

S. ANTONIO, PADUA. FROM S.E.

EASTERN INFLUENCES ON THE ARCHITECTURE OF THE WEST.

By IAN C. HANNAH, F.S.A.¹

The Christian architecture of Europe, from beginnings exceedingly varied, eventually crystallised into two main forms, Gothic in the west, Byzantine in the east,—the Adriatic being the dividing line.

Neither term is very satisfactory, but both are far too well established to be reconsidered at the present time. As a rough generalisation it may be stated that Gothic was the chosen style of the western, Byzantine of the eastern church. Broadly speaking a line from St. Petersburg (which antiquaries will hesitate to call Leningrad) to Trieste divides the two spheres. Finland and the three Baltic states, Esthonia, Latvia and Lithuania, belong to the west. All the Slavic peoples except the Bohemians and the Poles pertain to the east, into whose territory projects Hungary to form a far flung outpost of the west.

Gothic spread from its original centre northward beyond the Arctic circle and southward to the Mediterranean sea ; westward to the waves of the Atlantic, eastward to the banks of the Vistula. There were, however, parts of the west, particularly in Italy, where Gothic never succeeded in ousting Romanesque. It was nevertheless carried towards the east, far beyond its proper limits, by Crusaders, Italian merchants and other adventurers, to be profoundly modified upon the new soil.

Byzantine work in one form or another spread through the European provinces of the eastern church. It, also, underwent remarkable and interesting transformations in the different countries that adopted it. In the Russias, where it became [most largely modified, it was so mixed

¹ Read (in part) before the Institute, March 2nd. 1927. The pen drawings are by Edith Brand Hannah; the water-colour view of St. Lars, Visby, was made by

the late Dr. Codrington, Preby. of Chichester, in August, 1858. Other illustrations are from my own photographs.

with strange Tatar forms as to lose much of its original character.

As to the parentage of Christian art an exceedingly interesting controversy has for some time been proceeding, the extreme points of view being represented by Rivoira, who wished to derive everything from Italy and Rome, and Strzygowski, who finds its origins very largely in lands further north and further east than the territory in which the Roman empire was ever permanently established.

It is clear that Christianity, like Buddhism in earlier and Islam in later days, while supplying forms that were entirely its own, and therefore to some extent everywhere uniform, derived its architecture in different countries very largely from local influences.

This is extremely well illustrated in China to which all three faiths made their way within a few centuries of their origins. Buddhist and Moslem architecture in that country can still be studied, purely Chinese in general character, but in the case of Islam modified by various Saracenic details, and in that of Buddhism preserving sundry Indian forms.¹ That the first Christian missionaries in China pursued exactly the same wise policy is shown by the famous Nestorian Tablet (A.D. 781) where certain Christian buildings are described: 'The corridors and walls were nobly ornamented and beautifully decorated; roofs and flying eaves with coloured tiles appeared like the five-coloured pheasant on the wing.' This exactly represents the features of elaborate Chinese architecture. The passage is important as showing that even at a time when Christian architecture was well established at the centre of their organisation, the Nestorians, wiser in this respect than modern missionaries, made no attempt to introduce it into their distant provinces.

The Christian church itself, originating among the Jews, could hardly have received an art of its own from a people so slightly interested in anything of the kind. As the faith spread, however, it came under influences of many different kinds. Hellenism is very evident in the New

¹ This may be seen very clearly in the former case at the great mosque of Chinanfu (Shantung), and in the latter at the Yellow Temple, near Peking, built by the emperor

Ch'ien Lung, as late as the eighteenth century. Both of these buildings I visited in 1898. I hope they have not suffered in the wars that have since been waged.

Testament itself, particularly in the writings of St. Paul. Greek thought and Greek philosophy were important elements in defining the faith and drawing up the creeds. Through Orientalism came a priceless heirloom of mysticism as well as heretical Gnostic influences, in the process of expelling which the church was profoundly modified itself: from the same quarter came in the monastic system that was enormously to affect the whole history of the faith. Rome contributed little more than a great imperial tradition and with it that power of organisation which did so much to enable Christianity to triumph over its early foes.

Thus that Christianity should borrow artistic forms from many different sides is exactly what we might expect. It would be amazing if from Rome and Rome alone sprang the whole tradition of Christian art. Incidentally every important element in the architecture of Rome herself was borrowed from some other race.

It is far from easy exactly to describe the really essential features of Byzantine architecture, or to define precisely what it is that distinguishes it from all other styles, although its representative buildings are sufficiently individual and distinctive. Its very characteristic ornament began, especially in the matter of leaf-capitals, by being more natural and realistic than the Classic orders of Rome, but (as is apt to be the case in the east) it soon developed the most rigid conventions of its own.

The principal feature of typical Byzantine work is unquestionably the open central space, almost invariably covered by a dome on pendentives. This latter feature is a method of building of hoary antiquity in the east. Mr. C. Leonard Woolley writes in connection with a royal tomb at Ur (Mukayyar): 'Now we know that in the fourth millennium (B.C.) corbel vaulting, the true arch and the dome were all familiar to the Sumerian builder, and were carried out both in brick and in stone; even the pendentive was employed in domical construction. These architectural forms were late in coming to the Western world, but in the East they are found in the earliest buildings of which we have any knowledge.'¹

¹ *The Times*, February 23rd, 1928. The name of the king to whom the splendid tomb belonged is doubtful. In all probability he

was the husband of a queen named Shub-ad, whose slightly later tomb is close by. The excavations were undertaken jointly by the

Strzygowski's view of the origin of Byzantine architecture may best be given in his own words. 'As early as the fourth century Constantine had of his own initiative produced a church architecture unique in the Mediterranean littoral, and intelligible rather as a continuation of the earlier Hellenistic-Roman vaulted style with important additions from Armenia and Mesopotamia than as a development of the modest and severely practical buildings erected by the communities of the time. Constantine and his successors rescued something of the great Hellenistic and Roman vaulted style for the benefit of the growing Christian movement.'¹

(He is concerned mainly with the emperor's buildings at Jerusalem and Constantinople and particularly with the octagon at Antioch² in which he finds the prototype of San Vitale at Ravenna (p. 51). These structures have unfortunately perished; at Bethlehem the famous church of the Nativity, which Socrates³ declares to be 'not at all inferior' to the buildings at Jerusalem, still exists, a timber roofed basilica with very short apsidal transepts and quire.)

'St. Sophia, as we see it, results from the demand of the Church for a long nave even in a building with only a single dome; by the introduction of galleries into an Armenian plan, it meets the need felt alike by Church and Court for a hall of assembly on an imperial scale. The Armenian plan is impressive, and the combination of Iranian decoration and Greek organic structure notably contributes to the almost overpowering effect of the interior.

'Justinian's other churches, both those which survive and those known by the descriptions of Procopius, all show a like exuberance of cosmopolitan features.'⁴

The essential part of Strzygowski's views about Byzantine work is that in Iran and Armenia there had been evolved as early as the fourth century a form of church whose central feature was the dome and that it was thence,

British Museum and the University of Pennsylvania. It would be difficult to exaggerate their importance.

¹ *Origin of Christian Church Art*, by Josef Strzygowski, translated by O. M. Dalton and H. J. Braunholtz, Clarendon Press, 1923, p. 42.

² This church, Baldwin Brown (*From Schola to Cathedral*, Edinburgh, Douglas, 1886) takes to have been the first Christian building with a dome.

³ *Cb. Hist.*, I, xvii.

⁴ Strzygowski, *ibid.* p. 46.

entirely apart from any Roman influence, that the Byzantine style derived its most important structural detail. This theory seems to have much in its favour. There is no real evidence that Rome ever placed a dome on pendentives at all (p. 45). Armenia certainly contains many examples to this day, though all appear to be later in date than St. Sophia. It has always seemed to require explanation how without any previous efforts a huge dome could have been built on pendentives on the splendid scale of the Constantinopolitan cathedral, and it is remarkable that when after the passing of nearly a full millennium St. Sophia at last found imitators, it was to Armenian architects that the Turks turned to erect their superb mosques.¹

The difference between the Byzantine and the Gothic styles is in a sense a phase of that between the cultures of the east and the west. Nearly at once Byzantine reached its very highest development and splendour in the great church of Santa (or Hagia) Sophia, erected by Justinian in his capital about the middle of the sixth century. It stands to-day perhaps on the whole the noblest temple that man ever erected to the glory of his creator. Despite several notable revivals the Byzantine style has evolved but little in all the centuries since, certainly no later Byzantine fabric approaches St. Sophia in glory, while Gothic continued developing new forms from the time of its emergence from Romanesque during the twelfth century till it went into eclipse during the sixteenth, while it is at least arguable that just before the renaissance it had reached its noblest heights.² Nothing comparable with this development is to be studied in the splendid series of Byzantine churches that

¹ While quite inclined to feel that Strzygowski has in a general way proved his thesis as to the origins of Christian architecture in the east, I am entirely unable to follow him when he bids us look to the timber churches of Norway for the cradle of the Gothic style. In the first place at Sens, Canterbury, and perhaps even more convincingly at St. Cross, Winchester, besides of course many other examples, we see Gothic emerging so naturally and indeed inevitably from Romanesque that no other explanation seems wanted. Secondly Scandinavian Gothic has every appearance of being rather on the periphery than at the fountain of the style. The three chief churches are obviously modelled upon

originals from more southern lands, Trondhjem from England, Upsala from France, Roskilde from Germany. Thirdly, the stavekirkes themselves have every appearance of having been suggested by churches of stone, though in some details they resemble the timber buildings of China. They hardly seem to display the real spirit of Gothic at all. Lastly, the Norse fabrics appear not to be sufficiently early in date possibly to have exercised any appreciable influence on the development of Gothic, and that similar ones existed much earlier is a mere supposition.

