

The general story of the town plan of Londinium is thus a familiar one. From a nuclear chessboard it spread along the adjacent highways (the details hidden from us) and, at a necessary or suitable moment, the amalgam was enclosed in defences which, with little regard to geometry, compromised between the existing pattern of occupation and tactical command. We have seen something of the sort, with variations, in several of our other samples of planning, beginning with Ostia (*Ill. 11*). And beyond Ostia there are Hellenistic cities which tell much the same tale. Save for a tendency to emphasize the major axes of a plan – and here the influence of the augur and the soldier may be suspected – the Roman planners added surprisingly little in principle to the Greek tradition. It was rather in the design and construction of individual buildings that Roman individuality expressed itself, and to some of these we must now turn.



64 Cylindrical silver pyxis and strainer found in the north wall of the London Mithraeum. It bears hunting scenes, perhaps representing Mithras in the role of pursuer of death and evil. It dates from the late third to fourth centuries AD

## Buildings

### TEMPLES

From the seventh century BC onwards the typical Greek temple consisted of an oblong sanctum with a porch at one or both ends and a surrounding colonnade. The basis of the building was a low stone platform with continuous steps. Variations on this nuclear plan do not here concern us, nor do the problems of its ancestry. Suffice it that the Greek temple offered an essentially symmetrical all-round elevation with no external emphasis on particular function, save for an adjacent altar.

Similarly generalized, the Roman temple, manifestly derived from the same tradition, was of a very different mind. It was raised upon a lofty podium 9 or 10 feet high (*Ill. 66*), and above this it presented a deep and dominating colonnaded porch, often with no more than a vestigial continuation in the form of attached columns along the sides and back of the shrine. Compared with the Greek pattern, the Roman was two-dimensional. The back was of no account; it might even be masked by an adjacent wall at the extreme inner end of a forum or temenos, which confronted the temple much as the forecourt or atrium was later to confront the Christian church. The expressed function of the Roman temple was to command the assembly in front of it, whether for religious ceremony or for the more secular purposes of public oratory from its towering podium. This might be approached by a central staircase between flanking platforms, or even by almost secret lateral stairs as in the Temple of Rome and Augustus at Lepcis Magna (*Ill. 65*).

It is not profitable to dispute how far these or other variations upon the Hellenic pattern were imposed by Etruscan middlemen or by the 'Romans' themselves in any narrow sense of the term. The differences fall well within the range of specific variation attributable to transplantation from one environment to another. They are no more (or less) mysterious than are the specific and regional variations

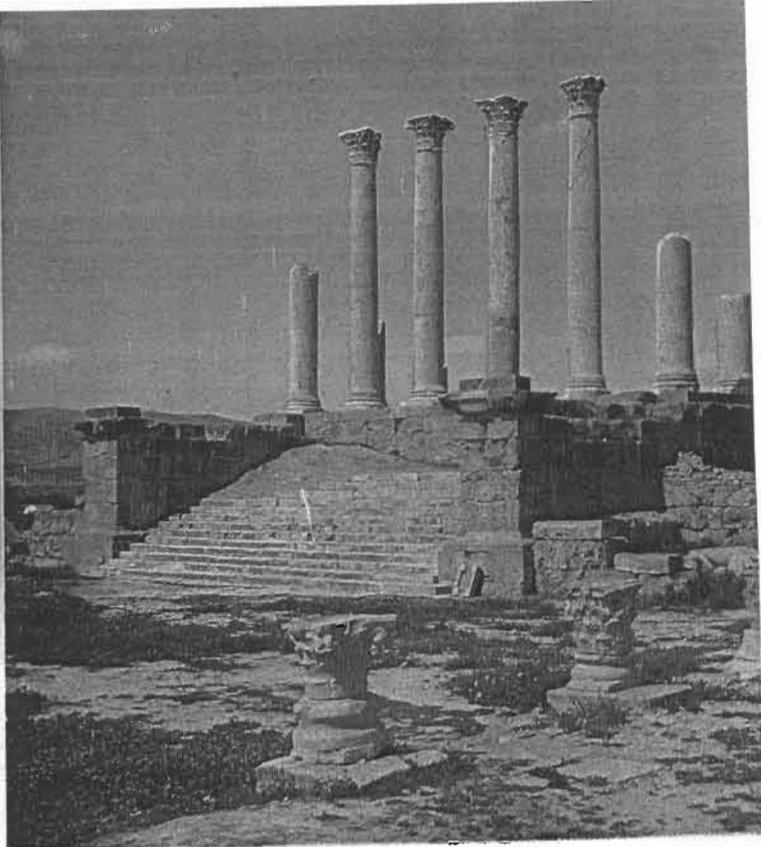


65 The raised podium of the Temple of Rome and Augustus at Lepcis Magna was reached by these unobtrusive lateral stairs

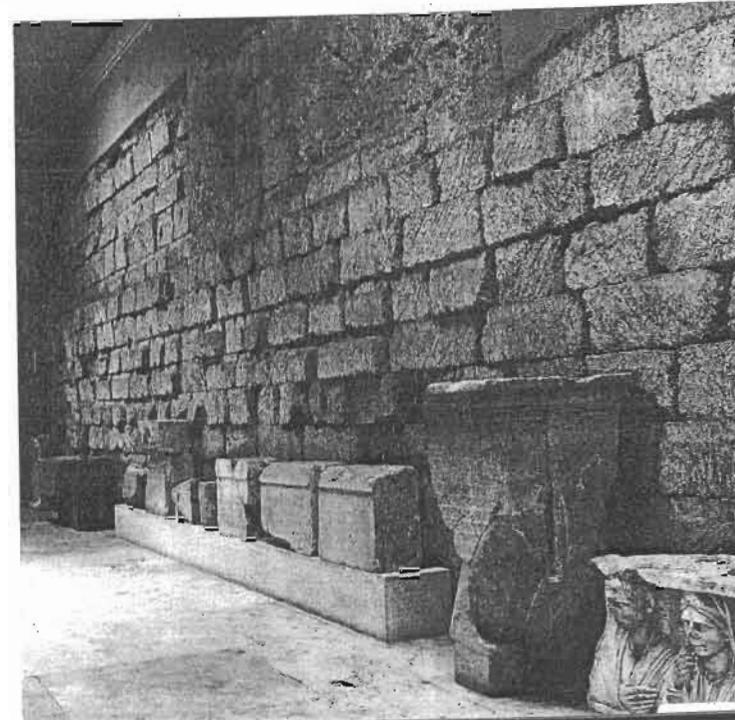
amongst the medieval Gothic cathedrals of western Europe. The differences may be observed with a proper thankfulness for diversity.

The largest of the early temples of Rome was that which was dedicated in 509 BC to the Capitoline Jupiter in the first days of the Republic<sup>29</sup> (Ill. 67). It was often burned and refashioned, but it was apparently about 185 feet wide and 200 feet long, and had a porch of eighteen columns arranged in three rows of six, with a line of columns along each side meeting lateral extensions of the back wall, which was plain. In these flanking colonnades it differed from the Vitruvian type of Tuscan temple, which lacked them. Otherwise it generally resembled the Vitruvian scheme (IV.7), and it had the usual triple shrine of the Capitoline triad, Jupiter, Juno and Minerva. A sculptor named Vulca was called from the Etruscan city of Veii to make terracotta sculptures for its adornment.

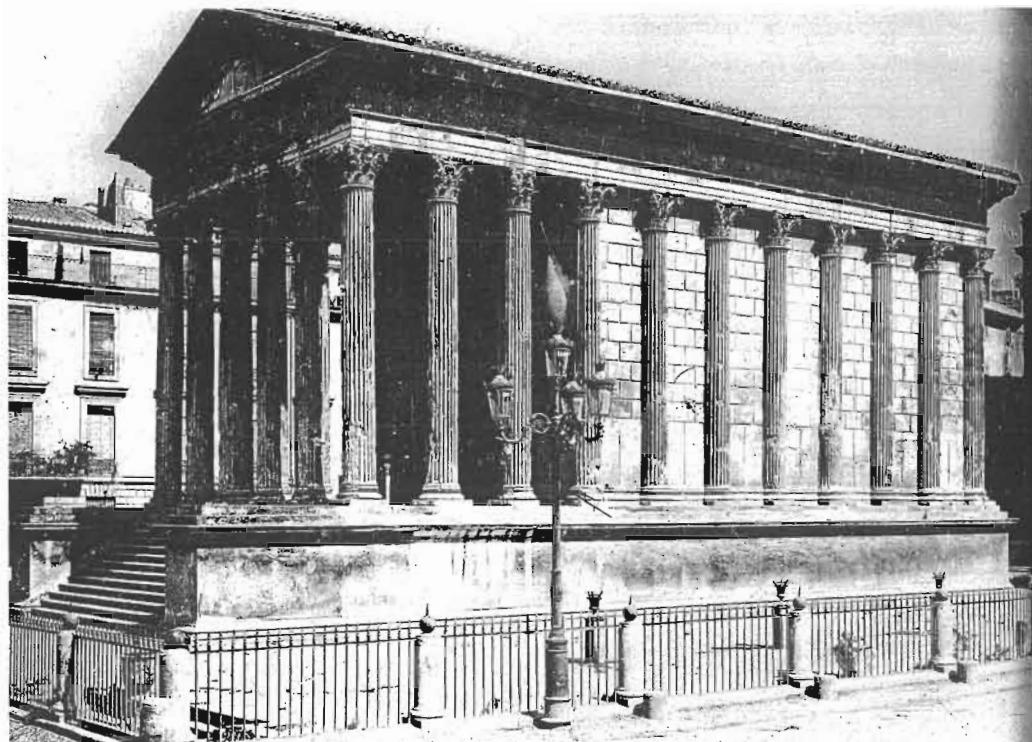
Here we have then a Graeco-Etruscan temple planted suddenly in an immature Rome, but already with a hint of that emphasis of the thickly pillared entrance-façade which was to become a characteristic feature of Roman temples.



66 An impressive flight of steps leads up to the towering podium of the temple (Capitolium) at Thuburbo Majus, near Tunis

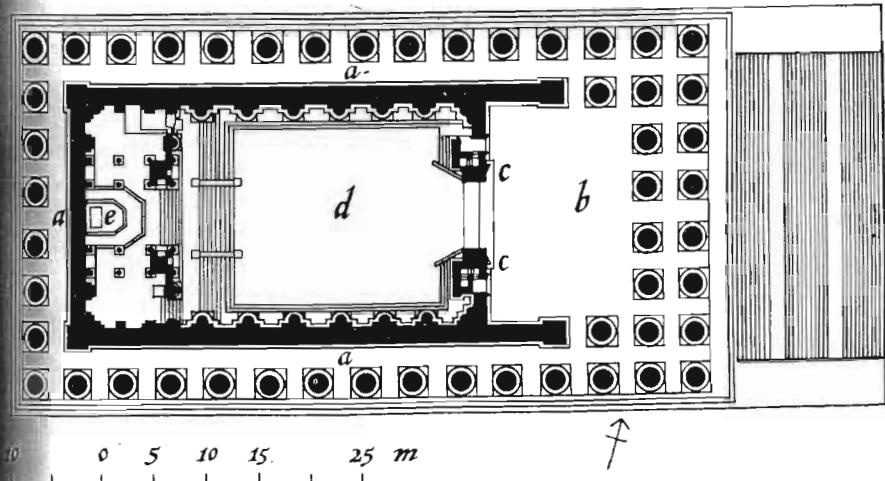


67 Part of the wall of the temple dedicated in 509 BC to the Capitoline Jupiter. This was the largest of Rome's early temples, measuring some 200 by 185 feet



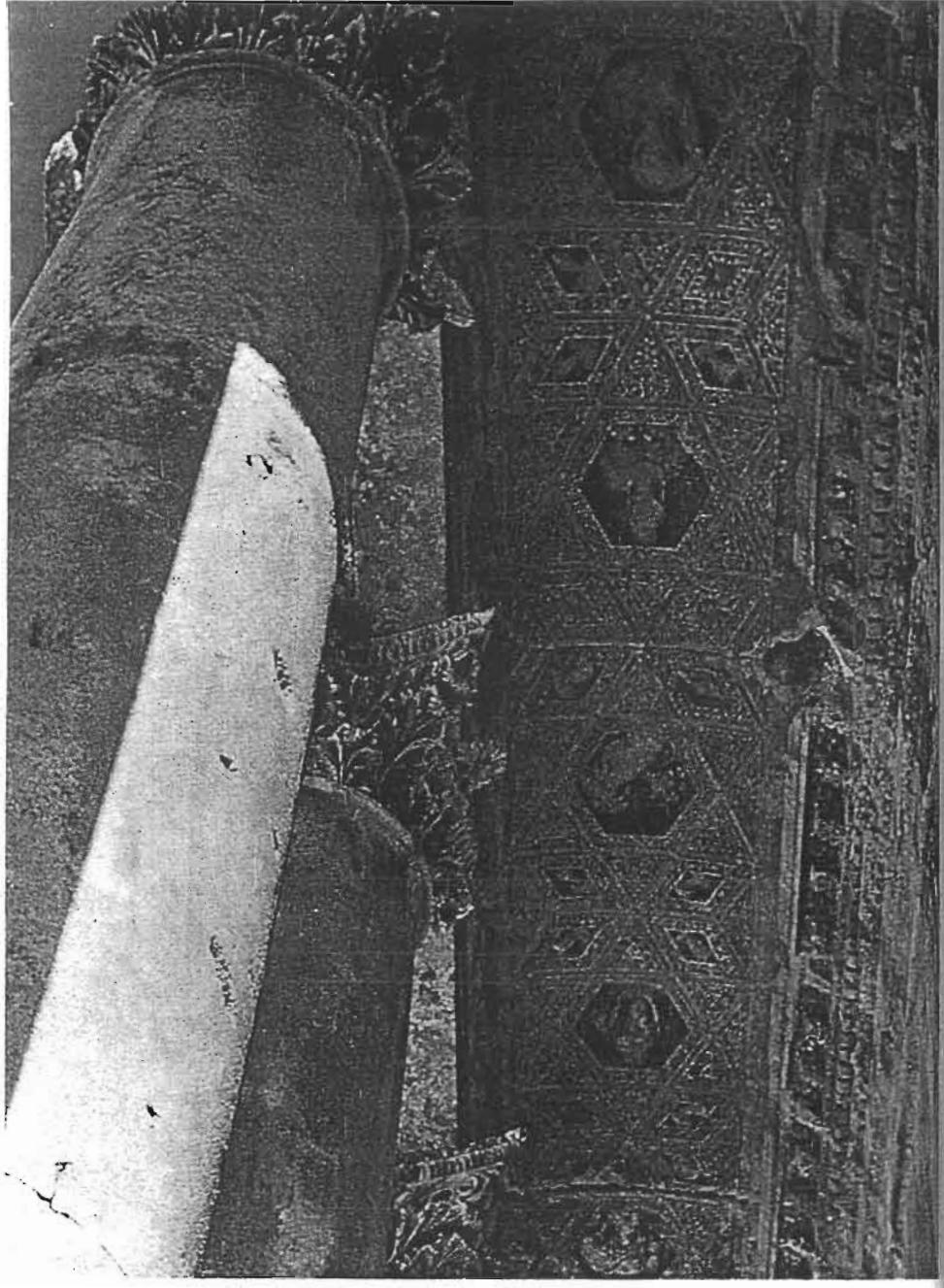
68 The Maison Carrée at Nîmes, built probably in 16 BC. It is the most complete remaining example of temple architecture of the Augustan Age

As a typical example of a later age we may take the well-known temple, the Maison Carrée, at Nîmes in southern France<sup>30</sup> (Ill. 68). It was built probably in 16 BC and is externally complete, save that originally the surviving podium stood on a platform surrounded by porticos which framed the forum of the colony. Its deep porch has three open bays on each side, and attached columns extend round the sides and back of the shrine; in other words, it is hexastyle pseudo-peripteral. It is of the Corinthian order, well carved in the local limestone, with an admirable frieze of tendril pattern. The abaci show the band of flute-like leaves which have been observed as characteristic of the early Empire. The whole building is an unimpeachable, if also an unexciting, example of monumental Augustan architecture, when the Corinthian order was beginning to conform with a limited range of conventions.



69 Plan of the temple of 'Bacchus' at Baalbek. Unusual for a Roman temple is the surrounding colonnade (a). A wide porch (b), flanked by staircase-towers (c) leads into the cella (d). At the western end stood the cult image on a platform under a baldachin (e)

One other temple of the Graeco-Roman tradition, but very different in detail and implication, may be cited: the so-called temple of 'Bacchus' at Baalbek in the Lebanon<sup>31</sup> (Ills. 69, 71). It is in a sufficiently complete state of preservation to enable the visitor to reconstruct it visually, and a very singular building it is. The famous group to which it belongs was completed by the time of Caracalla (AD 211–17), and the temple itself is probably of the middle or second half of the second century. It stands on a high podium; its peripteral colonnade is of unfluted Corinthian columns and it has a deep porch, six fluted columns in width. The surrounding portico (Ill. 70) is roofed with a convex ceiling of monolithic blocks richly carved with framed busts of Mars, Ganymede, Ceres, Vulcan, a city-goddess and others. But it is the interior of the building that mostly matters, in contrast with the more austere or extrovert Greek tradition. The entrance, surrounded by almost riotously ornate frames (Ill. 73), is flanked by two towers which carry stairs up to the roof level – for what purpose is disputed, though the same feature occurs in a number of temples in the Near East, Sicily and southern Italy.<sup>32</sup> Within (Ills. 72, 76), the cella is flanked by Corinthian pilasters



70 The rich carving in the ceiling of the portico surrounding the temple of 'Bacchus' at Baalbek contains framed busts of Mars, Ganymede, Ceres, Vulcan and others

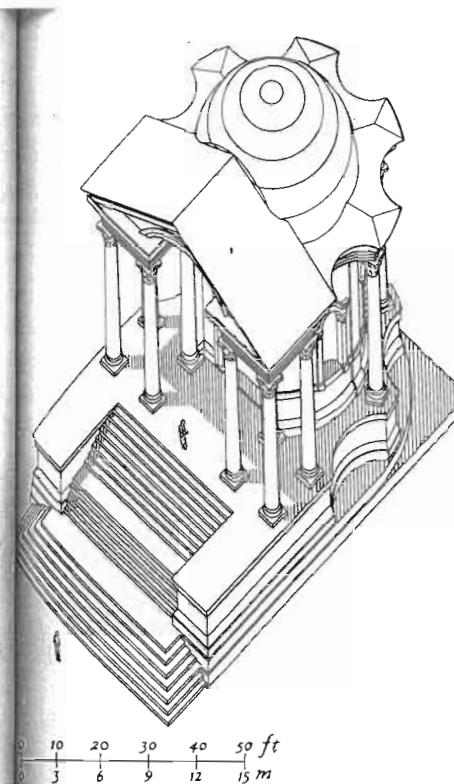


71, 72 (above) View of the temple of 'Bacchus', Baalbek. Built c. AD 150-200, it stands on a podium surrounded by a colonnade. (below) View inside the *cella*

set on a dado and enlarged by fluted Corinthian half-columns on pedestals. Between the pilasters are two tiers of niches, the lower round-headed, the upper with triangular pediments; the higher niches at least formerly contained statuary. At the inner (western) end, a monumental stair approached an elaborate baldachin which framed the cult statue. The whole concept was astonishingly rich – the stone, observed Lamartine, ‘groaned beneath the weight of its own luxuriance’ – and, as the most nearly complete surviving example of its kind, the building holds a unique place in the history of architecture.

