressive, added the gates to defences erected under Constantius and his son. In the latter case the gold medal or double *solidus* of Constantine, struck at Trier in c. 316 and bearing the picture of a gateway at the head of a bridge, would commemorate the completion of the walls rather than the erection of the great gateways, as has been suggested.<sup>2</sup>

These extensive walls were 11 ft. thick at the base, narrowing to 10 ft., and were 25 ft. high. The core of slate rubble was faced with medium-sized limestone ashlar, including some patterning. The hollow circular towers projected on both sides of the curtain wall, and stood on square or rectangular bases. Their diameter varied from 27 to 34 ft., with walls usually over 6 ft. thick, but broader on the outer side. The three main gates were probably very like the surviving north one, the famous Porta Nigra, so well known for its size (118 ft. wide, 70 ft. deep, and 95 ft. high), and for the four storeys of arcades and pilasters on the semicircular towers. These flank twin passages 14½ ft. wide, and there is a rectangular courtyard between the pairs of arches at front and rear. The south-east gate is less familiar: there the amphitheatre was incorporated in the defences, with the wall taken round the curve on the west side of the arena and its lofty portals utilised as city gates. A minor road also passed through one of the towers south of the amphitheatre. Triple ditches have been found outside the walls, but the innermost, 24 ft. wide, 10 ft. deep, and only 12 ft. from their foot, may not be contemporary with the outer one, 46 ft. wide, and 13 to 15 ft. in depth.

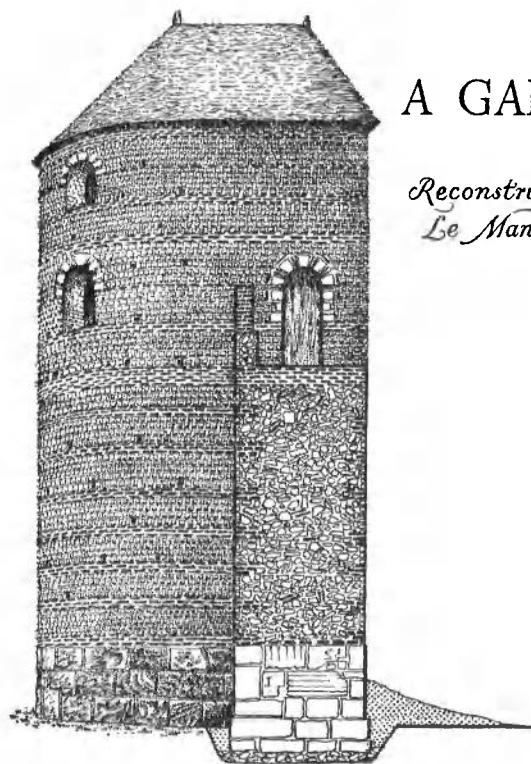
## GENERAL CHARACTERISTICS AND DISTRIBUTION (fig. 2)

The first group of town defences, described above, are representative of the majority of late Roman fortified towns known in Gaul, and have shown that the normal type is a circuit of rubble concrete walls, 10 to 14 ft. thick, set on a base of large re-used blocks, usually fitted together without mortar, and with the facing of small ashlar cubes relieved by frequent horizontal bands of tiles, two or three courses thick. The projecting bastions were solid at the base, 20 to 30 ft. in diameter and semi-circular in plan, except at the angles of rectangular fortifications, where round—or, at Beauvais and Soissons, square—towers are found.

Walls of this type occur in most provinces of Gaul, most commonly in the Lugdunensian ones, but not in the frontier area of the two Germanies and

<sup>1</sup> H. Lehner, *Westdeutsche Zeitschrift*, XV (1896), 231ff.; H. Koethe, *T.Z.* XI (1936), 46ff.; XV (1939), 62ff.; H. von Massow, *ibid.*, XXI (1951), 1ff.; J. Steinhausen, *ibid.*, XVIII (1949), 54; XXIII (1954/5), 181ff.; B. Meyer-Plath, *Die Porta Nigra in Trier* (1942); W. Reusch, *Trevis. A Guide through Roman Trier* (1955), 8. Trier is an exception to Wheeler's axiom (*J.R.S.* XVI (1926), 191), 'that

Roman town walls built of new material and enclosing a large area are early (say first centuries B.C. and A.D. in Gaul), whereas walls built of re-used material enclosing a relatively small area are late (third century or later)'.  
<sup>2</sup> A. Baldwin, *Numismatic Notes and Monographs*, VI (1921), 37ff. Pl. IV; J. M. C. Toynbee, *Roman Medallions* (1944), 189.