² This was the view of my old friend Somers-Clarke.

are the architectural glory of the lands between the Adriatic and the Black Sea.

Turning now to the west, Prof. G. Baldwin Brown has pointed out¹ that the dome is as much a feature of the Roman style as of the architecture of the east. This is extremely important, but the earliest Roman dome (at least of any monumental importance) is that of the Pantheon. It was thus in the reign of Hadrian that the great style which had borrowed the round arch from the Etruscans, the orders and the entablature from the Greeks, was at length completed by adopting the dome from the

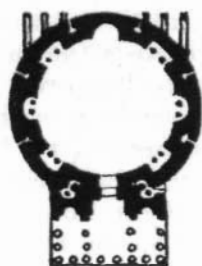


FIG. 2.
PANTHEON.

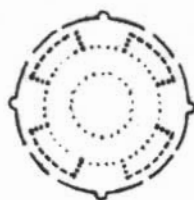


FIG. 3.
S. STEPHANO ROTONDO.

east,—for few will contend that against the trend of their whole history the Romans independently invented the dome. The very essence of the Roman mind was in its capacity rather to utilise the inventions of others than to originate new features for itself.

The most likely origin of the Roman dome would seem to be that the great travelling emperor Hadrian, always keenly on the look out for new ideas, was impressed by domes that he saw in the east and reproduced their form in the Pantheon. (That he was the builder of that massive structure was conclusively shown by Chedanne.) This would account for the otherwise inexplicable feature of the *oculus*, or large round opening at the apex, admirably suited to the climate of Mesopotamia, absurd in that of Italy. Strictly it is hardly a true dome at all.

¹ *From School to Cathedral*, Edinburgh, Douglas, 1886.

In the British Museum is a remarkable fabric of baked clay about three feet in diameter, consisting of a battering round wall with moulding along the top, surmounted by a low dome with oculus. Its purpose was to cover certain clay bowls containing parts of sacrifices and to be buried in the foundations of a large building raised above. It belongs to the first dynasty of Ur, c. 3100 B.C. and it might serve as a rough model of the Pantheon. Another proof that domes of the same general kind with central round openings existed in ancient Mesopotamia is provided by a Nineveh bas-relief which shows, behind a representation of the tackle for moving winged bulls, a little group of precisely such domes, apparently covering square buildings.¹

The huge dome of the Pantheon, some 142 feet in diameter, required in its erection vast resources, but little ingenuity. Practically a solid mass of concrete² it presses with immense weight, but exerts but little thrust, upon the massive rotunda upon which it rests with no need for pendentive, squinch or any such device.

No real evidence has ever been produced that on any considerable or important scale the Romans ever placed a dome over a square space (though they appear on one occasion [and doubtless other examples existed] to have made a little monolithic model of something of the kind, see p. 62). One of the outbuildings of the baths of Caracalla (b. 212-216 A.D.) is octagonal, with apses in four sides and the roof was a dome, the octagon being converted into a circle by a slight bending of the walls, the whole depending for stability on the excellence of its cement. This is a very early use of pendentives in the west, but it seems unlikely that its builders were conscious of any new principle of construction. No real problem presented itself. Even less convincing as an example of pendentives is the Nymphaeum at Rome, usually called the temple of Minerva Medica, attributed to Gallienus (263-268). Here the structure is a decagon and still less ingenuity was required to convert the summit into a circle in order to receive the dome, which was buttressed by means of projecting apses. This form of construction was afterwards

¹ Reproduced on plate 17, Layard's *Monuments of Nineveh*, 2nd ser., Murray, 1853.

² Curiously reinforced by brick arches.

used in Armenian churches, a good example being one at Mastara erected about A.D. 650.¹

A glance at the ground plans strikingly illustrates the far greater massiveness of imperial Roman than of Christian buildings. It can hardly be too strongly emphasised that the Roman relied rather on massive forms and excellent cement than on any ingenious method of buttressing. A dome on pendentives covering a large rectangular space would not have been at all likely to appeal to him.

A fabric of design more or less similar to that of the Nymphaeum or garden house of Gallienus, and one of altogether exceptional interest in connexion with the architecture of the early church is S. Lorenzo at Milan. It stands among and joins on to important Roman buildings of pre-Christian character (possibly baths) and just beyond the site of its atrium stands part of their street front;—a Corinthian colonnade which is the only important monument of ancient Mediolanum. The church itself, nevertheless, appears to be a purely Christian fabric of the late fourth century,² and so very little later than the buildings with which it is associated. Its plan is very intricate. A square space is surrounded by an aisle but all four walls of each are bent outward in the centre to form shallow apses, the inner ones consisting of colonnades opening into the aisle and a stone gallery above it. These inner apses open to the central space by four great arches which rise above the galleries to the level of the cupola. The corner spaces between the four great arches are crossed by architraves on several levels, the highest projecting in such a way as to create a regular octagon with equal sides above the great arches and upon this, but over a high drum, is placed the dome. The corners of the inner square are marked by additional columns which mark off the limits of four little corner squares upon which towers were raised which help to steady the building.

The apses serve to buttress the dome and this is one of the grounds on which Strzygowski claims Armenian

¹ Illustrated by Strzygowski, *Origin of Christian Church Art*, p. 61.

² Hubsch, Baldwin Brown and other high

authorities give this date, but Kugler contended that it is a Christian reconstruction of a Roman hall. Its lightness of construction seems to me fatal to the latter view.

influences in the building.¹ This appears purely unnecessary, for though the fabric contains many features that are undoubtedly to be found in eastern work, the general character is quite different and there do not appear to be any methods of construction that are not perfectly natural to the race that erected the Minerva Medica. A strange feature of the building is the relative lightness of its walls and piers. The very extensive reparations carried out during the time of the renaissance make its original form somewhat obscure.

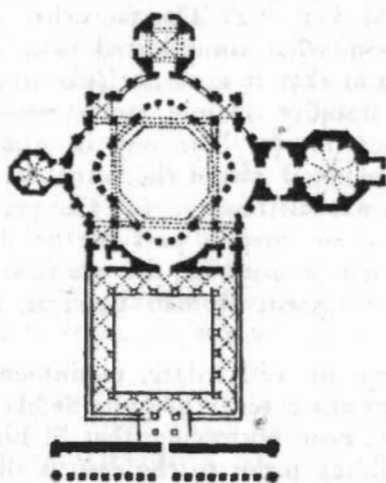


FIG. 4. S. LORENZO, MILAN.
(Chapel of S. Aquilinus to the right).

It is not, of course, difficult to find connexions between Armenia and Italy in early Christian times. S. Miniato the proto-martyr of Florence was (at least traditionally) the son of an Armenian king who suffered in the Decian persecution. All known contacts must be carefully studied and given due importance, but it must always be recollected that while the transference of a whole legion or the presence somewhere of a large number of merchants from distant quarters need not have introduced the most un-

¹ *Op. cit.* p. 84. In all doubtful (and sure that origins are to be traced to trans-ome other) cases he always seems to feel Euphratean lands.

important architectural detail, the unrecorded travels of some unknown architect or mason might perhaps from slight hints, have carried a feature of great importance from any part of the great empire to any other.

While it seems to possess little or nothing of the true Byzantine spirit, S. Lorenzo certainly introduces features that afterwards became prominent characteristics of Byzantine work. Among these are (1) internal buttressing apses (represented on the plan merely by arcades) such as figure so prominently in the design of St. Sophia, as well as external supporting apses such as had earlier been employed at Minerva Medica. (2) The fact that the structure is based upon somewhat complicated calculations of thrust and balance and that it does not (like imperial buildings) depend for stability mainly upon massive forms and excellent concrete. (3) The way in which all points of support are included within the actual fabric without any need for external buttressing. (4) The presence of massive stone galleries, an integral part of the design, but such features (though unusual in the west) are to be found in two of the ancient Roman basilicas, S. Lorenzo and S. Agnes.

Considering its early date, monumental nature and purely western character, it is quite as likely, in the event that there has been borrowing, that S. Lorenzo may have suggested building forms to the east as that its architects thence derived the essentials of their design.

S. Lorenzo contains no Byzantine detail (though it may have done before the restoration by Martino Bassi after the fall of the old dome in 1573); in the adjoining chapel of S. Aquilinus, a much more massively built octagonal chamber with apses opening from four of its sides, there are some very interesting mosaics of Italian-Byzantine character,—the most beautiful displaying the shepherds, with a very striking border band formed of interlacing circles. This chapel seems to be undoubtedly an imperial building adapted to Christian purposes.