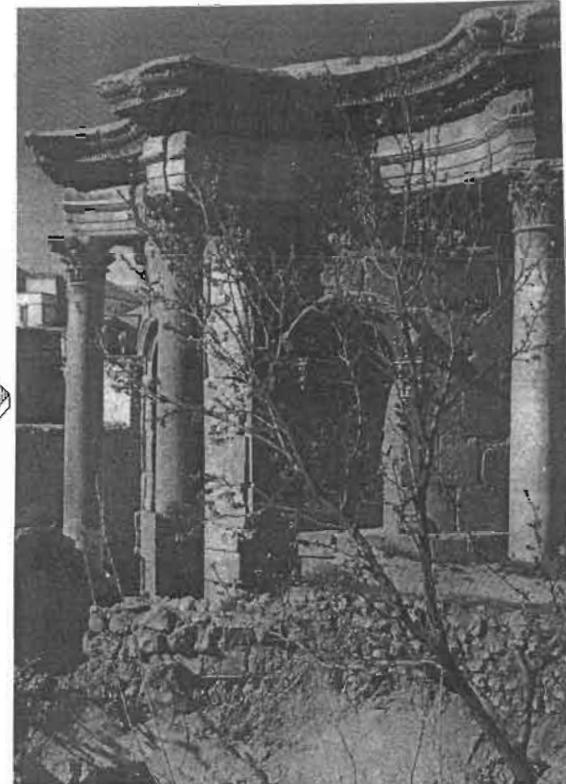


73 The ornate entrance-frames of the temple of 'Bacchus' at Baalbek. Towers on each side carried stairs up to the roof-level

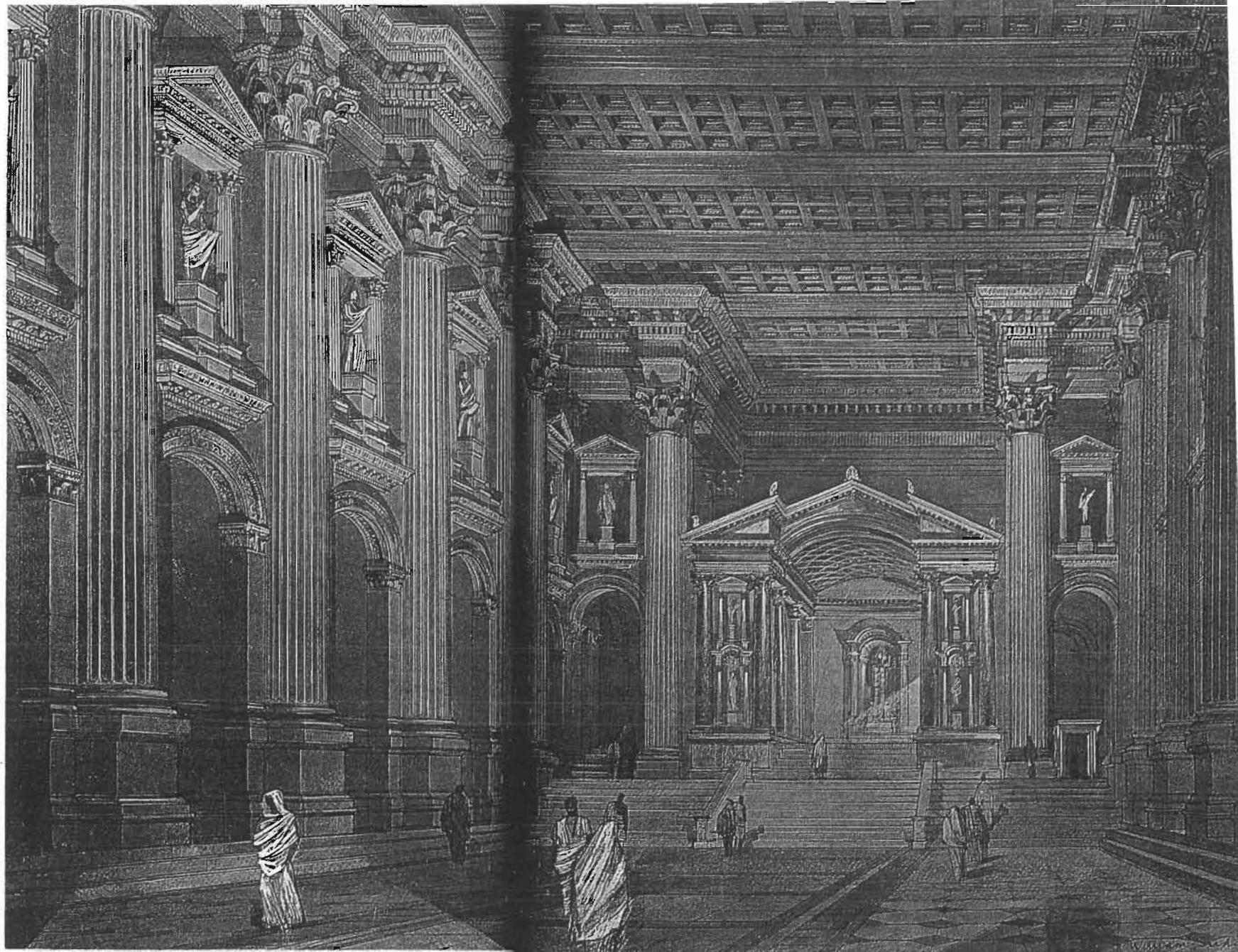


74, 75 The delicate little round temple, sometimes called the temple of Venus, at Baalbek, dates from the second or early third century AD. The broken pediment rested on unfluted Corinthian columns, while the *cella* was roofed by a dome

Whilst at Baalbek we may glance at another masterpiece of this autumn phase of classical architecture; an autumn phase which was at the same time full of anticipation. Outside the main temple-group is a small circular shrine of unusual charm (Ill. 75), attuned sufficiently to the quality of a later age to reappear in elaborated form as the lantern of Borromini's church of St Ivo in Rome about 1650.<sup>33</sup> The Baalbek shrine, ascribed without evidence to Venus, is of second or early third century date and of a complicated circular plan (Ill. 74). The round *cella*, with its doorway in a north-western arc, fronted by a rectangular porch, is encircled by Corinthian columns with five-sided capitals and linked by architraves concave on plan. The building was crowned by a masonry dome, and stands on a podium  $9\frac{1}{2}$  feet high. It is a gem.



76 Reconstruction of the interior of the temple of 'Bacchus' at Baalbek. One of the most magnificently decorated of all Roman temples, it was turned into a Christian church, probably by the Emperor Theodosius (AD 392-5)



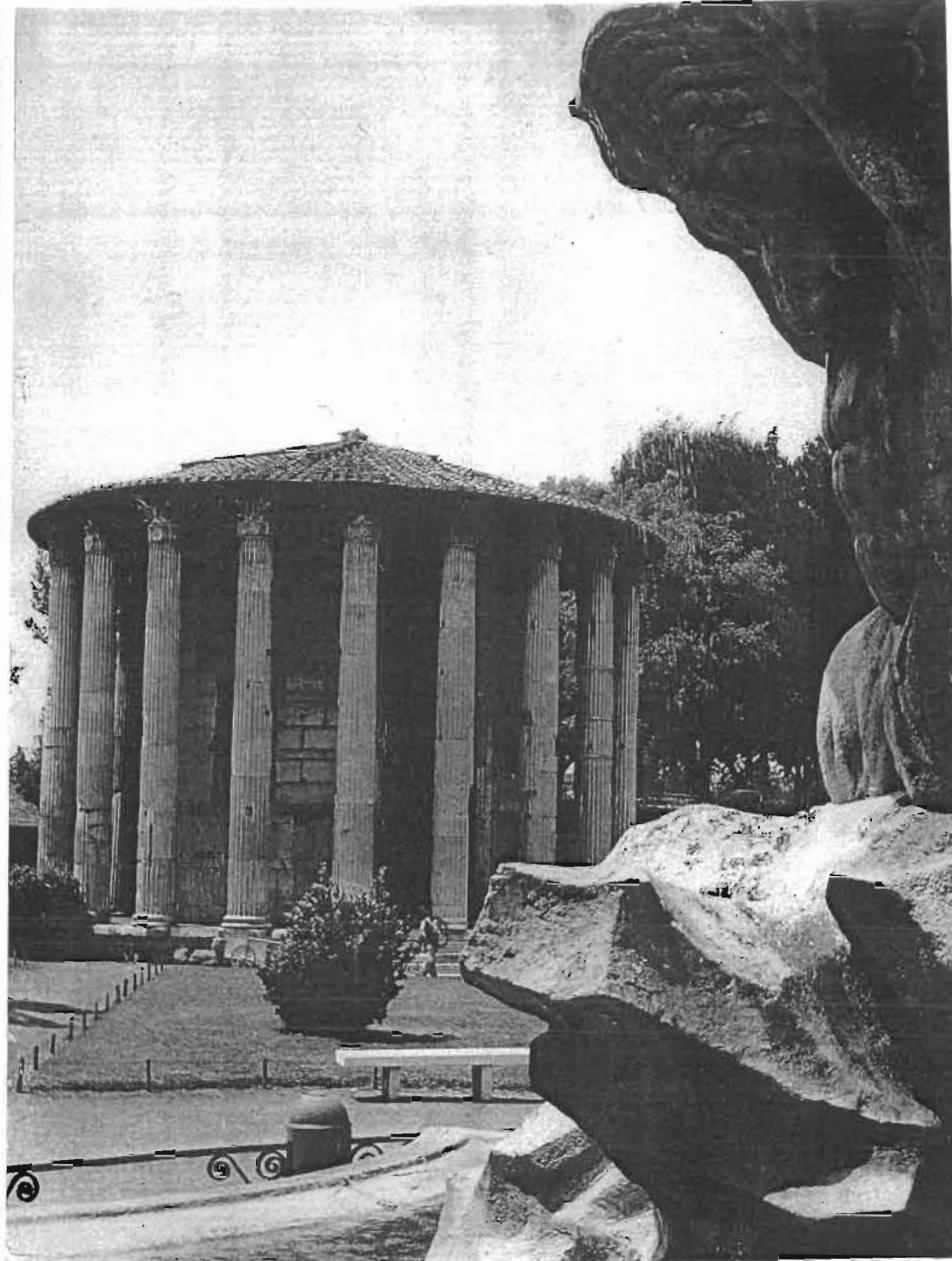


77 Column-capitals and frieze of the 'Temple of Vesta' at Tivoli. The capitals are of an individual type copied by Sir John Soane for the façade of the Bank of England

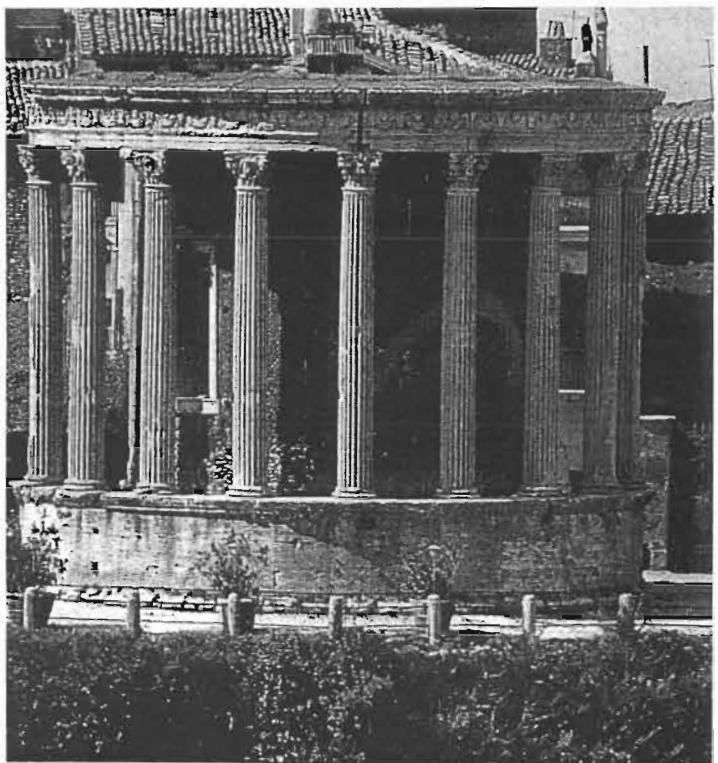
Two other circular temples may be mentioned. The so-called Temple of Vesta at Tivoli, near Rome (*Ill. 79*), is a good example of Corinthian of the early first century BC. The frieze was of a normal Hellenistic type and was adorned with the heads of oxen linked by garlands. The column-capitals (*Ill. 77*) are an individual variety which was copied by Sir John Soane in the eighteenth century for the façade of the Bank of England (*Ill. 80*). It has been improbably conjectured that the temple was roofed with a concrete dome.

The Tivoli temple was of tufa, travertine and concrete, but the familiar circular temple, now the little church of S. Maria del Sole (*Ill. 78*), beside the Tiber at Rome, is of Pentelic marble save for the tufa podium which, unlike the Tivoli podium, is completely surrounded by steps in the Greek manner. The entablature has gone and the dating is uncertain; but if, as some have proposed, it is as late as the early Empire, it must be regarded as an archaism. It is probably earlier, not later than the middle of the first century BC.<sup>34</sup>

Circular or polygonal temples with surrounding porticos, of the so-called 'Romano-Celtic' type, occur widely in the provinces under the Empire. An upstanding example survives in France at Perigueux and the foundations of several occur in Britain, as at Silchester and



78 The circular temple beside the Tiber in Rome, now the church of S. Maria del Sole. It is built of Pentelic marble on a tufa podium and dates probably from the first century BC



79 (*left*) The round, so-called 'Temple of Vesta' at Tivoli; a good example of the Corinthian order of the early first century BC



81 (*opposite*) Interior of the Pantheon in Rome, painted by Pannini in c. 1750. The greatest of all surviving Roman temples, it was built by Hadrian c. AD 126



80 The 'Tivoli Corner' of the Bank of England, designed by Sir John Soane at the end of the eighteenth century and based on the 'Temple of Vesta', Tivoli



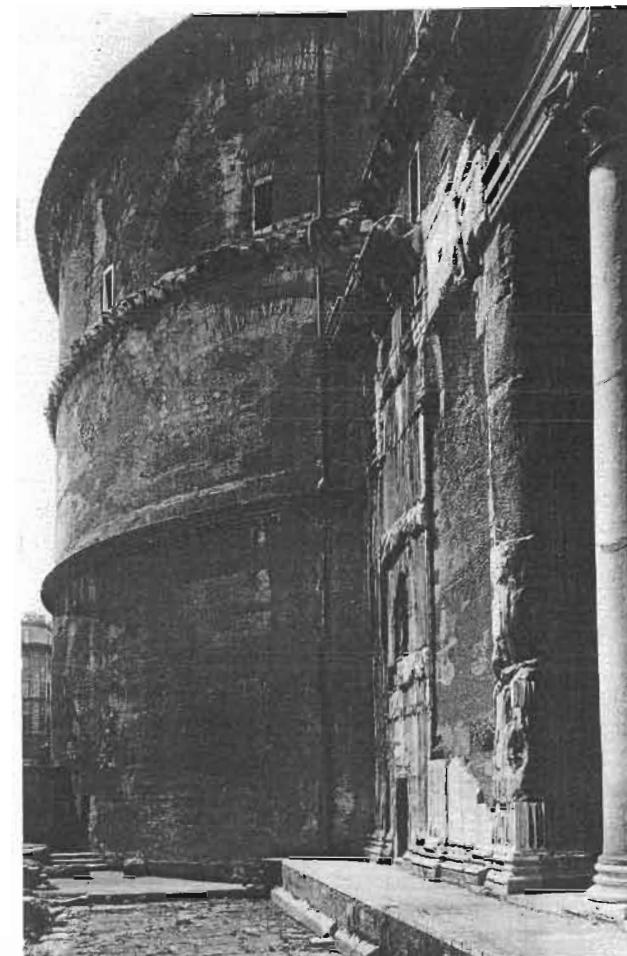
82 Aerial view of the Pantheon in Rome. The bold opening at the top of the dome measures 27 feet in diameter

Caerwent. But in Gaul (outside Provence) and Britain, with sporadic extensions into central Europe, the provincial type is a square shrine flanked on all sides by a portico either with full-size columns down to the floor-level or with small pillars on a breast-high wall. Traces of a pre-Roman building of this shape but of timber were found on the site of London Airport during the 1939–45 war and may be a native prototype, but details are not available.

Of all circular Roman temples, the outstanding survivor is of course the Pantheon at Rome<sup>35</sup> (*Ill. 81*); a building indeed which ranks with the Parthenon and Saint Sophia as one of the landmarks in architectural history. Details of its structure and discussion of the chronology of its parts lie outside this context. It must suffice to record that, approximately as we see it now, the building is the work of Hadrian, about AD 126. It was dedicated to the seven planetary

deities and was in effect an architectural simulacrum of the all-containing cosmos.