# A GALLIC TOWN WALL

C. A.D. 300

*Reconstruction based on remains at  
Le Mans, Senlis and Carcassonne*

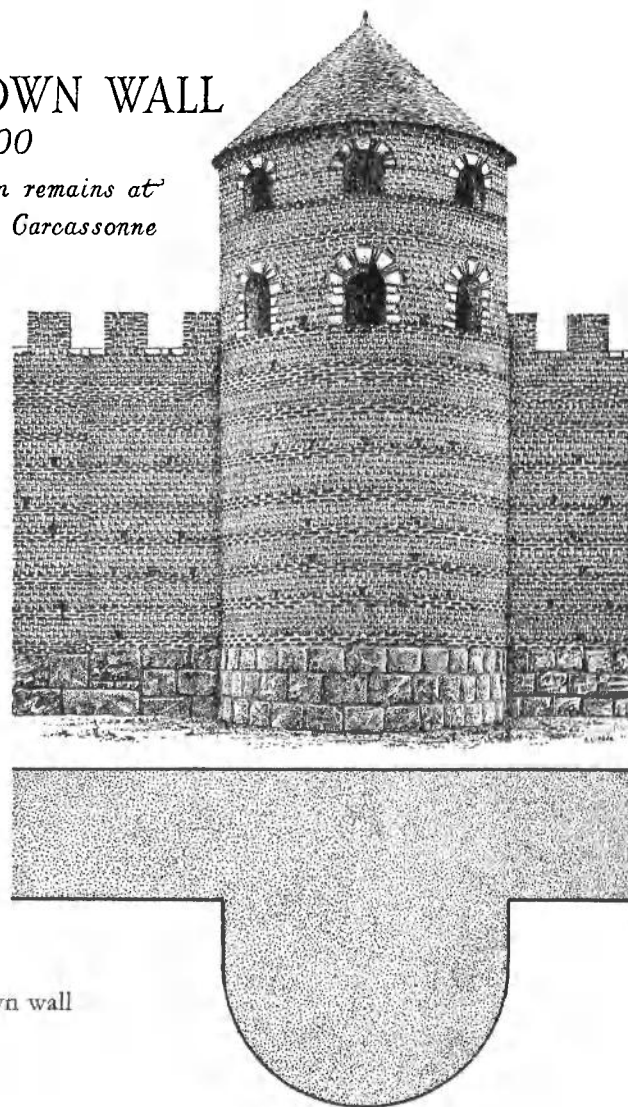


Fig. 5. Ideal reconstruction of a Gallic town wall

*Maxima Sequanorum*, where such towns as were not fortified before A.D. 260 had new defences lacking these distinctive features, but where round towers set astride the walls occur frequently. A distinction which may have some significance can also be made in the western group between towns with walls of rectangular or sub-rectangular plan, and those with an oval or polygonal perimeter. The former, such as Boulogne<sup>1</sup> or Dax,<sup>2</sup> are confined to the Diocletianic provinces of *Lugdunensis II* and *Belgica II*, and to a few sites near the coast; the other plan is more widespread.

### *The Re-use of Earlier Masonry*

The re-used material found in such quantities when walls of the western type are demolished is evidence that a great and common disaster had affected the towns of Gaul. Not only were milestones and monuments from cemeteries made to serve as foundation blocks, but at Sens the impressive and ornate facade of a large public building, probably the main baths, was broken up and so used;<sup>3</sup> at Beauvais the stones in the wall base came from the large temple on Mont Capron;<sup>4</sup> at Paris amphitheatre seats and cornices from the forum were similarly employed;<sup>5</sup> and the same fate befell amphitheatres at Metz<sup>6</sup> and Soissons.<sup>7</sup> The marble doorway and the elegant columns were stripped from the principal temple at Périgueux, leaving it, as it still remains, a bare shell. At Bordeaux inscribed tombstones, over four hundred in number, were piled up to make the wall base more resistant to battering-rams; and at Rennes the recent demolition of a length of the Roman fortification has revealed a mass of small granite columns laid between the larger blocks, likewise coming from an earlier building, which formed the foundation courses of the walls.<sup>8</sup> Similar re-used masonry and sculpture has been found in the defences at Arlon,<sup>9</sup> Bourges,<sup>10</sup> and Toulouse,<sup>11</sup> and where the town walls still stand such footings can be seen in place (Pl. II).

The fact that the public buildings were lying in ruins and that the cemeteries were desecrated is sufficient evidence of widespread calamity, but the very situation and size of the new fortifications is as strong an indication. At Bavai, Jubbains, and Lillebonne an extensive town was replaced by a fort scarcely 750 ft. across; at Paris and at Périgueux the forum, baths, and chief temples

<sup>1</sup> P. Heliot, *Revue Arch.* (1958), I, 158ff. and 1958, II 40 ff. (with full bibliography). There seem to be traces of two Roman wall circuits in addition to that largely followed by the existing medieval walls of the *Haute Ville*, all three assigned by Heliot to the late Roman period.

<sup>2</sup> A. de Caumont, *Bull. Mon.* XXII (1856), 572ff.; C. R. Smith, *op. cit.*, V (1861), 226ff.; C. Jullian, *Rev. Et. Anc.* III (1901), 211ff.; Blanchet, *op. cit.*, 186ff.; F. Lot, *op. cit.*, III (1953, with E. Houth), 81ff.

<sup>3</sup> Esperandieu, *op. cit.*, IV (1911), 55ff.

<sup>4</sup> V. Leblond, *Bull. Arch.* 1915, 26ff.; see also *Gallia*, VII (1949), 112; IX (1951), 52; XV (1957), 165; XVII (1959), 282f.

<sup>5</sup> F. G. de Pachtere, *Paris à l'époque gallo-romaine* (1912), 61, 76ff., 146ff.

<sup>6</sup> M. Toussaint, *Metz à l'époque gallo-romaine* (1948), 165ff.