Neither this church nor any other early example in the west displays any approach to what must be considered the really distinguishing feature of the Byzantine style,—a bold use of pendentives on a large scale.

During the fifth century, in the very latest hours of the empire of the west, there was erected in Rome the most remarkable church of S. Stephano Rotondo, consecrated in A.D. 468. In the centre was originally a circular compluvium surrounded by a colonnade of Ionic columns with architraves. Outside this is a continuous round aisle whose outer boundary is an arcade of Ionic columns sustaining arches of heights that vary in different sections. The space beyond consists of four limbs, each having a little apse, which form the only projections from the plain external circular wall. Between these limbs are four vestibules, each divided into an outer and inner portion by a third line of piers, which is not continued across the four limbs. At a later time the central space was also covered, a rather clumsy arcade being built straight across it¹ (plan p. 44).

As the roofs must always have been of timber and the construction is singularly light, the building of this church presented no special problem and there is no analogy whatever to Byzantine forms. It must be regarded as just a freak design which was not generally admired. It certainly did not solve any apparent difficulty and a church less convenient for western (or any other) worship would be difficult to conceive.

The chief interest of these very striking and remarkable churches lies in the proof which they afford that the west, purely with its own resources, was capable of at any rate some approximation to those unusual and complicated ground plans of which the east was so fond. The reason why such types never were developed,—much less became popular,—on the Roman side of the Adriatic must be found in the fundamental psychology of the western mind.

The east with its venerable background of Hellenism and Orientalism wished to import something of its philosophy and its mystery into the very fabrics of its churches. Buildings whose arrangements were obvious at a glance seemed unsuited to a civilisation with so glorious a past. The structures in which its services were performed must have some analogy to the philosophic orthodoxy of its creeds. The eastern church loved to make the form of its temples a complicated mathematical problem, requiring

¹ An interesting description of the church will be found in *Handbuch der Architektur* : *Altchristliche und Byzantinische Baukunst*, by August Essenwein, Darmstadt, 1886.

scientific training to design, the most accurate mensuration to erect. Its meaning must not be obvious on a casual inspection, but properly to be understood only as the reward of detailed study. In the intricacy and ingenuity of his plans the eastern Christian may be said to have combined the subtilty of the Greek mind and the oriental fondness for mysticism. Practical convenience, the needs of a congregation, considerations of economy in labour and materials, were altogether secondary objects.

All this meant nothing to the far more practical mind of the west. Its background was the imperialism of Rome, its boast the catholicity of the church. A vast space, entered by wide open doors, inviting the multitudes to enter and participate in the worship was what really appealed to western Christendom. For any such purpose these round or octagonal or otherwise rather eccentric plans, complicated and elaborate as they were apt to become, demanding the maximum of cost, providing the minimum of accommodation, were unsuited in every way. The basilica provided precisely what was required.¹ It was simple and easy to build; mistakes in measurements,—so fatal in the intricate designs of the east,—could readily be covered up; the cost was relatively low, the accommodation proportionately large.

Thus the west never got very far away from the convenient basilican forms. Later on when under the influence of monasticism it was often desired (in plain English) to waste as far as possible the huge space that a great church provided no recourse was had to the east, although oriental solutions of similar problems might have had much to recommend them.

By means of numerous screens and ornate sanctuary arrangements a church that ordinarily seated might have accommodated two or three thousands was frequently so fitted that a handful of monks in their canopied stalls should not seem lost in the huge space enclosed. Westminster Abbey, which retains its Benedictine arrangements almost untouched, is a very excellent example. Hardly ever were the monks of an important abbey content with a church

¹ The composite origin of the basilica is admirably discussed by Prof. Baldwin Brown in his *From Schola to Cathedral*.

This will
not do.

that was merely suited to their needs (p. 85) And at York, St. David's and many other great secular churches, screens of monastic origin, however inconvenient, may still be seen. NO.

An eastern community of wealth and culture sought to display its refinement in the ingenious planning quite as much as in the sumptuous ornaments of its church. A western one could hardly ever resist the temptation of trying to impress the world by a church of the largest possible size, capable of almost indefinite enrichment by the gifts of the wealthy. Sumptuous monuments are almost a necessity to a great basilican or Gothic church; a Byzantine one can hardly use them at all. Thus there were reasons of a very fundamental kind why Byzantine planning could make but fitful and uncertain progress in the west. With ornament it was a different thing,—but with that this paper is only slightly concerned. While Byzantine structural forms are mainly to be seen in Italy and southern France, Byzantine details found their way into almost every section of western Europe, except in the very far north.¹

It was to be expected that the reconquest of the west by the forces of the Byzantine empire under Justinian should lead to the spread of eastern forms within the recovered provinces. It is noteworthy, however, that the first definitely and unquestionably Byzantine church to be erected west of the Adriatic was begun before the restoration of imperial power. The very important church of San Vitale at Ravenna was commenced by bishop Ecclesius (524-534), while the city was only occupied by Justinian in A.D. 539. This building is Byzantine both in its domed plan, in its large stone galleries forming an integral part of the design, in carved detail, particularly the inverted pyramid form of capitals with dossierets above, as also in the very characteristic feature of having its points of support within the area and so requiring neither very thick walls nor widely projecting buttresses. It departs from Byzantine traditions in possessing a timber roof above the dome. The beautiful details of Byzantine origin both in the form of its carved ornament and its mosaics became for centuries extremely popular in Italy and particularly

¹ This is admirably discussed in O. M. Dalton's *Byzantine Art and Archaeology*, Clarendon Press, 1911 (see p. 242 of this volume).

at Rome. This fact, however, did not lead to any appreciable adoption of Byzantine planning, for the basilican form was too firmly established to be abandoned. In Italy in fact San Vitale appears to have had no important imitators.¹

For this we must look to Germany, where at Aachen the great chapel of Charles the great is obviously modelled on the Ravenna church. The German fabric is a massive and stately octagon (like an eastern *martyrion*) surrounded

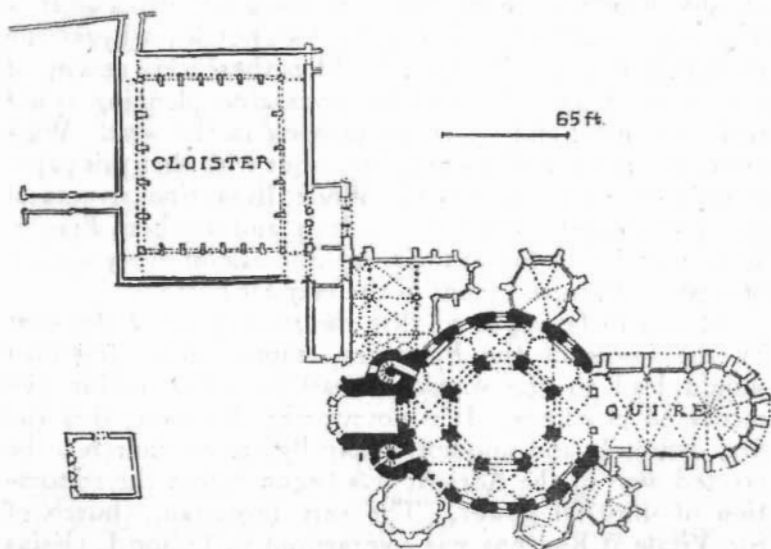


FIG. 5. AACHEN. THE CHAPEL BUILT BY CHARLES IN BLACK.

by a 16-sided aisle and it has the essentially Byzantine features of stone galleries and internal support for the vaults,—though little of the real spirit of the style. Both upper and lower octagon arches are of extreme simplicity and of course round. The upper ones, opening into the gallery are by far the loftier and each is filled in with four shafts on two levels, triple arches (which support nothing) resting on the lower ones while the upper shafts extend rather feebly to the soffits of the great arches. The arrange-

¹ Though small Byzantine churches continued to be erected in Italy until the empire lost its last territory in the peninsula.

ment is very inferior to that of San Vitale where there are single great arches and the shafts with their subsidiary ones are bent round little apses and really support the galleries.

The details of the German church are Romanesque rather than Byzantine¹ but their special character is not material as they were—at least in part—brought from Italy.² Many of them were carried off by the French and brought back to Germany in 1871, so that it is impossible to say exactly how they were originally employed. The existing arrangement certainly does not look right.

The masonry is curious, a sort of compromise between ashlar and rubble, very well built. The aisle vault—beneath the stone gallery—has no ribs and is composed of very thin little stones. At the west end is a heavy tunnel-vaulted narthex (over which is raised a modern tower), on either side of which is a circular stair to the galleries. The building has something of old Roman massiveness.

The middle ages were guilty of no more incongruous work than the light and airy quire and chapels which were added during the fourteenth and fifteenth centuries. Beautiful in themselves, their combination with the older work is almost grotesque, a striking contrast with the admirable harmony of Romanesque and later Gothic work to be seen in so many English cathedrals.