Externally, even allowing for the removal of stucco and veneer, it is a building of no special account. The disharmony of portico and rotunda is indeed thoroughly uncomfortable (*Ills. 82, 83*); at best, the portico is acceptable only as an apology to tradition, by its detachment enhancing the originality of the great building which it screens. But as an interior the Pantheon is unsurpassed, and it was as an interior that the structure was conceived. Lightened by its wall-recesses, strong in the powerful lines of its superbly coffered dome, and united with the dome of heaven itself by the bold opening in its summit, this interior is one of man's rare masterpieces. And it is now the first of its kind; something of its quality has been considered above (see p. 12).



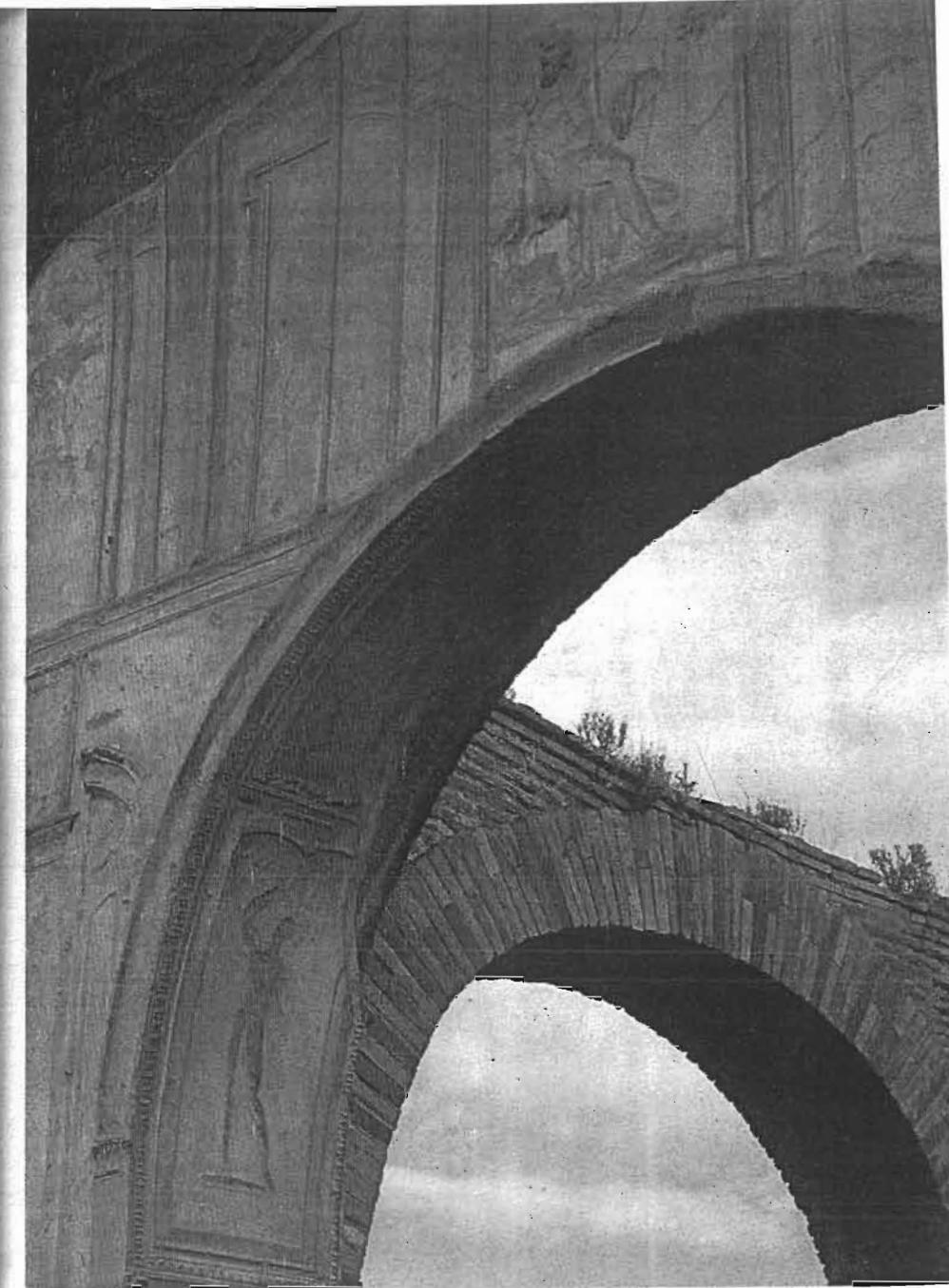
83 Exterior view of the Pantheon in Rome, showing how the traditional portico was attached disharmoniously to the rotunda

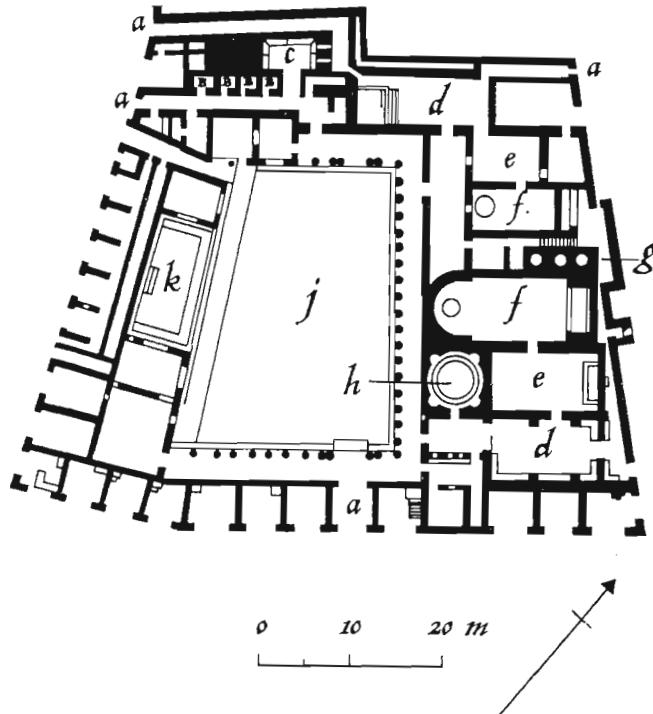
#### BATH-BUILDINGS

Technically, the Pantheon owes its design and quality to the use of concrete and brickwork for the structure of its immense dome. Vaults of masonry, on a small scale, had been constructed here and there by the Greeks or their neighbours as early as the sixth century BC (Pyla in Cyprus), and were used shyly for basements and tombs by the Pergamenes. But the dome was a Roman contrivance, and owes its substantive introduction into architectural design to the development of concrete, or stiffly mortared rubble, in the second century BC. The earliest certain surviving example is in the *frigidarium* of the Stabian Baths at Pompeii (Ill. 84), where the conical dome has a circular opening that anticipated the central opening of the Pantheon some two-and-a-half centuries later.

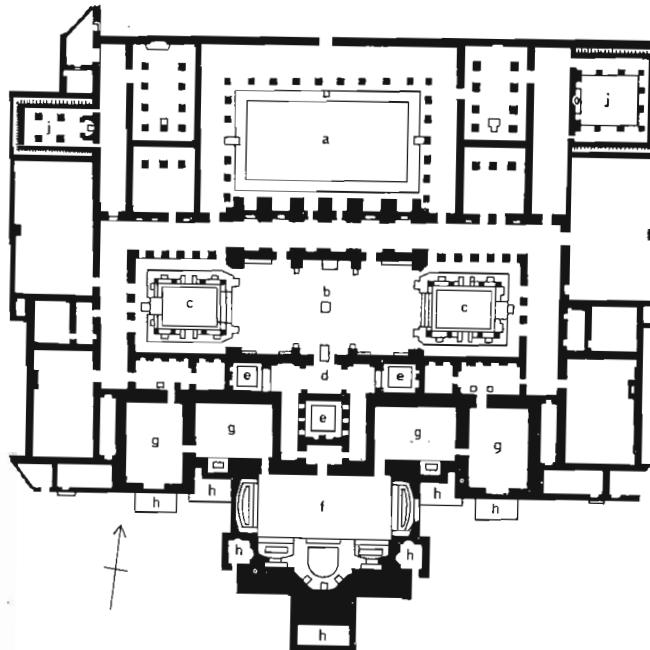
It is an axiom of architectural history that the innumerable public baths of the Roman Empire made an outstanding contribution to the general development of plan and structure.<sup>36</sup> Their elements of course recur in other settings; in basilicae, for example, and other public buildings, and in the palaces of which surviving witness is less ample. But even a small town might well have two or more communal baths on an appreciable and even lavish scale, and the implied assemblage of rooms of varying size and shape within the discipline of a systematized function provided a recurring creative exercise of far-reaching consequence. At first the resultant plan tended to lack coherence; the Stabian Baths themselves illustrate this immaturity (Ill. 85), and so do the Forum Baths of Pompeii early in the first century BC, though already with a hint of greater symmetry. It would appear that some time in the first century AD – evidence is incomplete but includes Palladio's plan of the Baths of Nero (AD 62) – the general lines of the vast symmetrical establishments of the middle and later Empire were worked out in principle, and it may be that Apollodorus of Damascus, who was employed by Trajan, had a final hand in this. Certainly by the time of Hadrian the pattern was set; witness his great baths at Lepcis Magna (AD 126–7).

84 Graceful arches adorned with stucco decoration in the Stabian Baths at Pompeii, second century BC



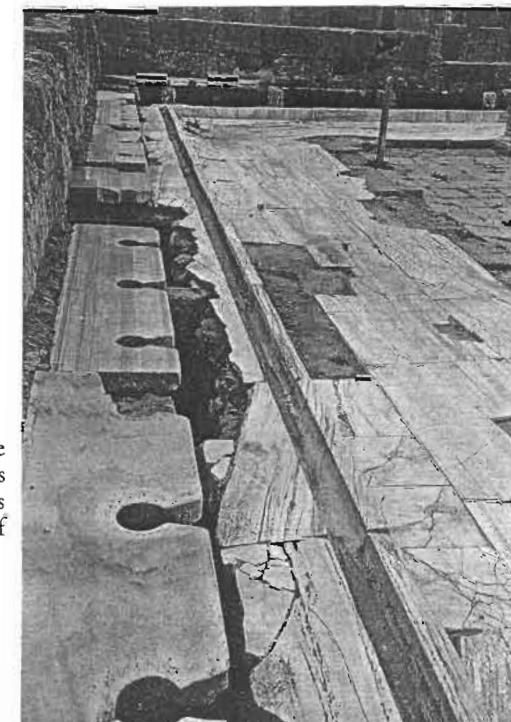


85 The early Stabian Baths at Pompeii were built on an untidy, immature plan. At the northwest corner are two entrances (a), small private baths (b) and a latrine (c). The men's and women's baths on the east side each contained a changing-room (d), tepidarium (e), and calidarium (f). Other features were the heating plant (g), domed frigidarium (h), palaestra (j), and swimming-pool (k)



86 Hadrian's Baths at Lepcis Magna (AD 126-7), show a mature and formal plan. The building included an open-air swimming-bath (a), frigidarium (b), plunge-baths (c), tepidarium (d) with a large central and two smaller baths (e), calidarium (f), super-heated rooms (g), furnaces (h), and latrines (j)

This building<sup>87</sup> (Ill. 86) may be taken as a sample of the manner in which a succession of interiors of wide diversity was reconciled in an overall harmony by means of vaulted and colonnaded vistas and a wealth of connecting or diverting ornament. The outermost compartment was an open-air swimming-bath surrounded on three sides by Corinthian porticos and flanked by pairs of colonnaded halls. Beyond these on each side was a latrine (Ill. 87) in which the occupants sat on marble seats on three sides, regarded by a statue in a niche on the fourth. From the swimming-bath four doors opened on to a corridor surrounding the cold room or *frigidarium* (b), a splendid hall paved and panelled with marble and roofed by three concrete cross-vaults springing from eight Corinthian columns (Ill. 88). At each end of the hall arched doorways opened on to cold plunge-baths. A central door at the back connected the hall with the warm room or *tepidarium* (c), with a large central bath and two smaller lateral baths of later date. Beyond again was the hot room or *calidarium* (d), a large barrel-vaulted room with arched windows which were presumably glazed. On each flank was a pair of super-heated rooms (ee) which constituted the *laconica* or sweating-baths.



87 One of the latrines of the Hadrianic Baths at Lepcis Magna. The marble seats extend round three sides of the room

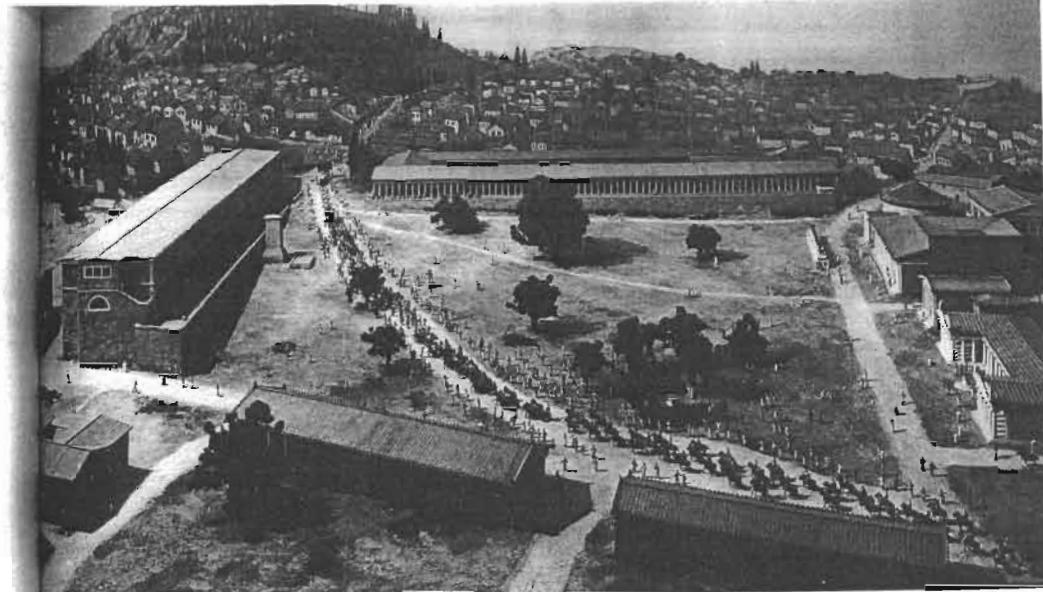


88 Reconstruction of the *frigidarium* of the Hadrianic Baths at Lepcis Magna. The hall was paved and panelled with marble and roofed by concrete cross-vaults

Other apartments in the periphery of the plan are of uncertain purpose, but the greater baths, such as these, not infrequently included a library and exercise-rooms.

#### FORUM AND BASILICA

The market-place – Greek *agora* and Roman *forum* – was the centre of the business and social life of the classical town, save in so far as the Roman public baths eventually usurped elements of social interchange. In Hellenic times the agora was essentially an open space somewhat untidily diversified by public buildings and monuments and, above all, by *stoae* or colonnaded shelters where conversation might continue undeterred by rain or shine. In the Hellenistic period



89 Reconstruction of the agora at Athens in the second century BC. Such open spaces, surrounded by colonnaded shelters (*stoae*) developed into the pattern of the Roman forum

these *stoae* tended to form a more or less geometrical framework to the agora; as at Priene where the agora (before 300 BC) was originally an oblong with a regular portico on three sides, though later a fourth portico of larger size was added on the remaining side. Again at Athens in the second century BC the Stoa of Attalus on the east and the Middle Stoa on the south gave a new geometry to the erratic assemblage which had previously diversified the civic centre (Ill. 89).

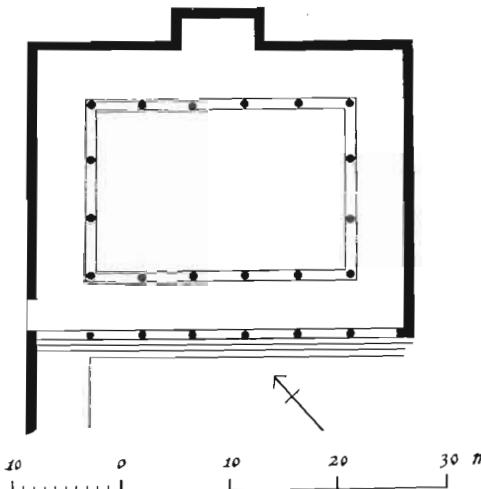
A certain casualness, however, in the lay-out of the market-place lasted occasionally into the Augustan age. At Lepcis Magna in Tripolitania the Old Forum, near the harbour, occupied a roughly quadrilateral area which nevertheless sloped away asymmetrically towards the north and was not trimmed to a three-sided colonnade until AD 53–4. But normally under the Empire the forum was a symmetrical square or oblong space enclosed by colonnades on three sides and by the basilica or town-hall – in fact a roofed extension of the forum – on the fourth. This provides another example of the Roman tendency to enclose places of public assembly; a tendency well illustrated by the evolution of the classical theatre, which began life

under the Greeks as a structure essentially open to the landscape but was turned by the Romans into an enclosed hall by the integration of stage and auditorium.