<sup>7</sup> Blanchet, *op. cit.*, 103ff.; F. Vercauteren, *Études sur les civitates de la Belgique Seconde*, *Académie Royale de Belgique, Pubs. in 80.* XXXIII (1934) 106ff.

<sup>8</sup> P. Merlat, *Annales de Bretagne*, LXV (1958), 97ff. esp. 126f. and 131f.; *Gallia*, XVII (1959), 343ff.

<sup>9</sup> P. Goessler, *Pauly-Wissowa R. E.* XVIII 1 (1939), 1153ff.; M. Renard, *Archaeology*, III (1950), 131ff.; S. J. de Laet, *Bull. de l'inst. belge de Rome*, XXVI (1950-1), 215ff.; *L'Ant. Class.* XXIII (1954) 434ff.; M. E. Marien, *Les Monuments Funéraires de l'Arlon romain* (1945); A. Bertrany, *Histoire d' Arlon* (1953), 45ff.

<sup>10</sup> A. Buhot de Kersers, *Histoire et Statistique Monumentale du Département du Cher*. II (1883), 64f.; Lot, *op. cit.*, I, 71ff.; *Gallia*, XVII (1959), 293ff.

<sup>11</sup> *Gallia*, V (1947), 469f.; VII (1949), 132; IX (1951), 126; XIV (1956), 112.

were left outside defences enclosing less than 20 acres; and at Amiens<sup>1</sup> and Tours the amphitheatre had its entrances blocked, and projected from the walls as a huge tower. The transformation of Bavai was particularly striking: the flourishing capital of the Nervii emerged from the invasions as an elongated fort, with walls and towers applied to the outer face of the vaulted basement of the ruined forum. The area enclosed was smaller than at nearby Famars, where a local sanctuary received defences as strong as did the cantonal capital. Although some of the larger cities—Arles, Cologne, Reims, and Trier—flourished in the 4th century, it seems that at Lyons the metropolis of the Gauls, high on the hill of Fourvière, was deserted by its citizens, who moved to the island between the rivers. The suggestion has been made that the barbarian invaders broke down the aqueducts supplying the ancient citadel for the sake of their lead pipes.<sup>2</sup>

### *Tile Courses*

Tile courses, usually triple, are a prominent feature of the facing of the walls. Although it is frequently stated that they generally continued right through the whole thickness of the town walls, this does not seem to have been the case in examples which have been carefully examined and sectioned. It was certainly not so at Jublains and Sens, for instance, while at Nantes the excavator specifically noted that these bands only occurred in the outer facing and penetrated into the core to a depth of one tile; he considered that they were merely a decorative feature.<sup>3</sup> They had a structural purpose, however, for it is clear from breaks visible in the facing that, as with the similar defences of Pevensey and Richborough, the west Gallic walls were built by different gangs in lengths and by stages of about 4 ft. The tile courses were laid after each stage was finished, in order to level out irregularities in the facing blocks, to bond them with the core, and to serve as a firm support for the scaffolding from which the next stage was to be built. Consequently, if the putlog holes have been left open, they will usually appear in the ashlar course immediately above a band of tiles (Pl. IIIc). Frequently the level of the tile courses in the outer and inner facing of the walls can be seen to be different, because the gangs working on the two sides built their quotas at differing speeds and their stages might differ by several inches.

### *Gateways (fig. 3)*

Little is known of main gates in the town walls, since they have generally been replaced in the medieval period. Although several posterns—simple doorways a few feet wide—are known, details of larger structures, apart from

<sup>1</sup> M. Lecompte, *Bull. de la Soc. des Ant. de Picardie*, XLIII (1949), 20ff.; F. Vasselle, *ibid.*, 37ff., 226ff., 352ff.; XLIV (1951-2), 146ff.; XLV (1955), 16ff., XLVII (1957), 224. It should be noted that post-war rebuilding, although retaining old street names, is on a new lay-out differing from the pre-war one. The amphitheatre, probably near the centre of the south wall of the fortifications, was on the site of the modern town hall. The site of the cathedral was

outside the walls to the east.

<sup>2</sup> R. Audin, *Rev. Arch. de l'Est* . . . IV (1953), 61ff.

<sup>3</sup> G. Durville, *Fouilles de l'Evêché de Nantes*, 1910-1913 (Supplement to *Bull. de la Soc. Hist. et Arch. de Nantes*, 1913), 60, 116, 322ff. See also M. E. Mollat, *Bull. de Nantes*, LXXII (1932), 259ff.; LXXIII (1933), 289ff.; LXXVII (1937) 35ff., 46ff.; LXXXVII (1957), 20ff.; *Gallia*, XIII (1955), 157.

the exceptional examples at Trier and those already mentioned at Andernach and Périgueux, have only been recorded at Dax, Die, and Nantes. Those at Dax, demolished a century ago, had arched heads with stone voussoirs and double tiles alternating over single passage-ways flanked by projecting semicircular towers.<sup>1</sup> At Die two such towers built of large ashlar blocks, probably re-used, flank a single arch; an earlier commemorative archway is incorporated in the rear of this gate.<sup>2</sup> The north-east gateway at Nantes (fig. 3), had a passage 29½ ft. long and 13 ft. wide, narrowed to 9 ft. by the jambs of the three doors.<sup>3</sup> On each side there was a rectangular guardroom, and the projecting towers, which stood on massive foundations of re-used material, were probably semicircular. Decorated lintels found during alterations of the Porte des Dunes at Boulogne may belong to the original Roman gate.<sup>4</sup>