The Aachen church was not without influence on later buildings in Germany, such as Ottmarsheim,³ but very little of true Byzantine spirit was preserved.

At an early date and through channels that are still but imperfectly known, influences from eastern Europe had

¹ The treasury contains, however, many works of art from the east. Strzygowski (*Dom zu Aachen*) suggests that the remarkable panels on the pulpit came from Egypt. Charles the great had some intercourse with the eastern empire: Otto II married Theophano, a Byzantine princess.

² Pope Hadrian I wrote to Charles: 'We have received your bright and honey-sweet letters brought us by Duke Arwin. In these you expressed your desire that we should grant you the mosaics and marbles of the palace in the city of Ravenna, as well as other specimens to be found both on the pavement and on the walls (presumably of the churches). We willingly grant your request, because by your royal struggles, the church of your patron, St. Peter, daily

enjoys many benefits for which great will be your reward in heaven,' *Codex Carolinus*, Letter 98. Thomas Hodgkin's translation. 'Religionem Christianam qua ab infantia fuerat inbutus, sanctissime et cum summa pietate coluit, ac propter hoc plurimae pulchritudinis basilicam Aquisgrani extruxit auroque et argento et luminaribus atque ex aere solido cancellis et innuis adornavit. Ad cuius structuram cum columnis et marmora aliunde habere non posset, Roma atque Ravenna devehenda curavit.' Einhard's *Vita Karoli*, cap. xxvi.

³ Robert of Lorraine, bishop of Hereford, 1079-1095, is said to have built a church in imitation of that at Aachen, but there is nothing to show it in what survives of his work.

*Since church in
probab. that
which still
survives in the
Garden of the palace
Not the Cathedral*

reached the far west and they are clearly to be traced in Ireland,¹ but in that country there is no trace of Byzantine planning and little indeed of detail, for M. Solomon Reinach's effort to show that the common interlacing work is of eastern origin cannot possibly now be maintained.² It is hardly possible in very many cases to draw an absolutely sharp line of division between Romanesque and Byzantine detail.

It is very clear nevertheless that though in Italy the Byzantine plan of St. Vitale at Ravenna did not found a tradition, Byzantine detail, as we have seen, became exceedingly usual both at Ravenna and at Rome. Charles Diehl puts this very strongly: 'Depuis la fin du vi^e siècle jusqu'au milieu du ix^e l'art Chrétien en Italie n'est qu'un chapitre de l'histoire de l'art byzantin, et il faut attendre jusqu'à la fin du xi^e siècle pour trouver dans l'église souterraine de Saint-Clement à Rome des fresques, fort intéressantes, où le peintre essaie de s'affranchir de la tyrannie byzantine.'³

This must be taken to refer mainly to Byzantine detail, and this in one form and another is to be found in the most unexpected places far beyond the limits of Italy. The rude Ionic volutes and other features of the capitals of the chancel arch in the very interesting little eleventh-century

¹ The following resemblances are far too striking to be accidental.

(1) The custom common to Ireland and the east of building many small chapels instead of a single large church.

(2) The fact that Cogitosus' ninth century *Life of St. Bridget* describes the church at Kildare as purely oriental in character with eikonostasis and other screens to separate men and women, as may be seen in Coptic churches to-day.

(3) The oriental belief in reincarnation, constantly met with in Irish folk-lore.

(4) The practice of fasting upon a debtor, still common in China, is frequently mentioned in the old records of Ireland.

(5) The use of wooden altars both in Ireland and the east.

(6) Such eastern details as the flabellum in the *Book of Kells* portrait of St. Matthew and in fact Celtic MSS. display the influence of Byzantium both in pigments and other details. St. Cummian in the early seventh century shows knowledge of the writings of St. Pachomius of Egypt.

(7) The Irish Easter was clearly of oriental origin, though not the Orthodox one.

Attention must also be paid to the ancient Chinese porcelain seals dug up in eastern Ireland.

² Lasteyrie appears to be perfectly justified in his observation: 'Mais l'entrelac pris en lui-même ne prouve rien, car c'est un genre d'ornement qui n'est particulier à aucun pays et à aucune civilisation; on en trouve des exemples chez les peuples les plus divers, depuis les Grecs et les Romains jusqu'aux Arabes et aux Mexicains, et les variétés en sont infinies.' *L'architecture religieuse en France à l'époque romane*, p. 210. There is a good example on a plaque of Dudu, priest of Ningursu, during the reign of Entemena, patesi of Shirpurla,—early third millennium B.C. The plaque is in the Louvre: it is figured in Leonard W. King's *History of Sumer and Akkad* (Chatto and Windus, 1910), p. 110. Cf. 1 Kgs. vii, 17.

³ *L'Art Chrétien Primitif et l'Art Byzantin*, Brussels, G. van Oest, 1928, p. 13.

church at Selham in Sussex might almost have been brought from the Levant: the bas-reliefs of the same era representing the story of Lazarus, now in the south quire aisle of Chichester cathedral, are largely Byzantine in feeling. In the Bayeux tapestry the chasuble worn by archbishop Stigand is cut away in front in close resemblance to the fashion of the eastern church. This widespread eastern detail, however, does not appear in the very least to have affected the planning of churches,—with which at present we are specially concerned. In fact nothing is more remarkable about Byzantine influence on the architecture of the west than the manner in which detail and general design are only occasionally found combined in the same structure. The wealth of Byzantine ornament to be studied at Ravenna and Rome has left the basilican plan of their churches almost entirely unaffected.

Here and there indeed examples of purely Byzantine planning may be found. The little capella della Madonna di Pietà at San Satiro in Milan, which appears to be part of the original buildings of the convent founded by archbishop Ansperto, A.D. 868–881,¹ displays an octagonal dome resting on four columns with tiny nave, transepts and apsidal chancel of purely Byzantine character, but hopelessly spoiled in the period of the renaissance. There survives, however, a very remarkable reused capital with very rude acanthus leaves, in which Porter sees a fifth-century piece of work displaying a sort of transition from classical to Byzantine sculpture. This little building resembles some of the smaller churches in Athens.

The great bulk of western European churches that display Byzantine structure, however, have no trace of Byzantine detail. Very broadly speaking the spread of Byzantine detail came earlier than the vogue of Byzantine design.

A new channel through which Byzantine architectural influence reached the west was opened by the eastern trade of Venice and it is remarkable that it was confined to a very few buildings, such as the noble city church of St. Mark and the little S. Fosca at Torcello.

St. Mark's is perhaps the most remarkable of Byzantine churches to be found on the west of the Adriatic and one of the very few to display both Byzantine planning and

¹ The very fine campanile seems contemporary.

Byzantine detail. The reason for the latter, however, is the fact that its shafts and other ornamental features were actually brought to Venice from the east. The extreme difficulty of copying a plan so intricate as that of St. Sophia caused the Venetians to imitate the church of the Apostles at Constantinople, erected by Justinian but destroyed by Mahomet II in 1464, so that we have only the description of Procopius as to what its character was. The design does not appear to survive in any existing church in the east, for undoubtedly the subtle Greek mind had a strong preference for something less obvious and more ingenious. The nave, transepts and quire of St. Mark's, together with the central space, are each approximately square and covered with a rather flat lighted dome on pendentives, rising over great round tunnel arches whose vast square piers in characteristic Byzantine fashion are wholly within the church, but pierced on two levels by smaller arches to avoid too heavy an effect. Passing through these great piers an aisle extends the whole way round the building except at the east end, where are preserved the three apses of the ancient basilican church, erected originally shortly after A.D. 829, when the bones of St. Mark were brought from Alexandria, but rebuilt in A.D. 977 by the doge Orseolo. The side apses evidently dictated the width of the great piers when the present domed structure was reared by Domenico Contarini, 1063-1071.

A large Byzantine church usually has aisles in two storeys, both vaulted,—the upper forming galleries for women,—so striking a feature at St. Sophia. At St. Mark's these were not required, so there is a mere passage over the arcades which in nave and transepts cross the great arches, giving them a rather meaningless effect. Single arches take their place in the quire. These arcades with their magnificent Corinthian shafts probably belonged to the ancient basilica and those in the nave are perhaps in their original position.

The exceedingly simple design of the church is slightly complicated by an outer aisle, roofed with a series of domes, west, north and south of the nave, and this is further extended by a series of deep arched recesses along the façade over which is the external gallery upon which are ranged the splendid old Roman horses of bronze; from it

of old the doge and other officers of the republic were wont to overlook ceremonies in the piazza. As it was impossible otherwise to utilise the spoils brought from the east these recesses have shafts meaninglessly set up on two levels to support the arches; in the western aisle or vestibule there are shafts that have nothing at all to support. Ornament is everywhere supplied in lavish abundance by veneering the lower portions of the church with marble slabs; the upper, including the soffits of the great arches, the pendentives and the domes, with mosaic having a background of gold,—the work varying much both in merit and in date. The interior effect is sumptuous and grand but it certainly lacks the supreme magnificence that makes St. Sophia so absolutely inimitable. Even St. Mark's suggests that its builders were not absolute masters of the style they used. Much of the design was obviously suggested

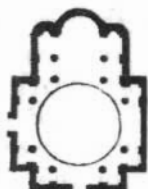


FIG. 6. S. FOSCA, TORCELLO.

by the need for using materials from elsewhere. Despite the relatively small scale of the structure and the fact that the abutment should have been ample, great arches have iron ties. Such devices were scorned by the mathematical Greeks, though they are exceedingly usual in Italy and particularly in Venice itself.