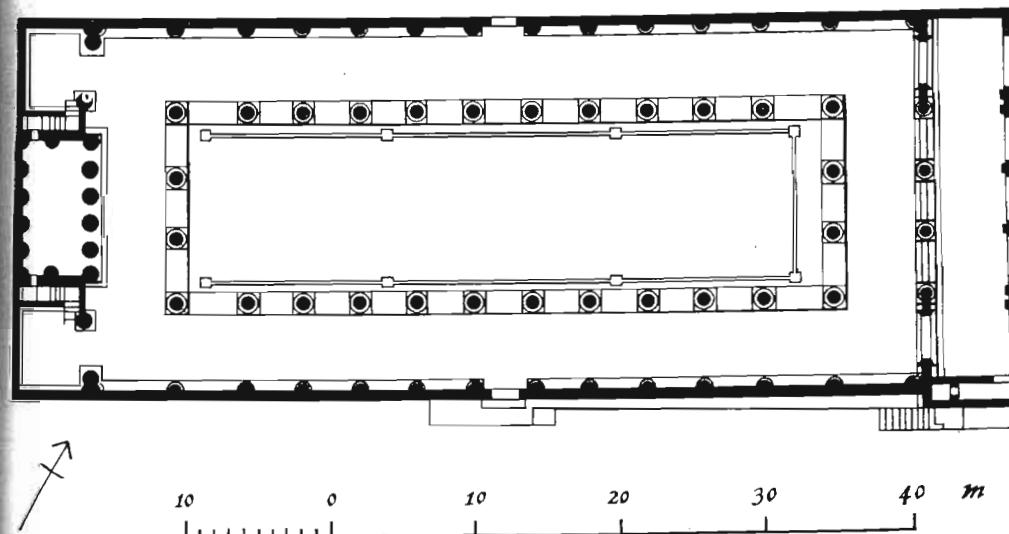
Colonnaded halls or basilicae were not unknown to the Greeks, but the regular provision of a municipal basilica as an adjunct to the market-place was essentially a Roman innovation. The earliest known examples go back to the formative second century BC, when, as we have seen, the use of concrete and the dome, with the parallel development of ambitious vaulting, marked the beginning of a new era in architectural thinking. In 184 BC the elder Cato added the Basilica Porcia to the Roman forum, and a few years later the Basilica Aemilia was built near by. The latter was an oblong hall with an internal four-sided colonnade which probably carried a clerestory. One of the longer sides of the building opened through a colonnade upon the forum. A similar basilica on a small scale, dating from the middle of the second century, has been excavated at Cosa in southern Etruria (*Ill. 90*); in the back wall, opposite the entrance, was a projecting tribunal for the presiding magistrate. The whole scheme resembles that of the basilica built by Vitruvius at Fano about 27 BC and described by him (V.1.6).

Differing from this 'Vitruvian' model was another series represented by the basilica at Pompeii, built prior to 78 BC (*Ill. 91*). Here the oblong hall with its internal ambulatory is entered through one of the short sides, and the tribunal is demarcated within the far end; so that the functional axis is that of the length, not the breadth, of the hall. The early basilica at Lepcis Magna (before AD 53) is of a similar kind, and it is clear that, whatever their mutual relationship, the two types – the 'Vitruvian' and the 'Pompeian' – were in vogue side by side at the end of the Republic and the beginning of the Empire.<sup>38</sup>

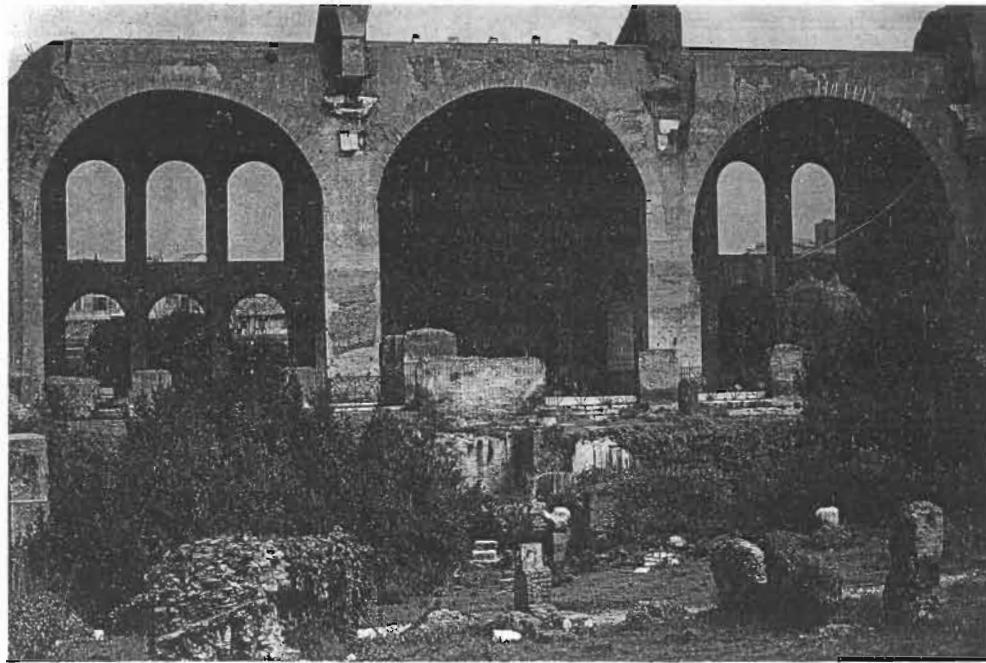
To these archetypes may be added a number of variations, ranging from the great basilicae of Rome, which might have as many as four internal colonnades and great terminal apses, to relatively modest halls with no internal colonnade at all, as at Doclea in Dalmatia or Timgad in Africa (both second century AD). Or again the two primary types might occasionally be combined, as at Cyrene, where



90 The small basilica at Cosa, built in the middle of the second century BC. This was the type described by Vitruvius, with the entrance in one of the long sides and the magistrate's tribunal opposite



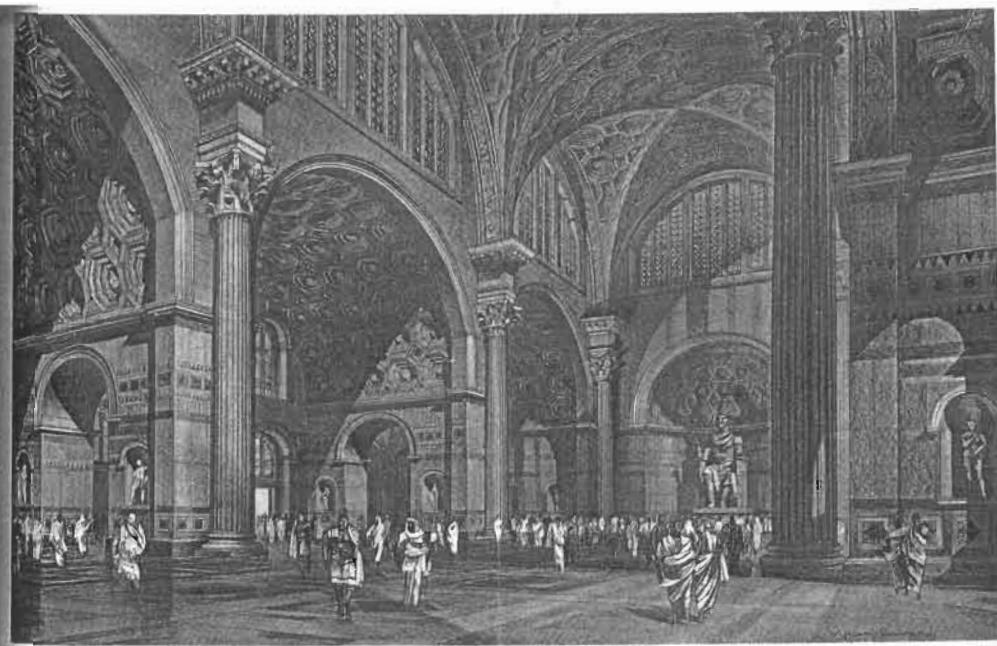
91 The basilica at Pompeii, built before 78 BC, was entered through one of the short sides with the tribunal at the opposite end. This 'Pompeian' type of basilica influenced the design of Christian churches



92 Remains of the Basilica Nova in Rome, completed soon after AD 313. The three massive cross-vaults rose 114 feet above the floor

the basilica is laid out on a longitudinal axis with a large apse (Hadrianic) at one of the ends but a continuous colonnade opening on to the forum on one of the long sides. In this case the basilica is in effect an enlarged stoa, and Greek influence is no doubt responsible.

In the western provinces, and not least in Britain, there was a tendency under the Empire to adopt a simple, closely co-ordinated plan, consisting of a square or squarish forum bounded on three sides by porticos and on the fourth by a basilica, its long axis parallel with its side of the forum. The basilica itself would normally have a range of offices at the back, a tribunal (sometimes apsed) at each end, and entrances in the long side facing the forum. This combination of hall and courtyard was likewise the conventional plan of the headquarters of a Roman fortress, and the respective share of military and civil influences in the evolution of the design is a part of an inconclusive argument which, indeed, goes back in principle to classical times. It is likely enough that the military headquarters owed its plan to a regimentation of civilian practice; but that in the remoter pro-



93 Reconstructed interior of the Basilica Nova in the Roman forum. A colossal statue of the Emperor Constantine sits in the apse at the western end of the central hall

vinces, where military engineers must have had a considerable hand in laying out the first civil buildings, it was the military version which provided the standard model.

Of all surviving, or partially surviving, basilicae in Italy the most imposing is the fragment of the great hall, the Basilica Nova, begun by Maxentius and finished after AD 313 by Constantine in the Roman Forum<sup>39</sup> (Ills. 92, 93). The three massive cross-vaults of its nave rose to a height of 114 feet above the floor, and their lateral thrust was eased by partitions carried across a broad aisle on each side. The western end was strengthened by an apse, the eastern by a narrow entrance-lobby pierced by five doorways. Externally the roof was shielded and enriched by bronze tiles; internally the original splendour of the structure, when its walls and floor were still veneered with marble and glowed with kaleidoscopic colour in the varying light, must have been a memorable spectacle. Constantine changed the functional axis of the building by adding an apse on the northern side and a formal entrance on the southern.

#### THEATRES, AMPHITHEATRES AND CIRCUSES

Briefly, it may be said that the Greek theatre was essentially a structure of the open air, whilst the Roman theatre, whether it had or had not a permanent roof, conformed with the Roman trend towards enclosed interiors. Its *scaenae frons*, the elaborately adorned back wall of the stage, rose to the full height of the semicircular auditorium, and was joined to it by lateral returns, so that audience and actors were entirely withdrawn from the world without. If the theatre was a small one, as were many of the so-called *odea* or concert-halls, it would normally be completed by a timber roof. A large theatre could, when necessary, be sheltered by awnings, and holes for the attachment of the front ropes can frequently be observed in the forward edges of some of the lower tiers of seats. It is possible that masonry corbels, as on the Roman theatre at Orange in Provence (Ill. 99), carried masts at the top of the auditorium and stage-buildings for securing the backs of these awnings. In some cases at least there was a permanent pent-roof above the stage.

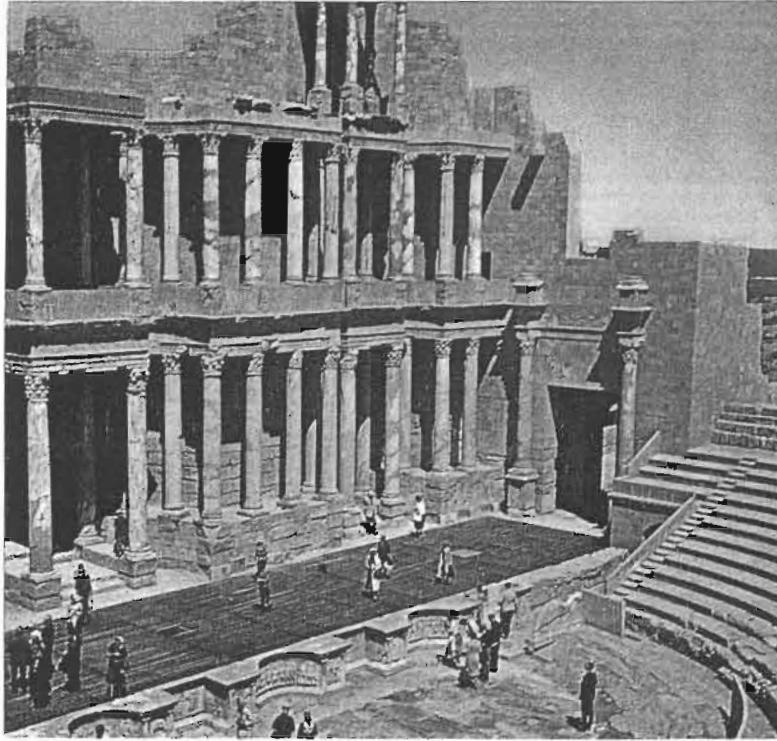
The orchestra, which in the earlier Greek theatres was circular with a central altar and was used by a part of the cast during the performance, was in Roman theatres reduced to a semicircle, embodied in the auditorium and reserved for movable or semi-permanent 'stalls'. For example, in the theatre at Verulamium (St Albans) in Hertfordshire substantial wooden benches occupied this area at one period.<sup>40</sup> The change from Greek to Roman usage reflects sharp changes in function, with religious ceremony and epic drama on the grand scale at the one end and intimate burlesque at the other. In this sense, although based upon Greek prototypes, the Roman theatre was a Roman creation. For a long time it was restricted structurally to temporary wooden booths and staging; Vitruvius (V.5.7) speaks of 'many theatres set up at Rome every year'. Not until 55 BC was a stone theatre built in the capital – by Pompey, who had been impressed by the Greek theatre at Mytilene. The outstanding feature of the major Imperial theatres was the back-scene, the *scaenae frons*, which, as at Aspendos in Pamphylia (Ill. 94) or Sabratha in Tripolitania (Ill. 95), or at Orange (Ill. 99), might be sumptuously enriched by tiers of colonnaded niches with statuary:



94 The *scaenae frons* of the theatre at Aspendos, built in the second century AD. It is the best-preserved Roman theatre in Asia Minor

an elegant background for what must often have been a not particularly edifying entertainment.

Less edifying still, however, were the spectacles offered in the amphitheatres or oval (rarely circular) enclosures which, under the Empire, were a normal emblem of Romanization outside the more Hellenized eastern provinces where, to the credit of the humane Greek tradition, they never took firm root. (The amphitheatre at Pergamon and the conversion of the Hellenistic theatres at Dodona in Epirus and Xanthos in Lycia into amphitheatres during the Roman period are rare exceptions.) The various forms of brutality for which they were the setting were originally practised in the open market-place (Vitruvius V.1.1), and the earliest structural amphitheatre is that at Pompeii (Ills. 96, 97, 98), built after 80 BC. It is a paradox that a part of Italy which had owed much to Greek colonization should have been the pioneer in this matter, but an apologist could fairly



95 The theatre at Sabratha with its elegant colonnaded *scaenae frons*, similar to the other North African example at Lepcis Magna (Ill. 35)

emphasize the essentially Oscan and non-Greek elements in the make-up of this Campanian town. Farther south the Lucanians were already painting gladiators and pugilists on their tombs at Paestum in the fourth century BC. The earliest stone amphitheatre at Rome was not built until the time of Augustus; but perhaps the greatest work of architectural engineering left to us by Roman antiquity is Rome's Colosseum (Ill. 102), built by the Flavian emperors within the last quarter of the first century AD on the site of the lake of Nero's Golden House. With its tiers of arches, its superimposed orders in the form of half-columns, and its crowning range of pilasters, it was to become a pattern for Renaissance architecture.

Between this vast structure, designed to hold 45,000 spectators, and the little enclosures – some of them scarcely larger than cockpits

96 (right) Wall-painting from Pompeii showing riots in and around the amphitheatre in AD 59. An awning shielded the spectators from the weather



97 (below) Exterior of the amphitheatre at Pompeii (built c. 80 BC) showing steps which led up to the rows of seats



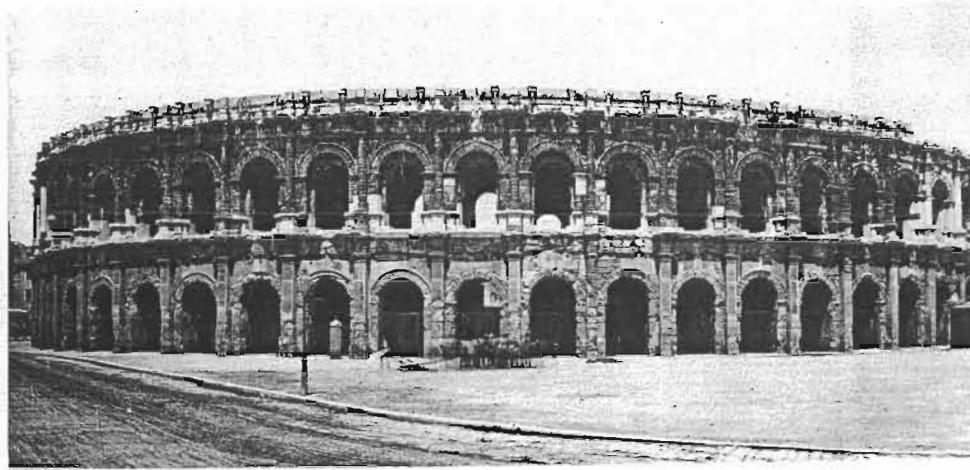


98 Interior view of the amphitheatre at Pompeii. Gladiators and wild beasts entered through tunnels on each side

- which sufficed the needs of soldiery and civilians in the outlands of the Empire, lies a long series of monumental amphitheatres, occasionally still in use for purposes not altogether alien to the original intent. In some instances earthen banks enclosing an oval space and supplemented by timbering or a little masonry were regarded as adequate. Even a legionary fortress like Chester, which eventually had a fine stone structure, might begin with a timber amphitheatre, put up by the garrison in the first days of occupation, just as its modern military successors might hastily improvise a football-ground. These humble provincial versions, however, though important in the history of modes and morals, give place in the history of architecture to the fine, upstanding constructions of concrete and ashlar which can still be seen at Arles or Nîmes or Verona or Lepcis Magna (*Ills. 100, 101*) and, by the exercise of skill in the marshalling of ingenious vaulted substructures (*Ill. 103*) and even in the controlled use of decorative detail, were a recurrent



99 *Scaenae frons* of the theatre at Orange. Masonry corbels at the top of the auditorium and stage buildings were probably to secure awnings



100 The well-preserved amphitheatre at Nîmes, which was built probably soon after 30 B.C. Amphitheatres scattered all over Italy and the western provinces of the Roman Empire testify to their great popularity there, but are rare in the more Hellenized East

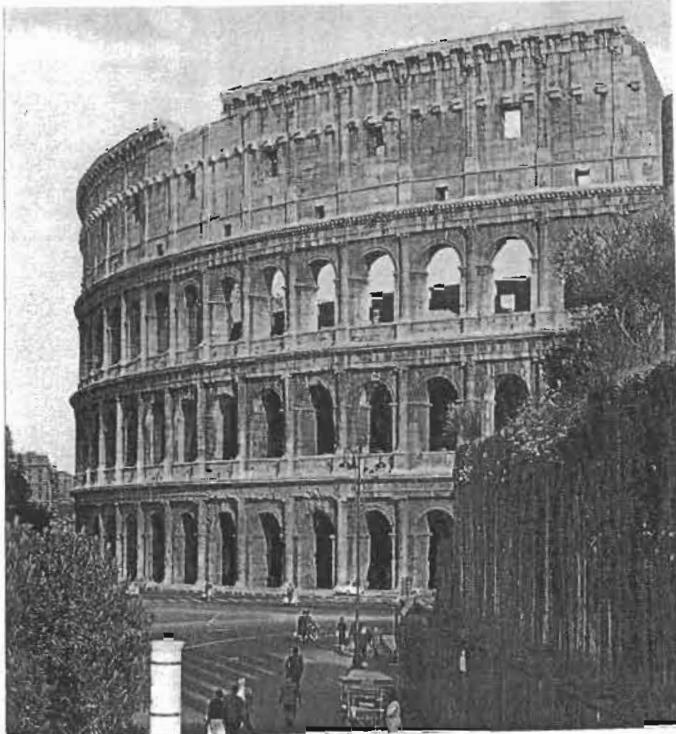


101 The amphitheatre at Lepcis Magna in the course of excavation. It was doubtless supplied with animals by hunters such as those depicted on the walls of the 'Hunting Baths' (Ill. 39)

stimulus to the Roman, and indeed the Renaissance, designer and builder. Behind the sorry story of human and animal bloodshed which they represent, these sombre memorials have a positive and creative aspect which may not be ignored.