It seems likely from these remains, and from the better-known fort gateways, that the main entrance to a Gallic city in the 4th century was by a single arched passage set between two of the projecting bastions, which, unlike the interval-towers, were hollow at the base. Above the guardrooms would be one or two storeys with windows from which archers could sweep the approaches. An arcaded gallery above the entrance-arch can be assumed—that of the Porte St. André at Autun is now thought to belong to this period<sup>5</sup>—but it must remain uncertain whether the pilastered gate at Périgueux was exceptional. The upper storeys of gate-towers no doubt resembled those surviving in wall-towers at Bourges, Carcassonne, Le Mans, and Senlis, where the large upper windows seem to have been intended for the use of artillery. The solid bases of most bastions would make suitable platforms for *ballistae* mounted at the level of the parapet-walk, and similar towers in other provinces were certainly designed for the use of such weapons.

### Ramparts

No mention has hitherto been made of internal earth ramparts, for it seems very doubtful whether the late town walls were ever normally strengthened in this way. Certainly forts with similar massive walls, like Richborough and Alzei, never had this additional defence, and only at Toul, among Gallic towns, has one been found,<sup>6</sup> although the earlier bank was apparently retained at Strasbourg. It may be that more careful excavation would in fact reveal traces of ramparts where they have neither been expected nor discovered, or that they were completely cleared away in medieval alterations, but the careful inner facing at Nantes, where there were 4th-century buildings close beside the walls, was clearly intended to be visible. The small area of late Roman Paris or Noyon would be even more restricted by a rampart of any size, and until definite evidence is forthcoming from several sites, it seems best to assume

<sup>1</sup> See 40, n.2, above.

<sup>2</sup> Esperandieu, *op. cit.*, I (1907), 233ff.; J. Formigé, *Congres Arch.* 1909, 71f.; Lot, *op. cit.*, I 89ff. J. Sautel, *Carte Archeologique de la Gaule romaine: Drôme* (1957), 44ff. and Pl. V; *Gallia* XVI (1958) 383. The writer has not yet found a good plan or des-

cription of this gate.

<sup>3</sup> Durville, *op. cit.*, 105ff., 324.

<sup>4</sup> C. Enlaert, *Congres Arch.* XVII (1880), 294.

<sup>5</sup> *Gallia*, XIV (1956), 122.

<sup>6</sup> J. Choux and A. Lieger, *Gallia*, VII (1949), 95.

that these thick and lofty walls never possessed this unnecessary strengthening, for unlike the walls at so many British sites, they were not inserted into earlier earth defences.

### *Ditches*

Outer ditches are equally elusive, and at most towns have probably been obliterated by the medieval moats and are now sealed beneath the boulevards which mark the line of the Roman and later defences. Although such ditches undoubtedly existed, they were some distance from the foot of the walls, in places where they have previously neither been sought nor recognised. As Dr. Corder has pointed out for Great Casterton,<sup>1</sup> the ditches surrounding the higher walls and projecting bastions of the late period had to be much farther away from the foot of the defences than when the latter were only low ramparts. Otherwise they could not fulfil their function of holding up attackers and making them a sitting target for archers and artillerymen on the walls, since, in order to cover ditches 10 ft. or so from the base, the defenders would have had to lean right over the parapet to shoot, and thus be exposed to enemy retaliation. At Eschenz and Kaiseraugst respectively the double ditches were 140 ft. and 65 ft. outside the walls;<sup>2</sup> it is at comparable distances around the fortifications that the ditches of contemporary Gallic cities should be sought.

### DATING EVIDENCE

Although such a large number of them are known, the dating of these town walls is surprisingly difficult. It has been remarked that 'the usual procedure is to make a generalisation that the walls were built at a certain time, and then to prove doubtful dates by referring to that generalisation'.<sup>3</sup> This practice cannot entirely be avoided, since definite and reliable evidence is rather scanty. Only in one case has a building inscription been found—that at Grenoble, previously mentioned, enabling the defences there to be assigned to the period 286-305. The 1954 season of excavation at Amiens produced the most definite dating material for the newly-discovered walls.<sup>4</sup> On the west side their foundations were laid on top of a 3-ft. thick layer of rubbish sealing a well filled with debris including twenty-nine coins dating from 205 to 252; like bronze vessels among the filling they had apparently been exposed to burning. In addition a coin of Probus, issued in 277/8 was found in the concrete of the wall core. Similar finds of coins coming from the walls themselves have been reported elsewhere. These discoveries were of issues of Postumus and Diocletian at Beauvais,<sup>5</sup> an *antoninianus* of Claudius II at Bordeaux,<sup>6</sup> worn coins of Probus and Aurelian at Toul,<sup>7</sup> and some minted by Postumus and Gallienus at Sens.<sup>8</sup> An issue of Constantine II with mortar adhering was found

<sup>1</sup> *Arch. Journ.* CXII (1955), 32ff.

<sup>2</sup> Staehelin, *op. cit.*, 274, 622; Laur-Belart, *op. cit.*, 1950, 14.

<sup>3</sup> Manley, *op. cit.*, 104.