The little church of S. Fosca at Torcello, in its present form a building of the twelfth century but certainly on earlier foundations, is largely Byzantine in plan as also in some of the details, particularly the capitals of the double shafts of the arcading round the exterior of the apse. A central square opens by three very unequal arches—the central by far the widest,—to projections on every side. That to the east extends two bays and ends in three apses; the others are shallow and plain. The quasi-Corinthian capitals of the columns are similar to those of the basilican cathedral, with which S. Fosca is connected by a cloister,

a building which, like so many others is purely Romanesque in plan, while displaying Byzantine influence in much of the sculptured detail. It is noteworthy that the circle for the dome at S. Fosca is formed in the square not by pendentives but by squinch arches on two levels. Nothing could be more eloquent of the fact that Byzantine methods of building were never deeply rooted in Venetia. Of the original effect of the church it is not easy to judge since the structure is very largely restored and no dome at present exists.

It seems likely that the Byzantine buildings of Venice were not particularly admired by contemporaries since even in Italy no school was created, however the influence of the eastern voyages of Italians crops out in their buildings now and then, as with the dome over the crossing of the cathedral at Pisa. And there are many other examples.

The strange church of St. Antony at Padua (b. 1232-1307) is an interesting though not very successful effort to combine Byzantine forms with Gothic details. The building is larger than St. Mark's (378 ft. in length) and has two domes over the nave, one each over crossing, transepts and quire, another over the apse and an eighth over the central chapel of the ambulatory. The domes, whose drums were heightened in 1424, are the principal feature of the exterior, but far too close together to be effective (almost suggesting the boilers of some giant industrial plant) though a picturesque character is produced by tall octagonal turrets of rather German character flanking the quire. (See plate 1.)

The interior is extremely simple with the plainest of large pointed arches, two in each dome-bay each side, between the nave and its aisles and the details are as poor as Italian Gothic is ever apt to be, though the general effect is enhanced by some splendid works of art. The characteristically Lombardic façade with its great flat gable, the huge pilaster buttresses without set-offs, the bold arcading, the extraordinary sky-line produced by the confusion of turrets and domes produce an effect very different from that of any other church on earth, but the building was certainly not calculated to produce any reaction in favour of Byzantine forms.

Even in the city of Venice the Byzantine style procured

but a precarious foothold, though a few of its details may be seen in many of the palaces that line the canals and give the place an oriental atmosphere beyond that of any other great centre in the west.¹ The place in fact was later to become the seat of what is perhaps on the whole the best Gothic that Italy possesses, as illustrated both in its churches and the palace of the doges, whose Gothic details are in their own line quite unsurpassed. The two great friary churches, S. Maria Gloriosa (Frari) and SS. Giovanni e Paolo appear at least in some ways to catch the true character of Gothic better than any other large churches of Italy, despite the great beams with which all their arches are tied. The latter, however, has a plain central dome. Even the façade of St. Mark's has been largely gothicised by the addition of remarkable gables and pierced pinnacles over the Byzantine arches. A good idea of its far severer original appearance is to be gained from a thirteenth-century mosaic under one of the arched recesses on the north of the façade. But Venetian Gothic like Venetian Byzantine reflects far more of the detail than the real spirit of the style.

It is, however, interesting to find in renaissance days a certain Byzantine revival; the design of the church of S. Salvatore (1506-34, by Giorgio Spavento and Tullio Lombardi) was very obviously suggested by that of St. Mark's, just as the plan of S. Giustina at Padua (G. de Brescia, 1501, A. Leopaedi, 1521-22, A. Moroni, 1532) is based upon St. Mark's as well as San Antonio.

It is to quite a different part of western Europe that we must look to find domed construction really acclimatised as a natural and common form of roof. From Limoges a most remarkable series of domed churches extends wide and far over what is now France;—northward to the Loire, southward beyond the Lot and westward as far as the ocean. They vary in date from the eleventh century into the thirteenth and in size from the great abbey of St. Front at Perigueux to the smallest village church. They display domes on pendentives and other Byzantine features of construction, but they are nearly without a trace of Byzantine detail, which is more frequently to be seen in Romanesque churches, mostly of rather earlier date,

¹ Outside the Spanish peninsula.

partly within the same area but rather more in districts further east and south. These buildings hardly constitute a school,¹ for the dome is merely an alternative mode of roofing to the barrel or quadripartite vault which sometimes, as at Périgueux and Angoulême, dictated the plan of the building, but very often it did not; indeed in the bulk of these churches it would not be possible to tell from the exterior whether the roofing were in domes or other vaulting. The fabrics are, however, of the greatest interest because they and they alone in mediaeval western Europe display a mode of covering that assuredly was not Romanesque nor Gothic, and yet became firmly rooted, lasted for some two centuries and exerted a striking influence on the architecture of a very considerable area.

Whether this fondness for domes was derived from Byzantine influences or was purely indigenous has been the subject of a lively controversy which has been carried on spasmodically for three-quarters of a century, mainly by French antiquaries. It has been strenuously denied that the domed churches have anything Byzantine about them, but this seems an exaggeration. Few can stand under the domes of St. Front without feeling that it radiates at least something of the true spirit of Byzantine work (and all the more impressively in a sense from the complete absence of painting, mosaics or marble), while it is at least strongly suggested in many of the other churches, including some quite small and late ones such as Vieux Mareuil. Most emphatically, however, this series of churches rather illustrates the spread of Byzantine influence than constitutes anything that could properly be described as a province of Byzantine architecture. St. Front stands quite alone among them in possessing any recognised Byzantine plan.

In 1851 M. F. de Verneilh published a rather poorly arranged, though well illustrated, book, *L'architecture byzantine en France*, which is mostly about St. Front² and takes the line that this building, copied from St. Mark's, was the earliest of the series and the prototype of all the rest. His views were accepted by Viollet-le-Duc, but attacked in 1882 by Alfred Ramé. Anthyme Saint-Paul

¹ See a very interesting article by E. Lefevre-Pontalis, *L'école de Périgord n'existe pas*, *Bull. mon.* 1923.

² As a guide to the study of the domed churches as a whole his work is decidedly disappointing.

likewise criticised Verneilh's views, but afterwards largely accepted them. MM. Brutails¹ further attacked, pointing out that the domed church of St. Front must have been built after the fire of 1120 and otherwise showed that Verneilh was badly mistaken in his dates. R. Phené Spiers, F.S.A., in a detailed discussion of the whole question,² comes to the conclusion that St. Front was undoubtedly copied from St. Mark's, but that the domes were purely indigenous to France and had no connection with the east.

F. M. Simpson, after declaring St. Front to be 'undoubtedly Byzantine' and 'undoubtedly copy of S. Mark's,' says that the other domed churches may be 'due to Greek or Venetian colonies in the neighbourhood, . . . but they are more likely the result of local traditions of building which had lain more or less dormant during the dark ages.'³ This does not seem very convincing.

C. Diehl says: 'Déjà la Renaissance carolingienne avait du beaucoup à l'Orient; l'art roman ne lui doit pas moins, pour certains de ces plans et, plus encore, pour sa décoration: les églises à coupole du Sud-Ouest de la France suffisent à le démontrer.'⁴

Strzygowski⁵ says: 'We should no more regard these as of French creation than we should attribute, for example, the early church remains on Bulgarian soil to Bulgarian genius. . . . These churches occur in the same regions as those with barrel vaulted halls, and chiefly in Aquitaine; in Périgord they completely superseded the barrel-vaulted type. Armenia, as we have seen, was not their place of origin; they came from Iran, their route, so far as it can be traced, leading from the region of the Nestorian churches and of Aleppo to Constantinople. The employment of the pointed arch is additional evidence of this. It is remarkable that in the French churches the domes do not rise from squinches,⁶ but from spherical pendentives, though these are not constructed with wedge-shaped stones but, as in Armenia, with overlapping horizontal layers. The blind arcading in the interiors also points to Armenia. . . . (These churches) afford perhaps the best examples of a

¹ *Bull. mon.* t. lx, 1895.

² *Journal of the Royal Institute of British Architects*, 3rd ser. vol. 3, 1896.

³ *History of Architectural Development*. Longmans, Green, 1909, vol. ii. ch. xiii.

⁴ *L'Art Chrétien Primitif et l'Art Byzantin*, 1928, p. 45.

⁵ *Op. cit.* p. 89.

⁶ This statement appears to require slight modification; of course it is broadly true.

movement from Iran to Europe which did, indeed, pass by way of Constantinople, but died out in a region much further to the west, where it found its chief representation.'