Of the circuses (Ill. 105) little need here be said. Their general shape in Roman times reflected that of their Greek predecessors. Built on large tracts of eligible flat ground, few of them have survived save as the most shadowy of ghosts amidst busy modern streets. One of the best of them can be seen today at Perge (Ill. 104), near the southern coast of Turkey, where the sloping stone sub-vaults built probably in the second century AD to carry the seating have survived in a remote countryside, and show the normal plan of the elongated racecourse, rounded at one end and open or squared at the other. Down the centre formerly stood the dividing *spina*, marked by monuments such as still indicate the axis of the famous circus of Constantinople (Istanbul) or, in the form of a monumental pyramid

102 (right) The Colosseum or Flavian Amphitheatre in Rome. Built at the end of the first century AD, it could accommodate some 45,000 spectators



103 (below) Interior view of the Colosseum in Rome. The floor has been excavated to reveal its intricate vaulted sub-structures





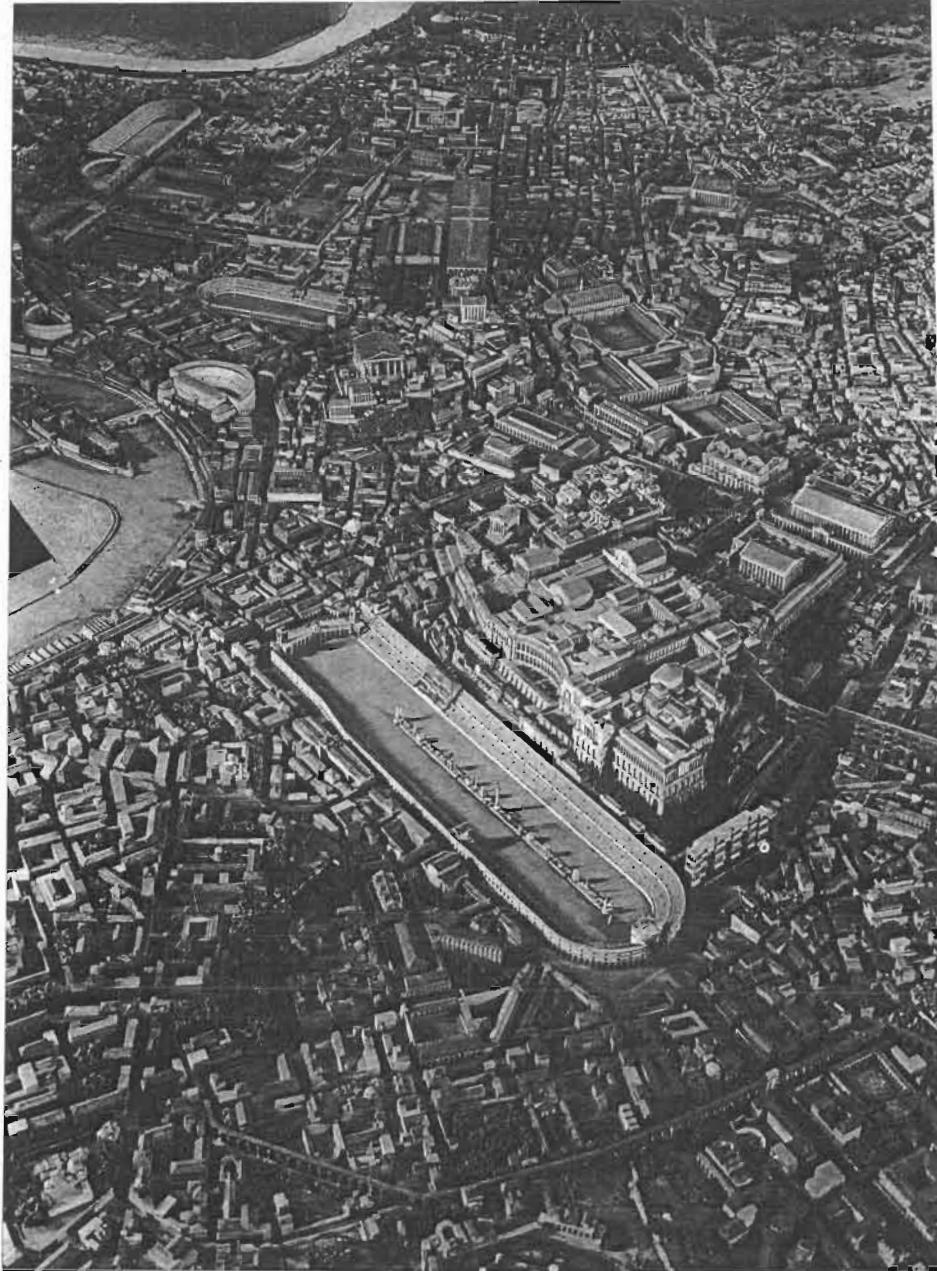
104 The circus at Perge showing the sloping stone sub-vaults which carried rows of seats for the spectators. It was built probably in the second century AD

carried on an arcaded pedestal, that of the circus which underlies a residential suburb of Vienne, south of Lyons.

#### HOUSES

Roman town-houses represent diverse traditions and adaptations of which only a brief sketch can be attempted here.<sup>41</sup> The basic scheme of the average classical dwelling, as of far earlier houses in the Orient, was that of an unroofed courtyard surrounded by rooms, of which one might be of dominant size. In the present restricted context, Roman variations on this theme, and one or two other types, will be illustrated by examples from key sites.

First, Pompeii. The oldest houses here, going back to about 300 BC, consisted of rooms grouped with an un-Greek symmetry round a court or *atrium*, which usually contained a tank for rain-water (*Ills. 108, 109*). This court was regarded by Varro and Vitruvius as the principal room; though whether it began as a central hall, or whether it was originally an open yard which, as time went by and



105 Model of the area of Rome around the Circus Maximus as it probably appeared in the fourth century AD. The circus was 2,000 feet long, 650 feet wide and could seat 255,000 spectators

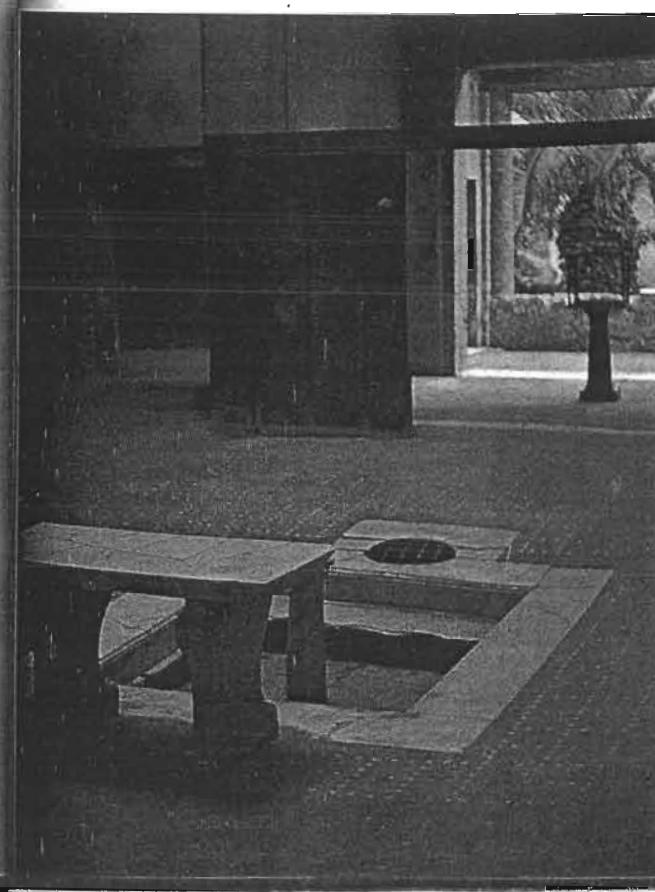
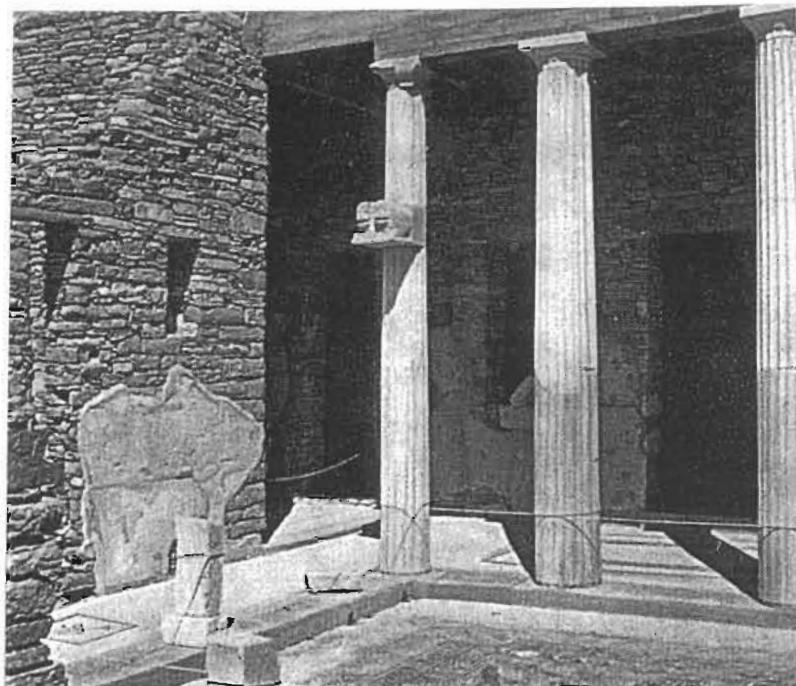


106 The restored garden and peristyle of the House of the Vettii at Pompeii (before AD 79). This is a typical example of the elegant small town-house of the time

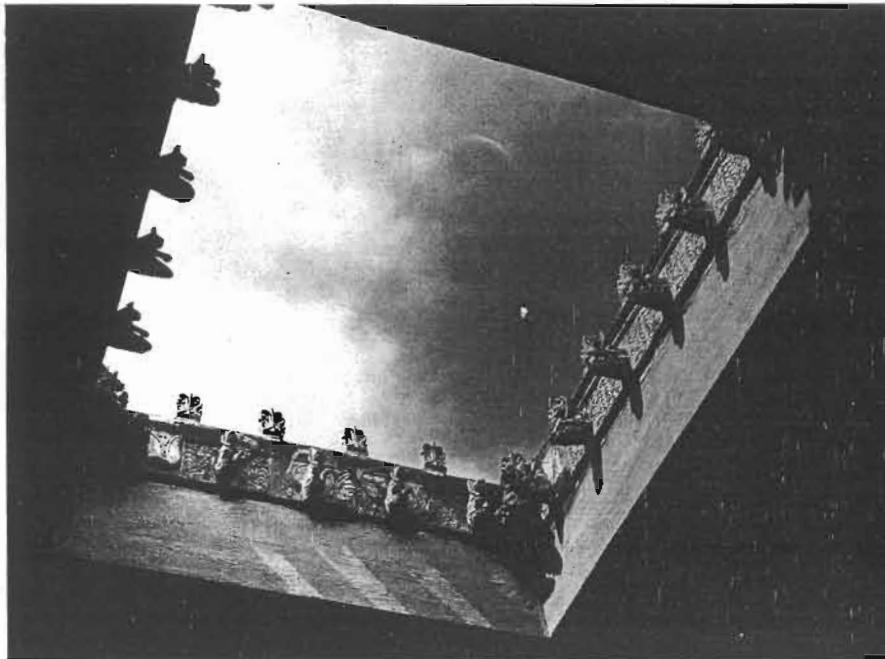
urban accommodation became more precious, was covered save for a central opening above the tank, is disputed. A further elaboration was the sensible introduction of four or more columns about the tank, thus producing something of the effect of a Greek portico.

Beyond the atrium was the principal room, the *tablinum*, open-fronted or at most screened by a curtain; and beside this, right and left, were two *alae* or recesses from which access could be obtained to the back rooms without traversing the *tablinum*. Between the *alae* and the front of the house were ranges of private rooms. Except above the *tablinum*, there was an upper storey of limited height, sometimes with balconies, and at the back there might be a small garden. Where, as in the wealthier houses, this garden was a sizeable one (Ill. 106), it might in the second century BC or later receive a peristyle in the Greek mode, commonly with rooms around it.

107 A Roman house of Vitruvius's 'Rhodian' type on the island of Delos retains on one of the high columns of the main range a bracket to support the roof of the lower flanking portico



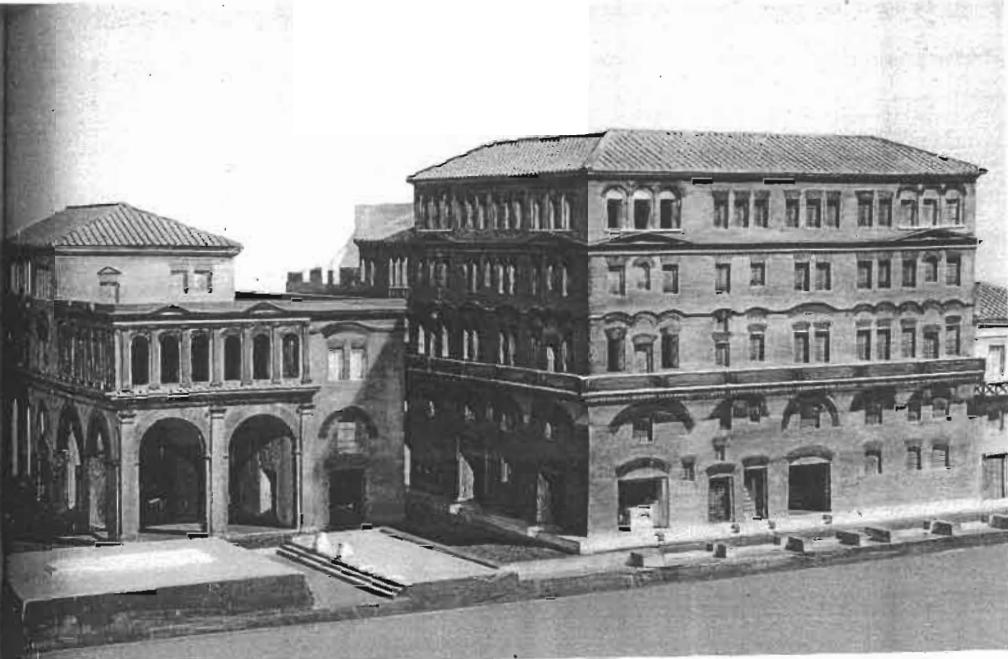
108 The *atrium* of the House of the Wooden Partition in Herculaneum, with, beyond it, the *tablinum*. The tank in the floor was to catch rainwater from a central opening in the roof



109 Opening in the roof over the *atrium* of the House of the Vettii in Pompeii through which rainwater flowed into the tank below

Outside Italy, the 'atrium' house scarcely existed. On Delos, where a considerable community of Roman traders flourished in the trade-boom which followed the capture of Corinth in 146 BC and even survived awhile the destruction of Delos itself by the fleet of Mithradates in 88 BC, the houses of the Roman quarter are of Greek types. Amongst them are good examples of the pattern known to Vitruvius as the 'Rhodian' (Ill. 107): in which the inner range of a colonnaded courtyard was higher than the flanking porticos, and the roofs of the latter rested on brackets projecting from its angle-columns. This contrivance emphasized the importance of the innermost room, which thus in effect equated with the *tablinum* of the Pompeian scheme.