<sup>4</sup> Lecompte, *op. cit.*, 1955, 23f.

<sup>5</sup> Leblond, *op. cit.*, 35.

<sup>6</sup> Jullian, *op. cit.*, 1890, 294.

<sup>7</sup> See 40, n.6 above.

<sup>8</sup> Huré, *op. cit.*, 226f.



among debris from the walls of Auxerre,<sup>1</sup> but the discovery of a coin of Magnentius in the walls of Dax is less well-attested.<sup>2</sup>

Besides these finds, the only other datable material available is provided by the re-used masonry in the walls. Several dated inscriptions are known, but most are 2nd-century. The latest ones came from a postern at Rennes, where no less than ten milestones, and probably thirteen in all, had been used to construct the jambs and footings of a square-headed opening 4½ ft. wide and 6½ ft. high, of one built with the town wall.<sup>3</sup> These included examples set up by Severus and his sons, by Maximinus, by Postumus, by Victorinus, and by Tetricus I, and cannot have been used in this way earlier than 268. The incorporation of milestones in the footings of late defences is attested in Britain at Bitterne and perhaps at Kenchester.<sup>4</sup> At Bordeaux the latest of over four hundred inscriptions built into the base of the walls had the date of 258, although another might be as late as 290.<sup>5</sup> A stele from the walls of Saintes was originally set up in 250,<sup>6</sup> and at Sens the latest of the re-used monuments to bear a date was one of c. 220.<sup>7</sup>

It seems almost certain that the blocks from earlier buildings would not have been used in such quantities for constructing the defences until after the *fora*, temples, baths and similar structures had been so wrecked as to be useless, or unless danger was so pressing that respect for public buildings and cemeteries was put aside. Consequently, when the excavators at Paris, Périgueux and Senlis identify the disaster in which those cities were burned and wrecked as the invasion of 276, and when fragments in the wall footings of the first two places can be recognised as coming from the civic centres destroyed in that devastation, it becomes clear that their fortifications must be later than the great invasion.

The copious literary sources are somewhat more helpful. Gregory of Tours, writing in the 6th century, gave an accurate description of the walls of Dijon, mentioning their thickness and height, the number of the towers, and the stream running through the town.<sup>8</sup> Since all these points have been confirmed and show local knowledge, he may be the more readily believed when he states '*Nam veteres ferunt ab Aureliano imperatore hoc fuisse aedificatum*', especially since an early life of St. Benignus, which may be an independent source mentions that '*In tempore illo Aurelianus ad castrum cui nomen est Divione, ubi tunc novos construxerat muros, ad videndum eos advenit . . .*'<sup>9</sup> The Chronicle of Amboise is a more doubtful authority, but some genuine tradition may be

<sup>1</sup> *Gallia*, XII (1954), 510.

<sup>2</sup> Jullian, *op. cit.*, 1901, 15.

<sup>3</sup> L. Decombe, *Mem. de la Soc. Arch. du Dép. d'Ille et Vilaine*, XX (1889), 71ff. and E. Esperandieu, *ibid.* 97ff.

<sup>4</sup> M. A. Cotton and P. W. Gathercole, *Excavations at Clausentum, Southampton*, 1951-1954 (1958), 139ff.; H. B. Walters, *V.C.H. Herefordshire*, I (1908), 181, fig. 2.

<sup>5</sup> *C.I.L.* XII, 633 and 595. The altar set up by

M. Aurelius Lunaris of York and Lincoln in A.D. 237 also came from the wall footings. P. Courteault, *J.R.S.* XI (1921), 101ff.

<sup>6</sup> *Gallia*, XIII (1955), 169.

<sup>7</sup> *C.I.L.* XIII, 2950; Hure, *op. cit.*, 226f.

<sup>8</sup> *Historia Francorum*, III, 19.

<sup>9</sup> *Acta Sanctorum*, 1st Nov., 155; cf. Passio III, 154. One life calls the emperor concerned Marcus Aurelius.

preserved in a reference to Constantine I: '*Cum Gallias circumiret Turonensibus iussit ut omnes lapides Ambazii aedificii ad muros suos reficiendos per Ligerim deferrent*'.<sup>1</sup>

Apart from these definite statements, the other literary sources can only be used to show that certain town walls existed before the period of which the author was writing. Ausonius in the last quarter of the 4th century described the rectangular plan of the walls of Bordeaux: '*Quadrus murorum species, sic turribus altis Ardua . . . Tum respondentes directa in compita portas*'.<sup>2</sup> His grandson Paulinus mentioned in addition the water-gate and harbour:

*'Burdigalam veni, cuius speciosa Garumna  
moenibus Oceani refluas maris invehit undas  
navigeram per portam, quae portum spatiosum  
nunc etiam muris spatiosa includit in urbe.'*<sup>3</sup>

Since Ausonius would no doubt have told his readers if the walls were newly-built, the fortifications of Bordeaux cannot be much later than c. 350.