James Fergusson¹ (*Handbook of Architecture*, vol. II, 1855), J. L. Petit (*Architectural Studies in France*, rev. ed. 1890), Sir Gilbert Scott (*Lectures on Mediaeval Architecture*, vol. II, 1879) Prof. Baldwin Brown (*From Schola to Cathedral*, 1886), Sir Thomas Jackson (*Architecture*, 1925), with many lesser writers all accept the Venetian origin of the domed churches, but this is most strenuously denied by R. de Lasteyrie in his magnificent work, *L'Architecture Religieuse en France à l'Époque Romane* (1912). He claims that the dome on pendentives originated in the west as proved by the temple of Minerva Medica and a chamber in the baths of Caracalla (p. 45). To show that such a method of construction was known in Gaul he gives a drawing² of the top of a fountain at Beurey-Beauguay (Cote d'Or) in old Burgundy, which consists of a single block of stone in the form of a dome rising on pendentives from four arches belonging to the imperial period. (It does not, however, in the least resemble the domed churches and it is in a completely different district, though like Périgord and Charente, included in the limits of present day France.)

To this it may certainly be objected that in itself and on a small scale a dome on pendentives is far too obvious a form of construction to have any particular significance. It may be found in the most widely separated portions of the globe. The fourteenth-century tower of Rhoscrowther church, Pembrokeshire, has roughly built domed coverings on two different levels, the stones used being so small that though they are laid on a corbel squinch principle they would if plastered beneath present the exact character of pendentives and domes in the same sphere. The central tower of the old city of Tientsin, China, has four heavy arches through which the two chief streets intersect, and between and above them is a heavy brick dome on pendentives. This little structure was designed during the sixteenth century by an artist named Mei Hsien Seng. In itself a dome on pendentives or something of the kind is

¹ This view is, however, modified by other portions of the same work. ² *Op. cit.* p. 274.

the simplest way to cover a small square space with masonry, but the great glory of the Byzantine style was to make it the grand central feature of a vast composition.

The principle of the dome was quite well understood by mediaeval builders. A fine and very bold example crowns the great circular keep tower of Pembroke castle, a work of the eleventh century; as the walls are nearly twenty feet thick there was no difficulty about abutment. At Thirlwall castle, Northumberland, erected with stones from Hadrian's wall, a square dome is built over a little mural chamber in the north-west corner. Domes of one kind or another may be found in almost every part of Europe, but it was only in the district of Périgord and its vicinity that they became a prominent feature of mediaeval architecture anywhere west of the Adriatic. Had it been otherwise the octagon at Ely would almost certainly have supplied an example.

To the present writer it seems that the derivation of the French domed churches from Venetian influence is overwhelmingly probable:

1. A Venetian colony was founded at Limoges in 988¹; the city still has a winding Rue des Vénitiens and the lions by the tower of St. Michel have a very Venetian look. This place is admirably placed for influencing the whole district of the domed churches. The fact that the Venetian colony eventually included glass-workers immensely increases the probability of its affecting the architecture of the district, and it would seem to be a very unlikely coincidence if buildings so similar to St. Mark's were developed by a pure accident.

2. A great dome on pendentives is by no means an obvious way of covering the central or any other important part of a church and the resemblance in plan between St. Front and St. Mark's is so close that even Spiers believed the French church to be copied from the Italian. Lasteyrie's arguments to the contrary² do not seem very strong: 'ces comparaisons ne riment à rien; car Saint-Front, dans l'intention de ses constructeurs, ne devait pas être une église en forme de croix grecque. Si elle a ce plan, c'est qu'on a hésité à détruire l'admirable clocher

¹ Or about that time.

² *Op. cit.* p. 469-470.

contre lequel elle vient buter, et que finalement elle est restée inachevée. Mais on avait évidemment l'intention d'en faire une église en forme de croix latine, du même type que la cathédrale d'Angoulême, car on avait commencé à l'ouest du clocher la construction d'une travée formant le pied de la croix. Des restes importants des quatre piles qui devaient en porter la coupole se sont conservés jusqu'à nos jours.'

To this it may be objected that the tower, standing over

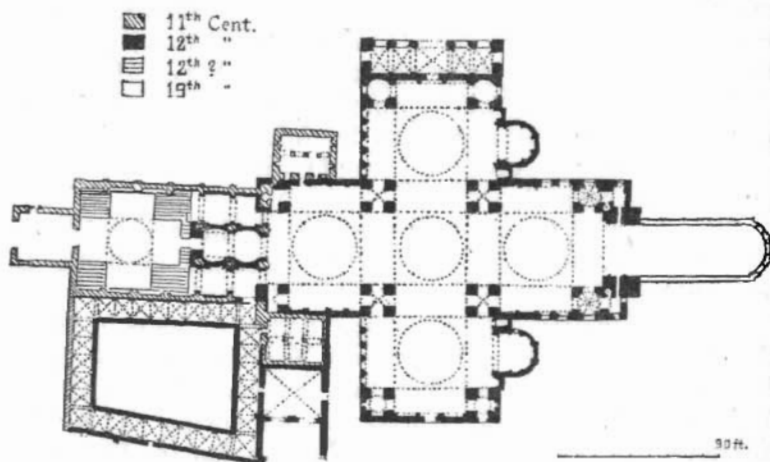


FIG. 7. ST. FRONT, PERIGUEUX.

(The abbey cloister south of the older church, the tower over its two east bays).

the eastern part of the nave of the old basilican church and completely blocking it up, must have been built in connection with the domed church itself and that the work further west occupying the west part of the old nave is both far too small to have formed the west end of the existing church and also has a different axis. Even if the curious square towers that stand in the corners of what is now an open court were planned as the piers of a dome, their character is completely different from that of any part of the present church. It seems impossible that Lasteyrie made any detailed survey of the building.

3. While it is perfectly true that the French ways of

constructing a dome on pendentives are quite different from Byzantine ones, the fact seems of little importance, as each community will naturally have its own method of building. In the Pennsylvania railway station in New York the great hall of a Roman bath is very accurately reproduced with the help of a framework of steel.¹

4. The dome is by no means the only Byzantine feature displayed by the French churches. The earlier ones have the characteristic great internal piers, occasionally pierced for lightness, but as the style develops under Gothic influence external buttressing is sometimes substituted in order to give more lightness to the interiors. The stone galleries used for women in the east are also replaced by passages along the top of mural arcading of rather different character from what is found in Romanesque and early Gothic buildings.

5. The domes do not look spontaneous or uniform but on the contrary are applied in the most diverse ways. Had the dome originated locally it might be expected to solve some particular problem and to have developed some particular plan instead of being used quite at haphazard and as an alternative to ordinary Romanesque arrangements. Indeed very frequently the dome was an after-thought, not intended at all when the foundations were laid. The domed churches entirely defy classification. Hardly two are alike in general plan, which is all the more remarkable seeing that the great majority belong to the twelfth century. This is far more easily understood if the whole idea of domes were of alien introduction than if it had been a purely indigenous development.

It must be confessed that the theory of the native origin of the domed churches receives some support from the presence of certain domes resting on squinches in different parts of France. An example is found in the magnificent early eleventh-century church of St. Hilaire-le-Grand at Poitiers. In ground plan it is complicated, the wide aisles of the nave vaulted with a line of central pillars, the apsidal chancel having a lofty arcade with ambulatory and radiating chapels, the transepts also having eastern apses. The width of the nave is reduced for the

¹ Six differences in the principles of construction are given by Spiers (*op. cit.* p. 251), and copied by Lasteyrie, p. 470.

purposes of vaulting by lofty columns, each consisting of four shafts, standing out a short distance from the piers that separate the centre from the main aisles. These support round arches in both directions, forming square compartments whose corners are taken off by little squinch arches (not pendentives) over which are domes of the same form. The central space is similarly covered. These domes are so exceedingly individual and so entirely unlike

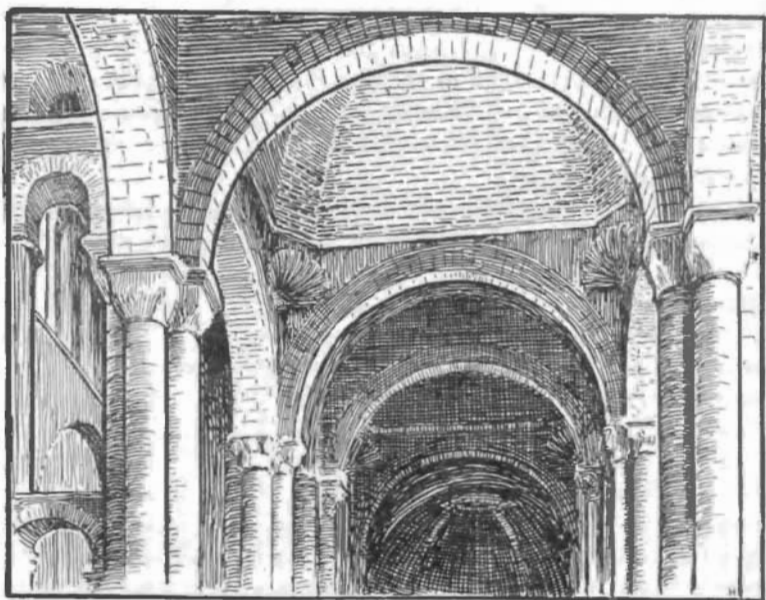


FIG. 8. POITIERS. S. HILAIRE-LE-GRAND: NAVE LOOKING EAST.

anything in Byzantine architecture that if this church stood alone it might seem strongly to support the theory of an independent origin of domed roofing in central France. Lasteyrie¹ says that it is a monument quite apart from the others of the 'family' of domed churches, and he makes the very interesting suggestion that the domes were probably introduced after the failure of an attempt to vault the building 'en berceau à la façon poitevine,' but from the

¹ *Op. cit.* p. 479.

nature of the abutment available such an effort would seem to have been rash.