In the great cities the end of the Republic marked for a time the end of the widespread construction of spacious private houses of the Pompeian kind. In Rome and Ostia the busy days of the early Empire meant concentrated populations and rising ground-rents,



110 Model reconstruction of a five-storey tenement block at Ostia, occupying an insula of the residential part of the town

and, as in the comparable circumstances of far more modern times, buildings tended to grow vertically rather than laterally. At Rome indeed high tenements were no novelty. They had been known as early as the third century BC, and Vitruvius (II.8.17), remarking upon the use of brick and concrete in their construction (though wood was also freely used, particularly for the upper storeys), considered that they were not only a necessity in the face of a growing population but were at the same time well worthy of the dignity of the capital. Others, including Strabo, held an opposite view. Certainly, dangers from fire and collapse, culminating in the great fire of Nero's principate, had to be countered by building restrictions; Augustus limited the height to 70 feet, Trajan to 60 feet. Even so, blocks of five or six storeys came easily within the law. Whether these had any real affinity with the famous six-storey houses from which, during the last hours of Carthage in 146 BC, the desperate defenders showered missiles upon the Romans in the streets below<sup>42</sup>

111 The House of Diana in Ostia, a typical tenement-building, was equipped with balconies. In some cases balconies failed to conform with floor-levels and were purely decorative

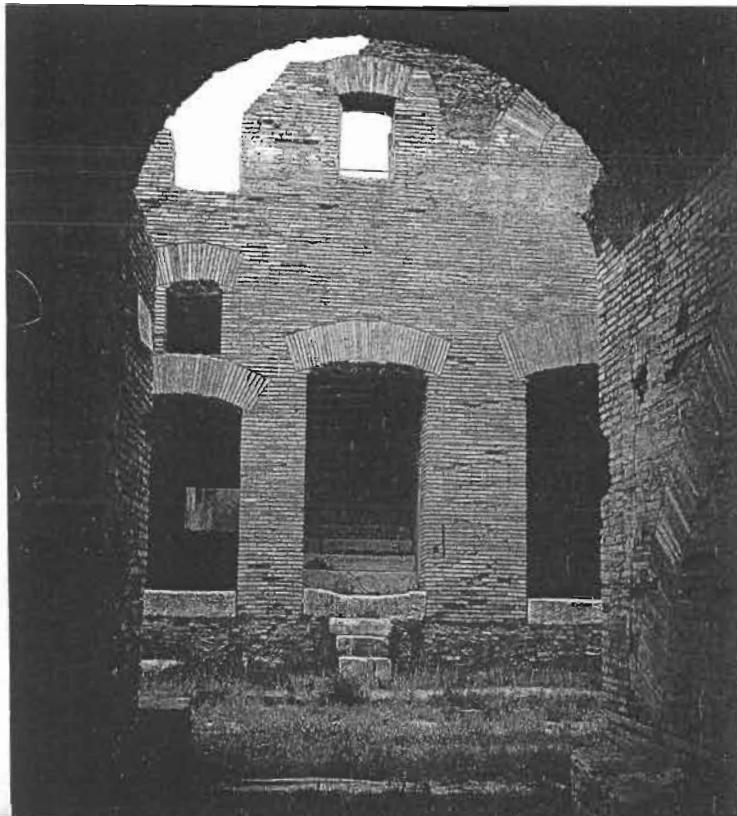


113 A Roman house on the island of Delos which originally stood five storeys high

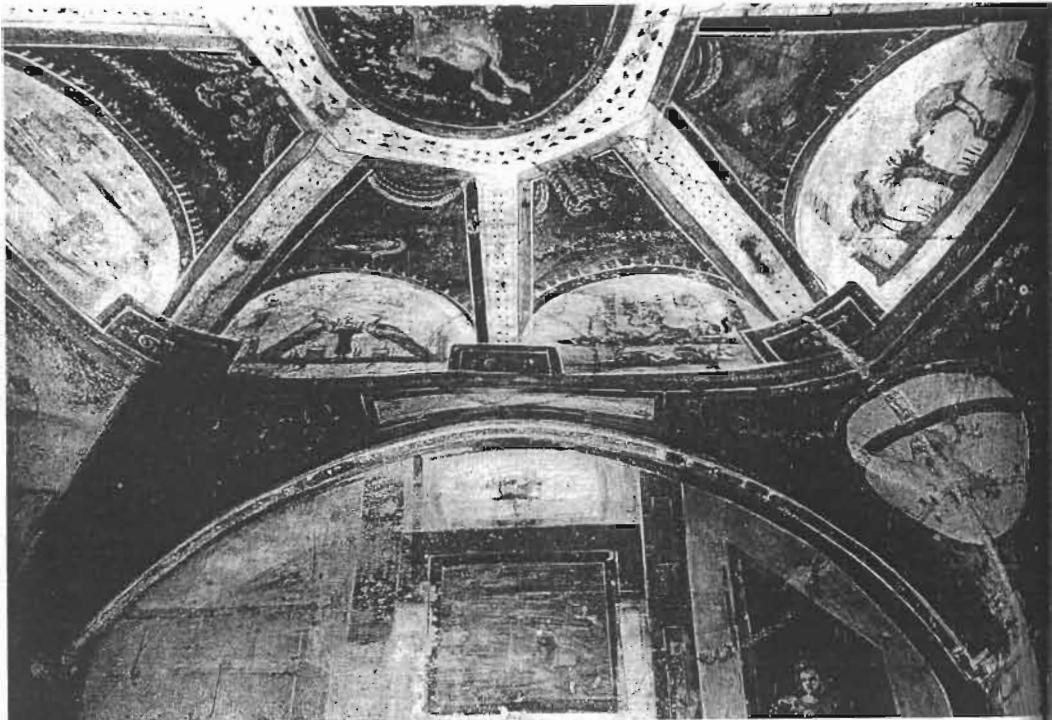


may perhaps be questioned; there too these towering structures perished in the flames. No doubt tall tenements were not uncommon in the more crowded cities round the Mediterranean – they occur at Herculaneum: and a Roman house on Delos still retains evidence of five storeys (*Ill. 113*), though here the sloping hillside may have been a contributory factor.

It is at Ostia that the most ample material evidence of Roman tenement-buildings survives (*Ill. 110*). Externally their aspect was for the most part severely functional. Normally they were built of unfaced brick which might, however, be enriched on the arches or lintels of doorways and windows by vermilion paint, and might be further varied by a plain string-course and by pillars or pilasters at the main entry. Balconies, carried on projecting timbers or stone corbels, more rarely on brick corbel-vaulting, were also a feature of some of the blocks (*Ill. 111*); though the curious observation has been made that these balconies did not, at least in some instances, conform with floor-levels and were actually non-functional – a



112 The apartments of the House of Diana in Ostia were reached by stairs which led up from the street between ground-floor shops

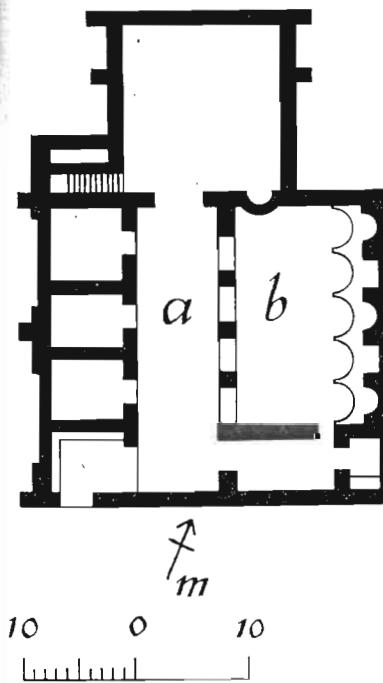


114 'The House of the Painted Vault' in Ostia was so named after its elaborately painted decoration. Its owner was evidently a man of some considerable wealth

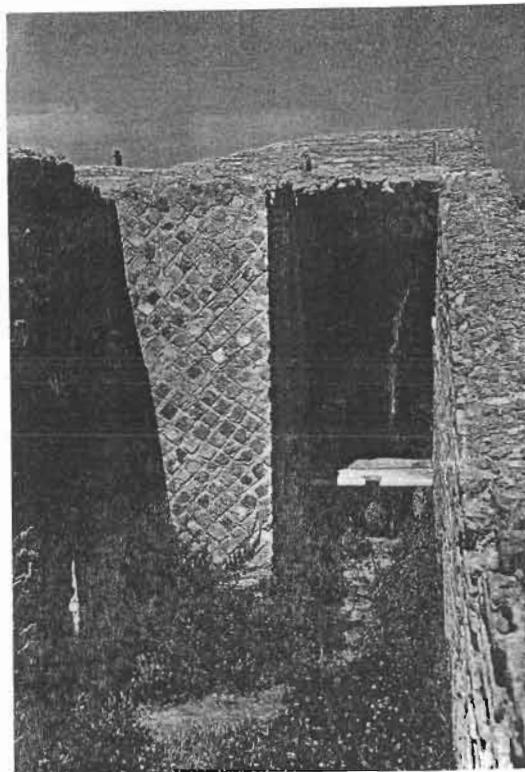
whimsy hard to parallel until the days of Edwardian baroque in England. The flats or apartments were reached from courtyards or from the street by stairs often set between ground-floor shops (Ill. 112). A recurrent apartment-plan comprises five or six rooms served by a spacious corridor overlooking the street and terminating in a room larger than the rest. Walls and ceilings in the better establishments were elaborately painted (Ill. 114), and a fair measure of comfort is implied, though there is an absence of structural heating and, usually, of private sanitation.

When the population-problem began to ease at Ostia under the later Empire, houses of an individual and attractive kind re-appeared in the more peripheral quarters. The opportunist re-use of earlier walls helped to vary their plans, but there are certain common features. Unlike the tenements with their substantial windows, these late houses tend to look inwards and, again unlike the tenements, to

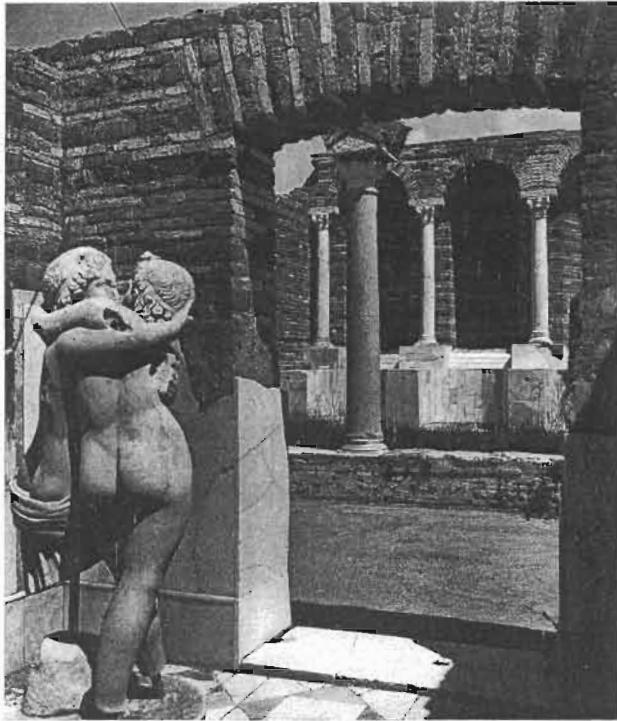
have structural heating with wall-flues. They seem normally to have been of a single main storey with minor rooms above. One of the best of those which have survived is the well-known House of Amor and Psyche (Ill. 115) in the western part of the town. Its principal feature is a wide central corridor opening on one side through a Corinthian arcade on to a small garden backed by a nymphaeum, which consists of five alternately round and rectangular niches fronted by brick arches springing from smaller Corinthian columns (Ill. 117). On the other side of the corridor are small rooms, a staircase and a lavatory (Ill. 116); and at the end is a large room with a niche in one wall. The whole effect is one of graciousness, charm and comfort with a hint of the almost eighteenth-century elegance that sometimes marked the later days of the Empire.



115 The House of Amor and Psyche in Ostia, probably of the fourth century AD, contained a wide central corridor (*a*) opening through an arcade on to a small garden (*b*) backed by a nymphaeum



116 A private lavatory in Ostia. More common were lavatories of the more sociable sort with long rows of stone seats



117 The House of Amor and Psyche in Ostia is one of the best preserved of the more luxurious type of private house. Beyond the charming statue group, after which the house is named, is the nymphaeum

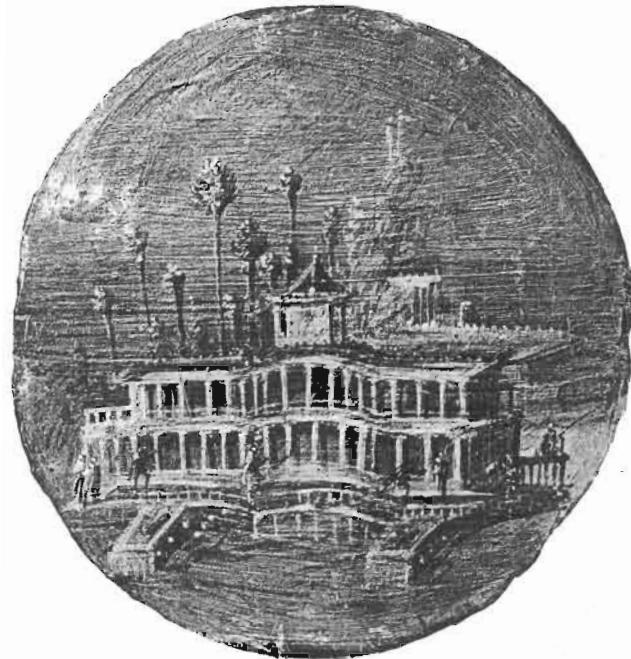
From the constricted environs of the city we turn to the countryside. There, ranging from crofts to immense palaces, were the houses of the small farmers, the agents, and the rich owners for whom the country was part occupation and part divertissement, a quiet setting for good food and good talk (*Ill. 118*). As far away as Glamorgan, on the ultimate shores of Ocean, a country-house spread, with its outbuildings, across three-quarters of an acre of coastal plain amidst fields and, no doubt, a great spread of golden gorse. Gaul was particularly rich in large country-houses, and, as late as the fifth century, they live again in the writings of Sidonius Apollinaris. Some of them were almost small towns. The famous establishment at Chiragan, beside the Garonne between Toulouse and Dax, covered 40 acres and is thought to have contained as many as 400 persons of all grades. It comprised a complex residence and three regimented lines of cottages, barns and other outliers, all framed by a long

boundary wall;<sup>43</sup> and from it was recovered a whole museum of sculptures, many of them of high quality. Again, at Anthée, near Namur in Belgium, a country-house with lines of cottages occupied 30 acres.<sup>44</sup> More recently another large establishment, covering something like 45 acres, has been partially excavated near the village of Montmaurin, 12 miles north of St Gaudens in the Haute-Garonne. The main residence constituted an enclosure of about 10 acres with a wide semicircular entrance-court, two rectangular inner courts, and an aggregate of 200 rooms; and its architecture was of a monumental kind. In these great assemblages of squire's mansion and close dependencies has been identified the Roman prototype of many of the medieval and modern French villages, which not infrequently, as it seems, reflect in their names those of their Gallo-Roman proprietors. Thus Frontinus is recognized in Frontignan, Paulus in Pouilly, Paulinus in Paulignan, Albinus in Aubigny, Julius in Juilly, and many more.<sup>45</sup> Admittedly caution must be exercised alike in these identifications and in the interpretation of the historical processes which they seem to imply.

The nuclear plans of these mansions might often include a peristyle but, particularly though by no means exclusively in the less congenial climate of northern Gaul and Britain, were characteristic ranges of rooms fronting upon a corridor, often with terminal wings. In a number of instances, periods of insecurity, such as the Frankish invasions of 275–6 or the Vandal inroad of 408, induced their owners to fortify them in substantial fashion. For example, a Pontius Leontius, as Sidonius (*Carm. XXII. 117*) tells us, built his house so that 'neither engine of war nor opposing *agger* nor heavy catapult-shot nor massed attacks nor scaling ladders could shake the walls'; and the well-known remains of a fortified mansion can still be seen at Thésée, between Tours and Chabris.<sup>46</sup>

Tiny versions of these immense residences observed the same main principles. A little house at Ely, near Cardiff in South Wales, consisted of four or five rooms round a corridor, with a considerable outbuilding for storage and farm-hands, and even with a miniature but complete suite of baths.<sup>47</sup> In the troubled days of c. AD 300 the house itself was surrounded by a walled bank and ditch. A standard

example of the small farmhouse is that of Mayen, between Coblenz and Andernach in the Rhineland.<sup>48</sup> It began as an oblong timber hut with central hearth in pre-Roman times; was enlarged in stone early in the Roman period, and shortly afterwards received small wings joined by a verandah; at the end of the first century AD it was further amplified with larger wings and a bathroom. Minor buildings of this sort were subject to variations, such as the inclusion of a cellar, or the elaboration of one or both wings into a tower, but they bear the stamp of Romanization, even to the frequent provision of tessellated or mosaic floors. At the same time, to complete the picture we must visualize here and there upon the landscape a scatter of primitive round huts of the prehistoric kind, where, as in much later centuries, herdsmen and charcoal-burners continued to live traditionally on the fringe of the forests and the downs.



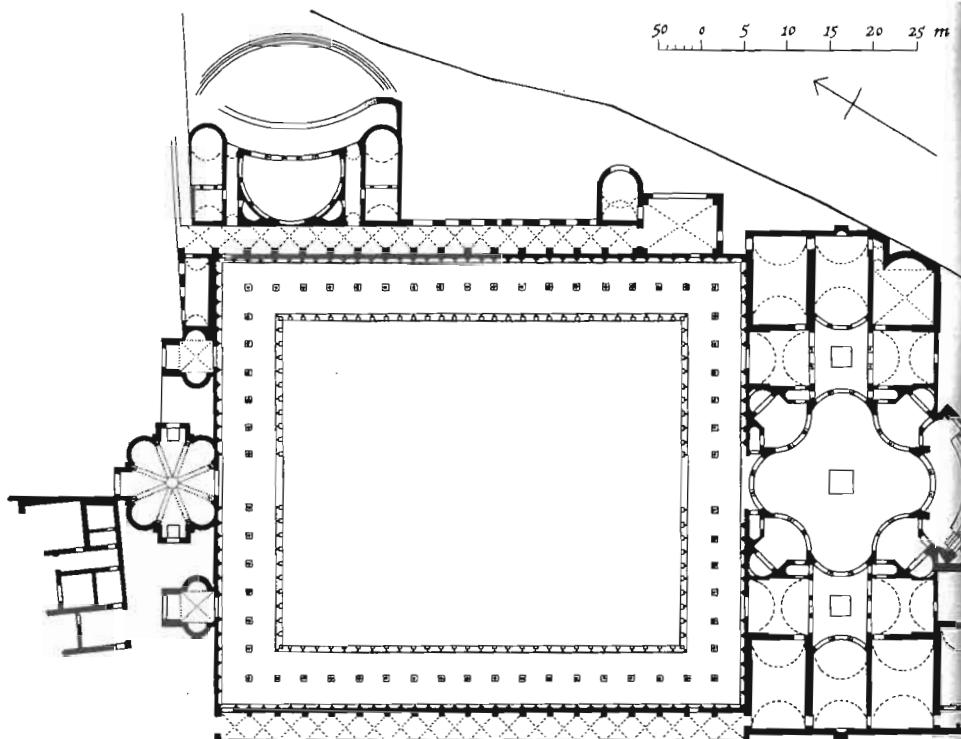
118 Fresco from Pompeii showing a rich country-house with porticos opening towards the sea; before AD 79

119 Detail from mosaic in the 'Room of the Ten Girls' in the Imperial villa near Piazza Armerina, Sicily; late third century AD



#### PALACES

The residence of Augustus on the Palatine was a relatively simple and seemly structure, in consonance with the studied moderation of the first Emperor. But his successors quickly abandoned this austerity, and the new example spread. Certain of the larger Gaulish mansions might be described as palatial in size and quality, and a large villa of the fourth century at Welschbillig near Trier was in all likelihood built actually as an Imperial country-residence. In the centre of Sicily the villa probably of Maximian near Piazza Armerina, with its diverting mosaics (*Ill. 119*), again sets the Imperial standard of elegant excess. But the most extravagant of all Roman country-palaces was Hadrian's great villa, which stretched for a mile across the slopes below Tivoli, 15 miles from Rome<sup>49</sup> (*Ill. 120*). Stripped and shattered though it be, it remains the most fantastic material creation of the Roman genius: of a particular Roman genius, which had travelled



120 Plan of part of Hadrian's villa at Tivoli. The largest feature is the Piazza d'Oro, with its immense colonnaded courtyard. On the left is an eight-sided, domed apartment; on the right a large hall, the dome of which was originally carried on eight piers. Colonnades weave in and out between these piers

far and experienced much, and had learned to temper affairs with sentiment, sentiment with reason. With its 'Poikile' (Ill. 121), its 'Prytaneum', its 'Academy', its 'Canopus' (Ill. 123), its miniature 'Vale of Tempe', it fed the nostalgia of the ageing Emperor; with its 'Styx' and its 'Elysian Fields', it lent an indulgent melancholy to the prospect of old age. It cannot here be described in any detail, but at every turn it offers interest and intelligence in plan or contrivance.