Ammianus Marcellinus frequently mentions cities in terms which leave no doubt of the existence of walls at the period being described. Thus when Julian first arrived in Gaul as Caesar he clearly travelled so as to find shelter each night in a walled town: Auxerre, Reims and Troyes may therefore be assumed to have had defences in 356.<sup>4</sup> At Sens he was besieged during the winter of 356/7 and 'a weak part of the walls was repaired . . .'.<sup>5</sup> The Rhineland was an area where '*nec civitas ulla visitur nec castellum, nisi quod apud Confluentes, locum ita cognominatum, ubi amnis Mosella confunditur Rheno, Rigomagum oppidum est et una prope ipsam Coloniam turris*'.<sup>6</sup> Later Julian repaired the walls of Saverne, sent booty back to Metz for safe-keeping, and occupied seven towns, of which Andernach, Bingen, Bonn, Neuss, and Xanten are recognisable.<sup>7</sup> The historian also remarked on 'the walls of the ancient city of Autun, of wide circuit to be sure, but weakened by the decay of centuries', obviously referring to the Augustan defences.<sup>8</sup> 'Closed gates' are mentioned at Lyons,<sup>9</sup> and in his account of Valentinian's campaigns, Ammianus gives a picture of the field army quartered in the fortress cities of Amiens, Chalon-sur-Saône, and Reims.<sup>10</sup>

In his own writings Julian states that 'the number of towns whose walls had been dismantled was about forty-five, without counting forts and lesser posts',<sup>11</sup> but these towns were all in the east of Gaul, and must have included many fortified settlements which do not come within the scope of this survey, such as Jülich and Tarquimpol. His evidence on the condition of Paris is, however, definite; 'it is a small island lying in the river; a wall entirely surrounds

<sup>1</sup> See *Mem. de la Soc. Arch. de Touraine*, XI, 233.

<sup>2</sup> Ausonius, *Ordo Nobilium Urbium*, XX, 13-17. In the same poem the tile walls of Toulouse are noted: XVIII *Tolosa*, 2.

<sup>3</sup> *Eucharisticus*, 44-47. (Loeb text of Ausonius, Vol. II.) See also 329ff. for the siege of Bazas.

<sup>4</sup> *Res. Gestae*, XVI, 2, 5ff.

<sup>5</sup> *Ibid.*, XVI, 4, 2.

<sup>6</sup> *Ibid.*, XVI, 3, 1.

<sup>7</sup> *Ibid.*, XVI, 12, 11; XVII, 1, 2; XVIII, 2, 4f. The phrase, *receptarum urbium moenia reparari*, indicates that they already had walls.

<sup>8</sup> *Ibid.*, XVI, 2, 1. Cf. XV, 11, 11.

<sup>9</sup> *Ibid.*, XVI, 11, 4.

<sup>10</sup> *Ibid.*, XXVII, 1, 2; 8, 1, etc.

<sup>11</sup> *Letter to the Senate and People of Athens*, 279A.

it, and wooden bridges lead to it on both sides'.<sup>1</sup> The wall which he mentions as making Besançon strong has not yet been positively identified.<sup>2</sup>

Less satisfactory evidence can be found in the minor writers of this period. The siege of Boulogne by Constantius in 293, extolled in a panegyric,<sup>3</sup> shows that the port was already walled, probably with the defences still existing behind medieval re-facing. It is also reasonable to suppose that when the same ruler settled barbarians around various Gallic cities and rebuilt their houses and public buildings, he would also have built walls there, if none already existed. Such settlements are mentioned around Amiens, Autun, Bavai, Beauvais, Trier, Troyes, and Langres.<sup>4</sup> At the latter town Constantius was nearly captured by barbarian raiders but 'he was pulled up inside the walls with ropes after the gates had been closed'.<sup>5</sup> The *Historia Augusta* and the *Notitia Dignitatum* are of little assistance for dating purposes, both because of the uncertainty about their own dates of composition, and because the veracity of the former work is suspect, while, although the *Notitia* can be used to argue that towns where troops were stationed in the late 4th century were fortified, it is known in any case from structural remains that most of them were. However, it is useful to know that under Probus 'seventy most noble cities were freed from enemy captivity and nearly all the Gauls liberated' after the invasion of 276,<sup>6</sup> or to learn the names of places where naval forces and barbarian military settlers were based.<sup>7</sup> Most of these garrison towns which can be securely identified, and where the walls have been found, had defences of the western type.

#### CONCLUSIONS

By combining this archaeological and literary evidence it is possible to say that the walls of Dijon were built by order of Aurelian, and those of Grenoble under Diocletian and Maximian, while the other town defences were constructed after the invasion of 276 but before Julian's arrival in 356. Andernach, Coblenz, and Saverne have defences with several similarities in their details, and their walls may reasonably be attributed to Constantine I, since their round towers, and the way in which they lie across a main road, with only two principal gates, give them a resemblance to a series of forts in the frontier zone, of which three are securely dated to his reign. With them may perhaps be grouped the larger cities of Mainz and Trier, while the walls of Tongres and Tournai, which also had similarly-sized round towers, may be found to have been built at this time, when more is discovered about them.

The west Gallic walls have towers and facing of a different type. If they too had been built by order of Constantine, there seems to be no reason for

<sup>1</sup> *Misopogon*, 340D.

<sup>2</sup> Letter VIII (in Loeb text), to Maximus the philosopher, 414C. See L. Lerat, *Pauly-Wissowa R. E.* VIIIa, 2. (1958), 1698ff.

<sup>3</sup> *Panegyrici Latini*, IV, viif. (ed. E. Galletier. Bude edition, 1949). See also P. Heliot, *op. cit.*, 181f.