The extremely remarkable eleventh-century church of Notre Dame du Port at Clermont-Ferrand, far from most of the domed churches, and one of the most interesting Romanesque buildings in France, has over the central lantern under the octagonal tower a small dome, round with flattened sides, supported by squinches.

Another very interesting church, St. Philibert at Tournus, near Macon, within the limits of ancient Burgundy and still further from the country of the domed churches, possesses an interesting little central dome masked on the exterior by the lofty tower. This structure also belongs to the eleventh century and is remarkable otherwise for the arches across the nave sustaining tunnel vaults at right angles to the axis of the building high up between them, and for the square ended chapels that radiate from the ambulatory of the apse. The middle tower rises from square piers and its arches have shafts with grotesque animal-capitals resting upon corbels. Above an octagon is formed by corner squinches, each shaped like a portion of an apse vault, and between them are small shafted windows; upon this octagon a round dome is placed. It has as little Byzantine character as the churches at Poitiers and Clermont-Ferrand.

Thus in widely scattered portions of the territory that now forms France, the dome, resting on squinches, is sometimes found and that in churches that have nothing, at any rate strikingly, to suggest an eastern origin. These appear to be as altogether unconnected with the Périgord-Charente group as is the dome in the castle at Pembroke.

It is very difficult to say which is the earliest of the domed churches of Périgord and Charente. At Limoges itself nothing remains of older date than the thirteenth century, except a remarkable vestibule to the cathedral, a great square mass of masonry, in the centre of each of whose walls is a massive round arch, while four central pillars have plain abaci corresponding. It is probably a work of the tenth or eleventh century and it may well have formed the vestibule to a building with Byzantine features. About the thirteenth century the whole space between the pillars and the outer walls was built up to

11 X 1 + X 11 -

enable the fabric to bear the weight of the huge tower which was raised above, a remarkable structure with tall lancets and corner turrets very similar to those of St. Pierre and St. Michel in the same city. The existing cathedral is rather ordinary Gothic.

At the small village of Bourg du Bost (near Ribérac, Dordogne) is a remarkably interesting little church of nave, middle tower and apsidal chancel, which appears to date from the eleventh century. The nave has a flat boarded roof¹ as vaulting evidently presented difficulties. The tower rests on four small round arches of the plainest character with simply bevelled fillets. Pendentives slope up from rough outer orders and the dome rises over a plain string-course. It has the unusual character of being oval instead of round. The north and south arches form deep mural recesses; the chancel with its apse has arcading and simple barrel vaulting. The building has not a trace of Byzantine detail; it seems one of the earliest examples of pendentives in the domed churches of France.

In the village called Celle St. Avant, south of St. Maure en Touraine (Indre et Loire), is an interesting little Romanesque cruciform church, over whose central arches are squinches supporting a circular moulding over which is a dome in the low tower. The vaulting is quadripartite, except, of course, in the apse.

The late Romanesque church at Dignac (Charente) has pointed arches under its central tower in which is a round dome supported by squinches, which are curious at so late a date. The nave has a pointed barrel vault with arches across; the south aisle has a round barrel vault. There appears never to have been a south transept but the barrel vault of the northern one with those of the nave and the apse give the dome very adequate abutment.

The church of St. Astier² (Dordogne) was founded 1011-13 by bishop Radulphus de Cohalia, but it is impossible to say whether any portion of the existing massive, ungainly, badly cracked, limestone building goes back so far. The west bay of the nave has huge square block piers with

¹ The very existence of a wooden roof, so proper for basilican or Gothic churches, shows how little of the true Byzantine spirit this building possesses.

² Spiers, *op. cit.* p. 236, asserts this to be

the earliest of the domed churches whose date is known, but Lasteyrie doubts whether any domes ever existed, *op. cit.* p. 473. We certainly have no right to assume that the early eleventh-century church had domes.

pointed arches which almost certainly originally supported a dome, but they do not look older than the twelfth century. The present character of the structure is of the fifteenth century and later; the stone is extensively used for lime quarries in the vicinity, but it is not very suitable for building.



FIG. 9. S. FRONT, PERIGUEUX: LOOKING NORTH-EAST.

An extremely interesting domed church, belonging to the early part of the twelfth century, is the ancient cathedral of Périgueux, dedicated to St. Etienne, now usually called the Cité. Of the original work only one bay remains with fragments of another to the west. There are heavy square piers and round arches like tunnels with pendentives carrying a dome pierced with little windows and so set

back as to allow a walk around the circle over the pendentives. Despite differences in the methods of construction, the appearance of this work is very Byzantine. Eastward, rather ignoring the older work and not well joined, was added later in the same century another bay covered by a higher dome whose pendentives rise from lofty pointed arches which spring from shafts of developed Gothic character, but there is little effort to lighten the supports by buttressing the exterior. In some respects the newer work is clearly copied from the old, including the unusual feature of the passage round. The church is thus very interesting as displaying early and late domed construction, the essential parts of the fabric very similar but the details very different indeed. The quire displays an interesting attempt to combine domed construction and Gothic detail. It may have done something to suggest that such a combination was not æsthetically successful.

By far the most interesting of all the domed churches, even in its rebuilt and altered state, is the great abbey church of St. Front (now the cathedral) at Perigueux, though Verneilh was certainly mistaken in supposing it to be the oldest of the group or the prototype of the rest. In point of fact it is one of the later examples. It follows the design of St. Mark's far more closely than does any other large mediæval building follow the design of another,¹ and this is all the more remarkable as the builders were in both cases hampered by their desire to incorporate some part of an older structure in a quite different style. At Venice the old east end was preserved; at Perigueux the nave and transepts of the basilican church were not taken down.

In providing themselves with a church of greatly increased size the monks did not reconstruct their convent; while the new building exactly reproducing the five squares of St. Mark's, was so placed that the older transepts flanked its nave (though the axis was slightly changed, creating some minor confusion), the cloister remained south of the nave of the old church with the chapter house against its transept (see plan on p. 64).

It is quite certain that the five-domed church was

¹ For example, St. Patrick's cathedral at Dublin is known to have been modelled on Salisbury, but the resemblance is very much

less close. The same may be said of St. Mary Redcliffe, Bristol and Bath abbey, also of Gloucester and Tewkesbury.

erected after the fire of 1120 which consumed the basilica whose walls in part survive.¹ The roof of that building was certainly of timber, which does not seem possible in the case of the existing church.

The interior is exceedingly impressive and in its character purely Byzantine, with its five great domes rising on pendentives from tunnel-wide arches that rest on huge internal piers pierced for lightness exactly as at St. Mark's, and as in that church so massive that the walls are comparatively thin. A puzzling feature is that in the transepts the piers are not bonded with the walls as though they were a later addition. This caused Lasteyrie to suggest² that originally there were barrel vaults, but there would be no possibility of providing the necessary abutment.

The building has suffered from a most devastating restoration, amounting to an almost complete rebuilding of all the upper parts, under Abadie.

He went so far as to substitute round for pointed arches, to provide odd-looking round turrets of his own design over each pier and surmounting each dome, and to substitute a dreary new apsidal sanctuary for the original apse which had been replaced by a fourteenth-century chapel. The original work that he did consent to preserve was planed down to match his improved style so that it is exceedingly difficult to reproduce the original appearance of the church.

The principal difference from St. Mark's³ is the fact that instead of crossing the inner sides of the great arches, the arcades carrying the gallery passage are placed against the walls. This feature is reproduced in nearly all the larger domed churches of France and also carried over into the Angevin style of Gothic (p. 85).

¹ The records are: 'Anno MCXX, XI kal aug. monasterium S. Mariae Magdaleneae de Vizeliaco combustum est cum MCXXVII hominibus et feminis. Similiter incensum est monasterium S. Frontonis civitatis Petragorice, cum multis hominibus et feminis.' *Cbron. S. Maxentii*; Mabilley, *Cbron. des eglises d'Anjou*, p. 429. 'Guillelmi de Alba Rocha tempore, burgus S. Frontonis et monasterium cum suis ornamentis repentino incendio conflagravit, atque signa in clocario igne soluta sunt. Erat tunc temporis monasterium ligneis tabulis coopertum.'

Labbe, *Nova Bibl. MSS. Libr.*, vol. II, p. 219. Lasteyrie; *op. cit.* p. 472.