Isolated notes must suffice. At the ends of an immense colonnaded courtyard known as the Piazza d'Oro are apartments of remarkable plan. One is eight-sided with alternate apsidal and rectangular bays, covered by a dome which, like the Pantheon, has a central opening. Between each bay are piers connected by arches; above each of these is a segment of vaulting which merges into the central dome. In a



121 (above) The swimming-pool in the 'Poikile' of Hadrian's villa. Beyond are the ruins of a suite of halls and courts, and to the left what were probably the Emperor's private quarters

122 (right) The ruins of a small, round temple overlooking the 'Vale of Tempe' in Hadrian's villa. The statue is a Roman copy of the Cnidian Venus of Praxiteles





123 The 'Canopus' Canal in Hadrian's villa at Tivoli. The caryatids were adapted from those of the Erechtheum of Athens

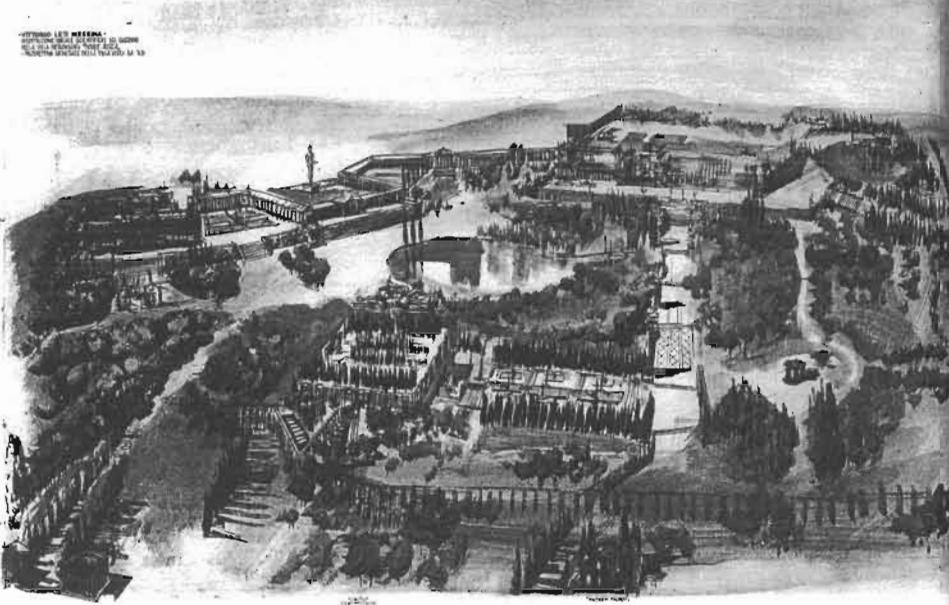


124 Reconstructed model of Hadrian's villa at Tivoli built between c. AD 125 and AD 138. To the upper left is the Piazza d'Oro; in the foreground the Poikile with the circular Maritime Theatre to the left, and stretching away in the middle distance is the Canopus Canal

daring fashion, the skilful use of concrete replaces more logical construction.

At the other end of the courtyard is a larger hall of equally unusual plan. Eight main piers support arches which must have carried a central dome. Between the pairs of piers are recesses with alternately concave and convex fronts on plan, each front supported by columns which thus waved in and out around the central space. Adjacent rooms assist this decorative alternation of supports to distribute the thrust of the dome.

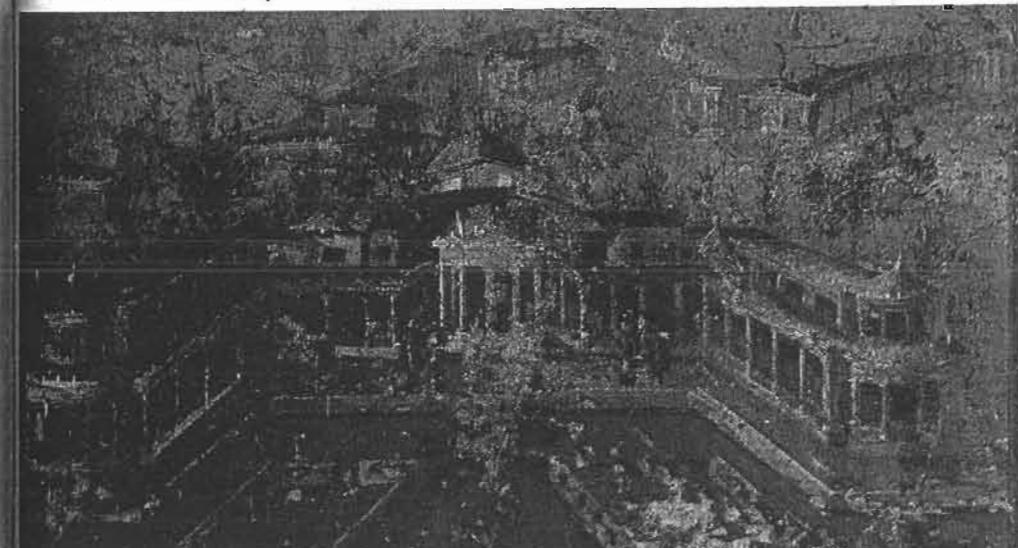
Another charming feature, adjacent to the 'Poikile', is a small island carrying a building approached by little bridges across a surrounding canal within a marble Ionic peristyle: a cool and private retreat which may have been one of the Emperor's studies (*Ill. 121*). The whole palace was enriched with statuary (*Ill. 122*), much of it no doubt imported from Greek lands, and the combination of new and ingenious craftsmanship with traditional features epitomized the outlook of Hadrian and his epoch.



125 An impression of the magnificent Golden House of Nero, which was built by that Emperor in AD 64-8. The Colosseum now stands on the site of the lake

In Rome itself Nero had implanted in AD 64-8 a sprawling country-palace (Ill. 125) between the Palatine, Caelian and Esquiline hills amidst an artificial landscape of which a lake on the site of the subsequent Colosseum was a central feature.<sup>50</sup> 'All Rome is transformed into a villa! Romans, flee to Veii, if only the villa does not also spread itself to Veii!' (Suetonius, *Nero*, XXXIX). Nero, apt as ever, observed that here at last he could begin to live as a human being (*quasi hominem*). Alas for vanity, the House with its gilded porticos, the Golden House of Nero, was shortly buried beneath the great baths which Titus and Trajan, as evidence of changing times, built across the site in and before AD 104. But enough remains of its lofty sub-vaults and tunnels to hint at the magnitude and complexity of the place. Colonnades sheltered the open fronts of long ranges of *sellaria* or sitting-rooms, once veneered with marble and adorned with sculptures. Near the centre of the frontage was a bold polygonal recess or sun-court, such as is shown on the familiar wall-painting from the house of Lucretius Fronto at Pompeii (Ill. 126). Nearby a

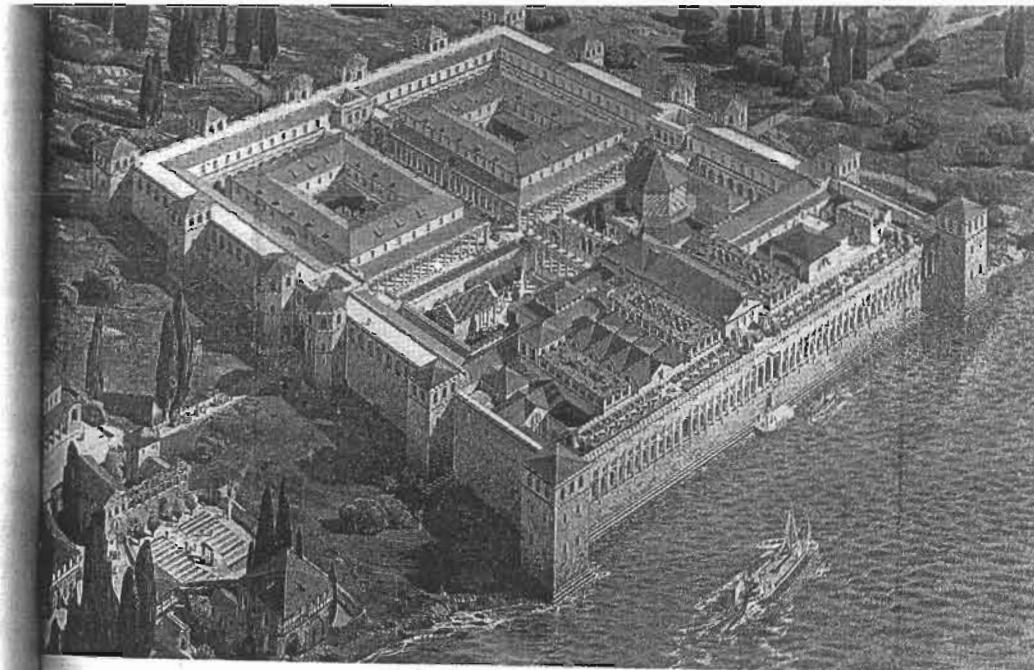
polygonal hall was cooled with water which cascaded down stairs, in a fashion which anticipated the amenities of the Moghul palaces and gardens of the sixteenth century. Behind was a peristyle court, a barrel-vaulted hall, a nymphaeum and other rooms and corridors. These inner rooms were faced with stucco paintings which Raphael sent his pupils to study. Some of the paintings were no doubt the work of that Famulus who, attired stiffly in his toga even when at work on a scaffold during the few hours of his working day, has lived through the centuries as a figure of fun in the pages of Pliny. One dining-room is described by Suetonius as a sort of perpetually rotating globe; a somewhat alarming statement too terse for clear interpretation. The historian is less obscure when he speaks of decoration in gems and mother-of-pearl, of ivory ceilings through which flowers were projected upon the guests below, and of other ceilings pierced with pipes for spraying perfumes. In one way and another, Nero's palace had the sort of Press that the Emperor himself would have appreciated. The considerable remains of its lower storey deserve fresh study.



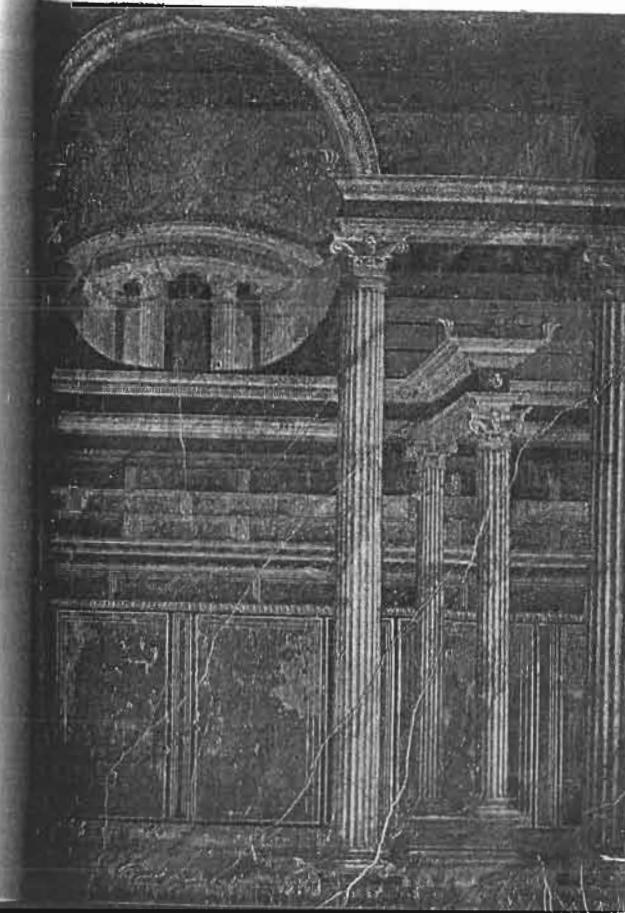
126 Painting from the House of Lucretius Fronto in Pompeii, showing a villa with porticos and sun-court; before AD 79

The successor-palace built by Domitian on the summit of the Palatine is of a less irresponsible sort, though lavish enough in its more conventional and urban way, with successive courts and halls and a great walled garden in the fashion of a hippodrome. But whether relatively constricted by the limits of a hill-top or spread exuberantly across town or country like vast rural mansions, these earlier post-Augustan palaces have one character in common: they belonged to an age of lavish wealth and unquestioning security which were liable to find expression in a cultivated exhibitionism. By the latter part of the third century all this was a thing of the past. The living Emperor had now become a high god and had withdrawn from a secular world which was simultaneously obsequious and unsafe – two qualities which often enough keep unholy company. And this withdrawal is expressed architecturally in a surviving fortress-palace of outstanding interest.

On the coast of Yugoslavia and on the outskirts of the ancient Salona, the older houses and shops of the town of Split or Spalato or Spoleto are crowded within the high defences of the palace to which the Emperor Diocletian retired in AD 305<sup>51</sup> (*Ill. 127*). From the picturesque warren an appreciable portion of the original plan can be disentangled; combining with the apparatus of a remote and splendid pageantry the guarded withdrawal from an increasingly alien world. It is framed by massive fortifications on a rectangular plan, 510 by 600 feet in extent, with walls 60 feet high and 7 feet thick, and with square towers save at the landward gates, where they are octagonal. The enclosure was quartered by broad colonnaded streets, interrupted behind the sea-wall by the Emperor's apartments and by a great hall with a domed vestibule on the line of the north-south street, all built over impressive sub-vaults which have recently been cleared. Between the vestibule and the central crossing the street was flanked by tall Corinthian colonnades with arches springing from the capitals (*Ill. 129*). To the east at this point is the Emperor's Mausoleum, standing on an 11-foot podium and externally octagonal within a peristyle of Corinthian columns on isolated pedestals. The massive walls are reduced internally by deep niches alternately round and rectangular; between the niches Corinthian columns on a



127 (above) Reconstruction of the vast fortified Palace of Diocletian at Split. Built about AD 300, it covered an area of some eight acres



128 (left) Wall-painting in the Villa of the Mysteries at Pompeii, showing an arch springing directly from capitals; first century BC



129 Arches springing directly from the capitals of a Corinthian colonnade in the Palace of Diocletian at Split; c. AD 300



130 The Suburban Baths at Herculaneum, showing arches springing directly from capitals; before AD 79

circular plan carry the projections of an engaged entablature and are surmounted by smaller columns, alternately Corinthian and Composite. The dome, of elaborate brickwork, is round internally and an octagonal pyramid externally. Opposite the Mausoleum is a tiny tetrastyle prostyle Corinthian temple (probably of Jupiter), standing on a vaulted podium and roofed with a coffered barrel-vault of stone above a richly decorated cornice.

On the southern or seaward face of the enclosure a great gallery extended continuously between the corner towers, with a loggia at each end and in the centre. The gallery had forty-two arched windows; between them plain corbels carried engaged columns of a simplified Corinthian type supporting an entablature normally horizontal but arched at two points. The use of corbelled columns appears here for the first time in the history of architecture. Features such as this, or the adoption on a monumental scale of arches springing direct from capitals – a device in fact shown as early as the

first century BC in wall-paintings of the Villa dei Misteri at Pompeii (Ill. 128) and represented structurally both at Pompeii (Casa della Fortuna) and at Herculaneum (the Suburban or Shore Baths) (Ill. 130) during the following century<sup>52</sup> but not fully exploited until much later – place the Spalato Palace on the threshold of a new phase in architectural thinking. Roman is sensibly merging already into Romanesque.

#### ARCHES AND ENGINEERING

The borderline between art and architecture on the one hand and functional engineering on the other is liable to be an arbitrary and pedantic one. So it was in the days of Isambard Kingdom Brunel; it was most certainly so in the days of Rome. The Pantheon and the palace at Spalato were clearly enough artistic creations in the fullest sense. Must we exclude the Pont du Gard and the Milvian bridge? The achievement of Roman art and artifice cannot be presented, however summarily, without them.

It has often enough been affirmed that, with unlimited and expendable slave-labour at their disposal, the Romans lacked necessities which might have been the mother of technological invention. That is less than the truth. The slave-owning Greeks before them, in a smaller and less demanding world, had already displayed a roving and entrancingly youthful curiosity which exercised an innate genius for mathematical speculation and sometimes found practical expression. The technological enterprise of an Archimedes in the third century BC included but was not limited to the siege-engines of Syracuse; his mind played with problems. The Roman mind, in so far as it can be isolated from the Greek mind, was in comparison middle-aged. It was of a more confined and materialistic sort; it had a mature and practical mission; it lent itself more readily to major structural application. And here it may be that, once more without over-emphasizing the Etruscan element, we can in fact detect an Etruscan leavening at work.