<sup>4</sup> *Ibid.*, IV, xxi.

<sup>5</sup> Eutropius, *Breviarium*, IX, 23.

<sup>6</sup> *Historia Augusta—Probus*, XV, 2ff.

<sup>7</sup> *Notitia Dignitatum*, Pars Occ., XLII, 33ff. Attempts at reconstructing the military history of Gaul in the late Empire may be found in: H. Nesselhauf, *Abhandlungen der Preuss. Akad. der Wiss. Phil.-hist. Kl.* 2 (1938), with full bibliography and discussion; Schleiermacher, *op. cit.*, esp. 168ff.; and D. van Berchem, *American Journal of Philology*, LXXVI (1955), 138ff.

these differences, and more mention of the emperor as a restorer of cities in that area would surely have survived among the eulogies of his exploits. The uniformity of details in the new defences suggests that a building campaign was carried on at about the same time in all the ravaged areas of Gaul, and that it was probably directed by a central authority. The resemblances between these town walls and four of the forts on the south coast of Britain, of which Richborough was certainly built under Carausius and Pevensey was probably his work or that of Allectus, indicate the most likely date for this widespread fortification. Constantius is known to have restored many cities, and his jurisdiction covered the whole of Gaul and, eventually, of Britain; the same can be said of his senior Augustus, Maximian. It therefore seems consistent with the available evidence to suggest that the period A.D. 286/306 saw the erection of these town walls.<sup>1</sup>

It is probably safe to say that for the late Empire more is known of the defences of Gaul than of any other area—certainly they are far more accessible to the British student than are the desert *limites* of Africa or Syria. In France and Germany he can see examples of late Roman fortifications which will help him to understand better the town walls of England and of its Saxon Shore forts. Although the monumental gateway of Trier and its great public buildings were the trappings of an imperial capital, and so are unique north of the Alps, yet at the humbler towns of Boulogne, Carcassonne, Le Mans, St. Lizier, Senlis, and Tours, over half the wall circuits stand to a height of 15 ft. or more; Bavai, Boppard, Jublains, and tiny Larçay can show defences on the lesser scale of forts; while there are lengths of wall and towers to be seen at Bourges, Coblenz, Dax, Périgueux, Sens, and Worms. Parallels for the polygonal bastions of Cardiff, Caerwent, and York must be sought in the buried forts of Switzerland, but in nearly every cathedral city of France have been found architectural fragments re-used in tower and wall footings as at Bath and Bitterne, at London and Richborough. Larger versions of the Saxon Shore forts can be traced in a dozen places; for indeed if Roman walls identical in plan and appearance with those of Pevensey were to be found embedded among the close-packed houses of some small French town, they would not appear foreign or unusual. The archaeologist in Britain cannot afford to treat its late Roman fortifications as a purely insular phenomenon in isolation from those of Gaul.

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<sup>1</sup> It is realised that the conclusions here expressed conflict with the theory of P. van Gansbeke (*Latomus*, XIV (1955), 404ff.), that many of the fortifications mentioned above were erected by Postumus as part of a comprehensive scheme for putting Gaul into a state of defence. These include most of the eastern group of towns and forts with round towers (except

Deutz), and such typical sites of the western type as Bavai, Jublains and Tours. Space does not permit adequate discussion of this paper in which few recent non-Belgian/Dutch sources are quoted, and the only authority given for describing the walls of London as possibly belonging to this scheme is Grenier.

## APPENDIX

A list of walled towns in Britain and Gaul. Areas in acres<sup>1</sup> and wall thicknesses in feet are given where known. *C* following a name denotes a *colonia*; places with a rectangular plan are starred; selected forts are included for comparison.

(1a) *Towns with walls built before A.D. 260*

	Area in acres	Wall-thickness in feet		Area in acres	Wall-thickness in feet
Aix <i>C</i>		7	Marseilles	70	
Antibes			Narbonne <i>C</i>		
Arles <i>C</i>	45	7	Nîmes <i>C</i>	550	9
August <i>C</i>		7	Nyon <i>C</i>	200	
Autun	494	8	Orange <i>C</i>	30	
Avenches <i>C</i>	375	4½—6½	St. Bertrand	335	
Beziers <i>C</i>			St. Blaise		7—12
Cologne <i>C</i> *	240	7½	Tongres		6½
Fréjus <i>C</i>	100	8½	Tournai		
Heddernheim *	180	7	Vienne <i>C</i>	500	
Hyerès			Wimpfen *	50	6
Ladenburg *	160	7	Xanten <i>C</i> *	208	5—6
Lyons <i>C</i>	350				
Alchester *	27	9 <sup>2</sup>	Exeter	93	9—10
Aldborough *	60	8—12	Gloucester <i>C</i> *	46	6
Ancaster *	9	8	Great Casterton	18	7
Brough *	12½	10	Irchester *	20	8
Caerwent *	44	6½—10	Kenchester	22	7—9 <sup>2</sup>
Caistor St. *	35	11	Leicester *	87	10
Edmunds			Lincoln <i>C</i> *	41	7—8
Caister by *	34	10	London	330	7—11
Yarmouth			Rochester	23½	7 <sup>2</sup>
Canterbury	130	7	St. Albans	200	7
Catterick	18	7½	Silchester	100	7½—9½
Chichester	101	7	Water Newton	44	
Cirencester	240	4½	Winchester	138	8
Colchester <i>C</i> *	108	8½	Wroxeter	170	7
Dorchester	70	8½	York <i>C</i>	100?	
Dorchester-on-					
Thames *	13½	9 <sup>2</sup>			

<sup>1</sup> It should be noted that many of the estimates of the area of Roman towns in France vary considerably according to which source is used. For the south the figures given above are taken from F. Lot, *Recherches sur la population et la superficie des cites remontant a la periode gallo-romaine* (3 vols.