Attention has been drawn in particular to two Etruscan contributions in this context.<sup>53</sup> One is that of road-construction, which

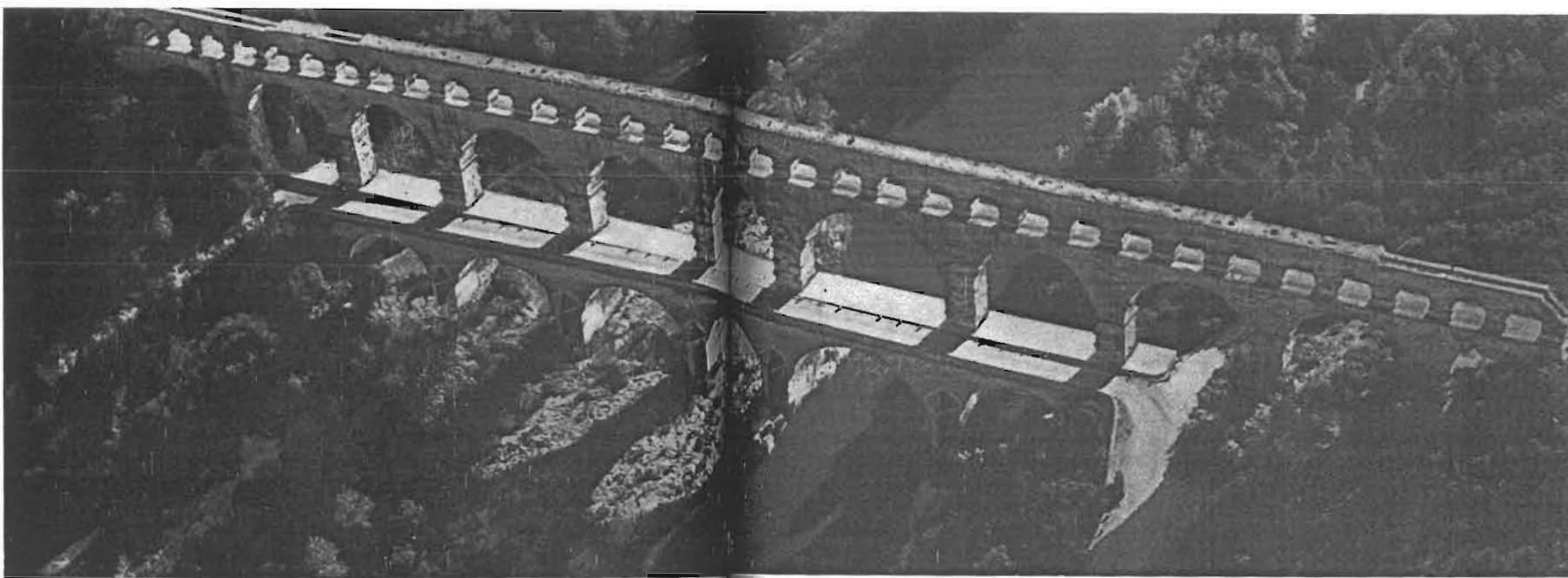


131 The mouth of the Cloaca Maxima where it empties into the Tiber. Although of Etruscan inspiration, it probably dates in part from the time of Augustus (27 BC-AD 14)

was certainly an Etruscan rather than a Greek technique before it became a Roman one *par excellence*, but does not concern us here. The other relates to hydraulic engineering, in which the Romans were also to become past-masters. The 'Etruscan' Cloaca Maxima (Ill. 131), which helped to drain the valleys amongst the hills of Rome, may be partly an Augustan rebuild; but recent exploration has added abundantly to the known examples of indubitably Etruscan rock-cut water-channels, above all of the *cuniculi* or underground conduits near Veii and elsewhere, hewn from a succession of vertical shafts to tap a water-bearing vein. This procedure was presumably derived from the identical *qanats* or *foggars* which have long been familiar in Persia and the adjacent regions: providing perhaps yet another nebulous link between Etruria and Asia. The Romans are not known to have manipulated their own conduits in this fashion, though straightforward rock-cut channels are abundant and have a famous Greek precedent in the great water-tunnel, 1,100 feet long, cut by Polycrates of Samos as an aqueduct in the latter part of the sixth century BC.

Here, however, we are concerned not with these subterranean works but with the monumental bridges whereby the Romans carried their urban drinking-water across wide and deep valleys, either by a direct gradient or by an elaborate system of siphons. The application of the principle that water finds its own level is described by Vitruvius (VIII.6). The best material illustrations are provided by the Marcian aqueduct (144 BC) which carried water to Rome, and that which brought water to Lyons across the valleys of the Garonne, Beaunant and Brevenne, where, instead of constructing vast horizontal bridges, the engineers channelled the water down and up the sides of the valleys, splitting it on the slopes into multiple pipes to reduce the pressure.<sup>54</sup> It has been calculated that more than 12,000 tons of lead were used in the process. Whatever the hydraulic system employed, these overland conduits include some of the most imposing structures left to us by antiquity, whether in the form of a procession of lofty, single arches such as at Metz or Tunis (Ill. 133), or in that of a double tier of arches as at Segovia<sup>2</sup> north of Madrid (Ill. 134), or in that of a triple arcade in perfect vertical proportion as in the greatest of all aqueducts, the Pont du Gard near Nîmes (Ill. 132), a monument which stirred Stendhal like 'sublime music'. Here we have the apotheosis of the arch, used with the functional good taste which was a Roman gift and elevated engineering to the level of an art. Neither the Greeks nor the Etruscans were precursors or competitors in this field.<sup>55</sup>

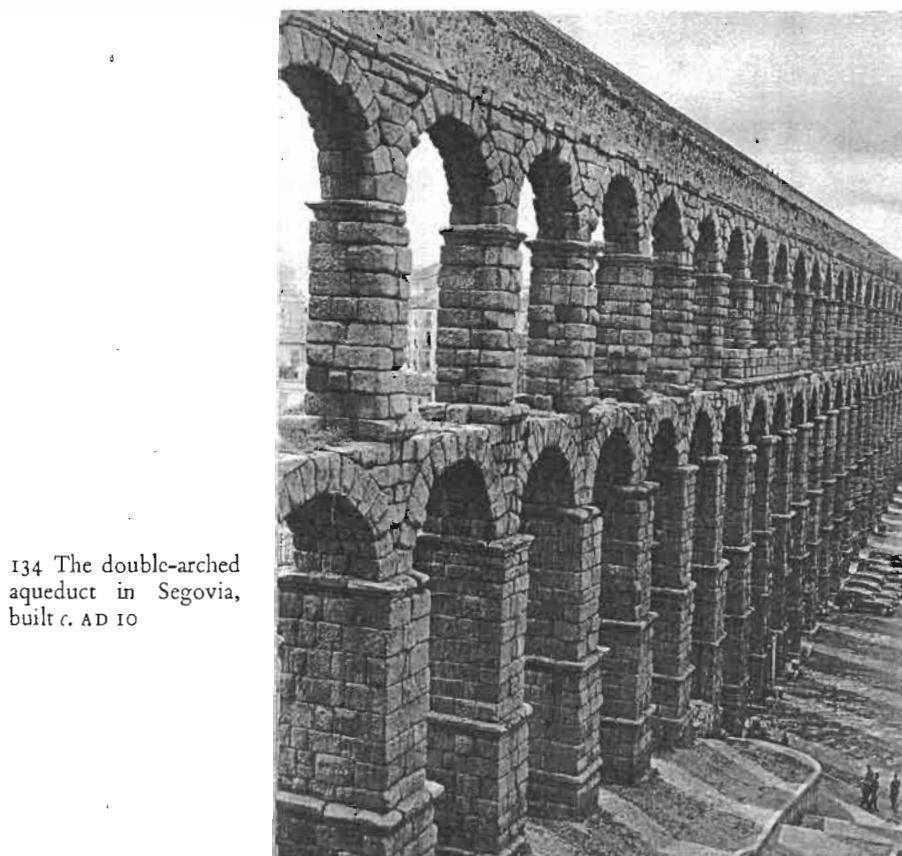
Bridges of the more pedestrian sort display, at their best, a less grandiose but comparable mastery of space. The ordinary Roman bridge consisted of masonry piers supporting a flat timber superstructure. There is some evidence that the Etruscans too used this method.<sup>56</sup> But again it is in the employment of the arch that the Roman bridge-builders transcended basic utility and became artists. Enough of the Milvian or Mulvian bridge at Rome (Ill. 135), built in 109 BC, has survived ancient and modern reconstruction to show the strength and grace of its original design. With its formidable cutwaters and its graded arches – the widest 60 feet in diameter – it displays the early maturity of Roman architectural engineering. It was constructed of unmortared tufa and travertine.



132 The magnificent three-tiered Pont du Gard near Nîmes (built c. AD 14). Water was carried above the topmost tier of arches, some 180 feet above the river



133 The lofty single arches of the aqueduct between Zaghouan and Carthage



134 The double-arched aqueduct in Segovia, built c. AD 10



135 The Milvian bridge in Rome with its semicircular arches resting on massive piers and protecting cut-waters. It was built of unmortared tufa and travertine in 109 BC

Less extensively restored is the magnificent granite bridge built across the Tagus at Alcantara (*Ill. 136*), near the border of Spain and Portugal, on the orders of Trajan in AD 106. The two central arches are approximately 90 feet in diameter, and the lateral arches are graded into the sides of the ravine. Across the centre of the viaduct is an arch in honour of Trajan, and at one end is a small temple which may, as an unfounded guess would have it, be the tomb of the bridge's builder, one Gaius Julius Lacer. Let it suffice to say that the bridge itself is a worthy memorial to an honest and forthright imagination.

From the exploitation of the arch in a functional capacity it was but a step for a society so demonstrative and wealthy as the Roman to elaborate it in monumental isolation. 'Triumphal arches' became



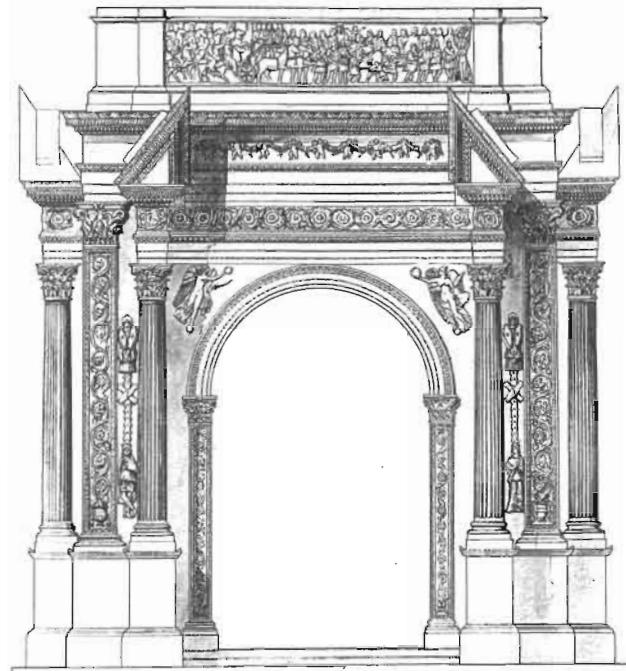
136 The bridge across the Tagus at Alcantara, built of granite in AD 106. The central arches are almost 90 feet in diameter

the symbol of Empire. Travelled Emperors such as Trajan or Hadrian or the Severi left a trail of them across the Roman world. In Rome alone more than fifty are recorded; the Arc de Triomphe and the Marble Arch of London have indeed a teeming ancestry. Time and again their ostentatious inutility has commended these costly ornaments, these towering advertisements, to the *Herrenvolk* mind. To dismiss them, however, in the words of one writer on Roman architecture as 'another individual and unattractive Roman invention' is to underrate their value as an eloquent and powerful expression of period-mentality. With their strongly lettered, severely beautiful dedications, they are a facet of the personality-cult which lies at the heart of the Imperial idea. They have their place in history, and a place by no means without distinction.



137 Triple arch at Timgad, built in the second century AD to replace the more functional west gate of the colony

They began indeed before the Imperial idea had taken shape, though it was actively in the making. The first recorded commemorative arches are of the second century BC; beginning in 196, when L. Stertinus devoted his Spanish proceeds, as Livy tells us (xxxiii.27), to the setting up of two arches in the Forum Boarium and another in the Circus Maximus. The conception was evidently not a completely new one; the arch in the Circus seems to have been erected on the *spina* or central barrier and so from the outset to have made no pretence to the utilitarian or semi-utilitarian purpose which might be expected in the earliest phase. Three other arches are known from this formative second century – the century, be it recalled, when Carthage and Corinth fell to Rome and new notions of one kind and another (including the revolutionary use of brick and concrete vaults and domes) were germinating in men's minds. But it was not until the principate of Augustus and his immediate successors that the



138 Reconstruction of the four-way triumphal Arch of Septimius Severus at Leptis Magna. It was built c. AD 200 and stood at the principal cross-roads

triumphal arch became an established convention and a characteristic feature of the Imperial scene. As late as the third quarter of the first century AD the elder Pliny, writing as an historian, could still describe it as a 'new-fangled invention' (*N.H.*, XXXIV.27).

The non-functional character of these arches may be further stressed, however apt their positioning may on occasion have been. At Timgad in Algeria in an era of peace an open triple arch (*Ill. 137*), probably of Antonine date, replaced the functional west gate of the Trajanic colony. At Antalya in southern Turkey another open triple arch in honour of Hadrian had already replaced the Hellenistic east gate of the town. At Verulamium in Britain a triumphal arch seems to have supplanted each of the two main gates of the Flavian town on the line of the Watling Street, perhaps even before the urban area was formally enlarged within new defences in the latter part of the second century. In these instances a certain amount of traffic must or

can have passed through the arches, though at least at the more southerly arch of Verulamium there was ample metalled space around the structure. Elsewhere (Aosta, Aquino, Canosa, Jerash are examples) an arch bestrides the approach-road at some distance outside the town-walls and may there have coincided with the limit of the *pomerium* or clear space without the defences. In such cases traffic no doubt normally passed beneath the arch. Processions, moreover, such as that depicted on the Arch of Titus in the Roman forum (Ill. 139), undoubtedly filed through certain of the arches on their statutory routes. But often enough all major traffic was physically barred. The Arches of Tiberius and Septimius Severus, again in the Roman forum, were shielded by steps. So too was the four-way Arch of Septimius Severus which stands as an island at the principal cross-roads of Lepcis Magna in Tripolitania (Ill. 138); street traffic circumvented it.<sup>57</sup> At Ancona an arch rises proudly upon the end of the mole and commands the eye from land and sea but is and was no more useful than the symbolical 'Gateway of India' on the quay at Bombay. Examples need not be multiplied. The triumphal arch was in essence merely a decorative adjunct to some particularly frequented spot: *celeberrimo loco*, as the inscription from an Augustan arch formerly at Pisa expresses it.<sup>58</sup>

A majority of the known triumphal arches, particularly in the western half of the Empire, had a single opening (Ill. 139). This was flanked by attached or (from the second century AD) detached columns and by sculptured panels, and was surmounted by an attic storey which bore the inscription in cut or bronze letters and carried free-standing figures, commonly of gilded bronze and including a chariot drawn by horses or occasionally by elephants. Early in the Principate a three-arched type (Ill. 140) began to appear, at first rarely; as in the Augustan arch of 18 BC in the Roman forum, or the untidy Arch of Tiberius (if that be its date) at Orange. Thereby a longer attic storey was ensured, capable of carrying more extensive sculpture. In the eastern half of the Empire, where spacious propylaea were an established tradition, the triple arch was the more popular of the two forms. An intermediary two-arched variety was sometimes used in the west, but only half a dozen examples are recorded.



139 The Arch of Titus in Rome, built in c. AD 81 with a single opening. The attic storey with its carved dedication was originally surmounted by a bronze quadriga



140 The triple Arch of Constantine in Rome (AD 312-15) which includes much earlier sculpture among its decorative reliefs

In one way and another these strange monuments are at the same time typical and a-typical of their place and time. If one were to seek a single emblem for the combined majesty and ostentation of a successful Rome, those monstrous toys the triumphal arches were difficult to deny. It is a thought that a great people, who could drain marshes and make roads that are still our roads, build great aqueducts and shape laws that are written into our modern civilization, and after travail give a great religion and ethical code to the world, could also pause to express and impose their self-gratification in idle contrivances of such grand but nonsensical irrelevance; contrivances which nevertheless continued to impress themselves recurrently upon medieval and Renaissance pattern. The thought adds interest and piquancy to any attempted understanding of the Roman mind.

### Aspects of Sculpture and Painting

Roman art, interpreted as sculpture and painting, must here be treated very selectively and summarily,<sup>59</sup> but a glance at certain aspects of it may suffice to hint at something of its quality in its own right and of its contribution to aesthetic evolution. The course of evolution, whether physical or intellectual, never did run straight and smooth; in the process the failures and hesitations and unsure deviations of Roman art were admittedly as signal (and often as signally interesting) as its successes. But its successes were remarkable and important.

Let it be stressed at the outset that the phrase 'Roman art' is essentially an abstraction and a misnomer. It is a clumsy symbol for the composite effort of minds ranging through a wide variety of environments, from the Atlantic mists to the hard sunlight of Asia and through a changing complex of ideas, from the comfortable fruition of Hellenism to the uneasy aspiration of the Middle Ages. It is really valid only in so far as it represents an epoch and an encompassing economy which assured to that epoch the needed means and opportunity. It has nothing like the simple connotation of the term 'Greek art', which is integrated alike by a narrower geography, a considerable measure of cultural uniformity, and the more restricted aesthetic concepts proper to an earlier phase. In brief, Roman art is the various product of a group of partially creative centres, including Alexandria, Antioch, Athens and, not least, Rome itself, which until the end of the third century served also as universal focus and reflector.

I propose first to select for illustration three of the principal achievements of Roman art in this qualified sense: the development of portraiture, the development of narrative, and the development of landscape. Then something must be said of the Roman patron as a collector of ancient or contemporary works of art and craftsmanship;