1945-53). Even in the case of such British sites as Cirencester and Wroxeter the area given is probably an underestimate.

<sup>2</sup> Further excavations on these sites may show that their walls should be listed under Section 4.

(1b) *Legionary fortresses with stone walls built before A.D. 260*

	<i>Area in acres</i>	<i>Wall-thickness in feet</i>		<i>Area in acres</i>	<i>Wall-thickness in feet</i>
Bonn *	63	6	Caerleon *	50	5
Mainz *		6	Chester *	56	4
Strasbourg *	47	6½	Inchtuthill *	56	5
Windisch	56	3	York *	50	5

(2a) *Towns with walls of western type built after A.D. 260*

	<i>Area in acres</i>	<i>Wall-thickness in feet</i>		<i>Area in acres</i>	<i>Wall-thickness in feet</i>
Amiens?		13	Nantes	45	12—15
Angers		10—13	Narbonne?	75	10
Antibes?			Nevers	25¾	
Auxerre		6½	Noyon		
Bayeux *			Orléans *	42	
Bayonne	17	10	Paris	20	8¾
Beauvais *	27	9—10	Perigueux	14	13—20
Beziers?			Poitiers	105	18
Bordeaux *	80	13	Rennes	22	11½
Boulogne *	32	13—20	Rouen *	55	
Bourges	67	9—10	Saintes		10—12
Carcassonne	17½	10	St. Bertrand?		
Cassel			St. Lizier	9	10
Chalon-sur-Saône	38	10	Senlis	17½	10—13
Dax *	31	13—15	Sens	113	9½—10
Die	50		Soissons *	30	
Evreux *	24	10—12	Toul	25	10
Laon			Toulouse?		5¾—9½
Le Mans *	25	13—14	Tours *	23	10—15
Lescar?	6¾		Troyes? *	40	
Meaux? *			Vannes	12½	13
Melun?		7½	Vienne?		
Metz	175	11½	Bitterne	8	9—10

(2b) *Forts with walls of western type*

	<i>Area in acres</i>	<i>Wall-thickness in feet</i>		<i>Area in acres</i>	<i>Wall-thickness in feet</i>
Bavai	5½?	10	Bradwell *		12
Brest *			Burgh Castle *	6	12
Famars	6¼	6	Lympne	10	14
Jublains *	3½	15½	Pevensey	10	12½
Larçay *	¾	15	Portchester *	9	7—10
Lillebonne		8	Richborough *	6	11
			Walton Castle?		

(3a) *Towns in the frontier area with walls built after A.D. 260 and round towers*

	Area in acres	Wall-thickness in feet		Area in acres	Wall-thickness in feet
Andernach	15	10	Tournai	30	
Coblenz	14½	10—12	Tongres		10
Mainz	300	9—10	Trier	712	10
Saverne	18½	11			

(3b) *Forts built after A.D. 260 with round towers (omitting those attributed to Valentinian I)*

	Area in acres	Wall-thickness in feet		Area in acres	Wall-thickness in feet
Anse-sur-Saône	3	10	Neumagen	3	12
Bitburg	5	12	Saarbrücken	1½	10
Deutz *	5¾	11½	Scarponne		9—10
Gap	2¾	12	Tournus	3¾	13
Jünkerath	4¾	12	Wyhlen	¾	
Maastricht	5¼	6½	Zurzach	1¼	11

(4) *Towns with walls built after A.D. 260 not of western type*

	Area in acres	Wall-thickness in feet		Area in acres	Wall-thickness in feet
Arles			Grenoble	20	8—15
Arlon	12½	10—13	Langres		13
Basle	8¾	3½—6	Saarbourg	35	8¾
Dijon	25	10—14½	Verdun		
Geneva	14	3	Worms		9
Grand		8			

(5) *Towns probably walled at this period, or with walls of which little is known.<sup>2</sup> Only the more certain examples are listed, and only the British examples are shown on fig. 2.*

	Area in acres	Wall-thickness in feet		Area in acres	Wall-thickness in feet
Arras			Reims		
Auch	9		St. Quentin		
Autun	25		St. Servan		5
Avignon	50		Speyer		
Avranches			Théroutanne		
Bazas	c. 10				
Besançon			Bath	22½	15
Bingen		9	Caistor	4	10
Cambrai			Castle Hill	8	9
Carhaix			(Margidunum)		
Carignan			Godmanchester	17½	10
Coutances			Great Chesterford	35	12
Jülich		16	Horncastle *	5½	10
Limoges			Ilchester	32?	3?
Lisieux			Mildenhall	15	18½
Maçon			Wetherley	12	9
Naix			(Manduessedum)		
Nîmes	20				

<sup>2</sup> Further excavation on these sites may show that their walls should be listed under Section 4.