Monasterium clearly means the monastic church. It seems certain that the old tower was destroyed; the existing one could not have survived such a fire and it is in a perfectly impossible position to have belonged to the basilican church. The number of casualties in St. Mary Magdalen's seems almost incredible.

² *Op. cit.* p. 480.

³ Apart from the severity produced by the absence of shafts against the piers and any surface ornament.

The cathedral of Angoulême was 'rebuilt from the first stone'¹ by Gérard de Blaye, bishop A.D. 1101-1106, who having been master of the school at Périgueux, had doubtless seen the erection of the original domed cathedral of that place, but not of course of the abbey church of S. Front. It consists of a central dome forming a feature of the exterior, nave of three bays each covered by a dome, a large apse with four small radiating chapels and transepts,

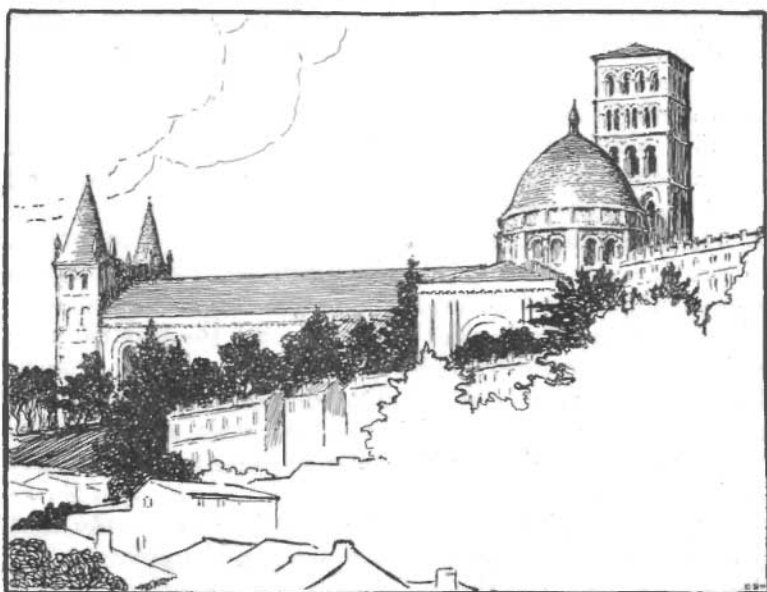


FIG. 10. ANGOULÊME : SOUTH SIDE.

each consisting of a short barrel-vaulted space opening to a tower, whose lower stage is domed. All the domes rest on pendentives: the central one with an intermediate octagonal lantern. The northern tower alone rises above the roof with tiers of Romanesque arcading, a beautiful composition in itself but grouping badly with the central dome which is far too near.

This church, like St. Front, was rebuilt with little regard

¹ Labbe, *Nova Bibl. MSS. Libr.* vol. I. p. 325. The bishop can hardly have completed the fabric: the west end is presumably his work.

for its original character by Abadie and the interior looks very modern. The arches are just pointed but the massive impression, which at St. Front is unrelieved, is here modified by inner orders resting on Gothic-looking shafts with foliage caps. This device rather obscures the fact that the piers are very massive and wholly internal, needing only pilaster buttresses. Advantage is taken of the lofty barrel vaults of the transepts to make the north and south central arches about seven feet higher than those that open to nave and quire, the latter also has a barrel vault. Mural arcading, with passage galleries above, under the great side arches, suggest a common Byzantine arrangement, but the character of the building is very nondescript; it fails to produce either a Byzantine or a Gothic atmosphere. The rather elaborate sculpture of the façade is purely Romanesque. The west bay of the nave is more massive than the rest, as if (contrary to custom) that had been the first part built and the design had been lightened as it was completed.

The ancient cathedral at Saintes has transepts covered with domes on pendentives standing wholly outside the aisles and with lofty barrel vaults covering the resulting spaces between them and the central crossing. The whole of the rest of the church is rebuilt in very inferior style (largely eighteenth century Gothic), but it is clear that the original plan was more or less similar to that of Angoulême though without transept towers. The domes are evidently of the twelfth century, and have billet string-courses to mark the line above the pendentives, but they have been very badly mauled. The original arrangement was certainly far from being identical with that of Angoulême and the appearance must have been quite different.

The small cathedral at Cahors (Lot), consecrated in 1119, is remarkable for the extreme simplicity of its design, just a nave covered by two domes, and an apse. The domes rise over pendentives which are supported on very massive, just pointed arches that rest upon heavy block piers allowing fairly thin walls. Beneath the side arches are the usual passages supported upon mural arcading, two singularly plain arches in each bay. The whole work is uncouth and rather clumsy; a very unusual feature is the provision of circular drums that almost touch each other, as at Padua, for the two domes. The sculpture is

very purely Romanesque without a trace of Byzantine influence, particularly the rather crude but most interesting bas-reliefs in the tympanum of the north door.

The appearance of the whole building has been completely changed by the erection of curious fourteenth-

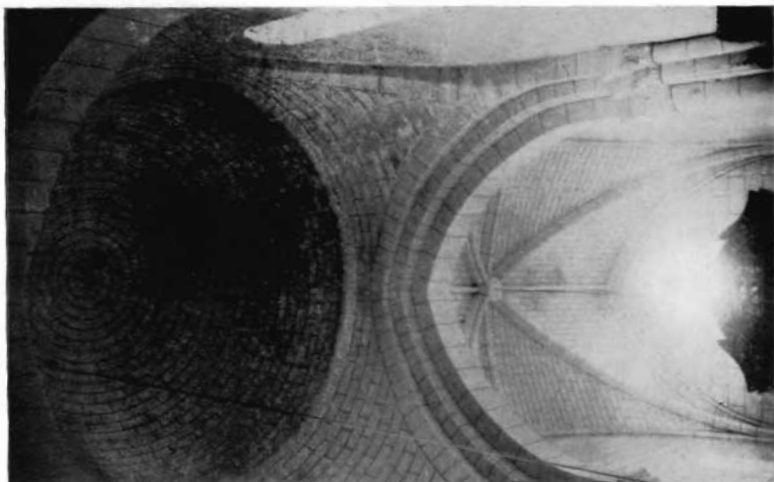


FIG. II. CAHORS : LOOKING EAST.

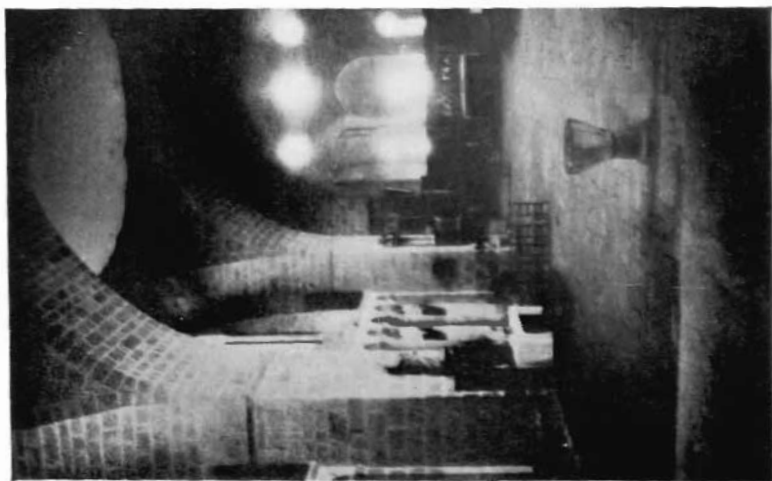
century turret towers over the corner piers (not the two intermediate ones), the provision of a most extraordinary façade of different dates, partly of brick, which displays three towers in contact, creating a great western screen a little like that of Strassburg, and by the building of a large late Gothic apse with seven unequal sides.

A certain real Byzantine atmosphere and one of no little





GENTÉ : LOOKING EAST (p. 82).



SOLIGNAC : LOOKING EAST.

charm pervades the very fine and rather severe abbey church of Solignac, a few miles south east of Limoges (Haute Vienne). The fabric was consecrated in 1143, reconstructed about 1211, after a fire in 1178, but this does not appear materially to have affected the design. The east end is very normal Romanesque, with three little apses projecting from the great apse and others east of the transepts. Over the central space, the two compartments of the nave and the north transept¹ rise domes upon pendentives supported upon the plainest of pointed arches and the most massive piers, purely internal. There are the usual passages upon mural arcading, the little arches resting alternately upon square shafts and corbels. The retention of the most primitive form of the Byzantine work at this late date,—years after the introduction of the shafting at Angoulême,—is certainly remarkable; possibly it is connected with the nearness of the abbey to Limoges. The actual domes are plastered; the piers, arches and pendentives are of ashlar. The general effect of the interior is peculiarly satisfactory, the proportions being very dignified and grand.

It will thus be seen that the domed construction led to a greater variety of planning than was at all usual in the churches of purely Romanesque design. During the twelfth century the domes were so much admired that they were sometimes introduced into churches not originally designed to have anything of the kind.

An exceedingly interesting example of this is the abbey church, Ste. Marie-des-Dames, at Saintes.² It is a fine Romanesque cruciform building with apsidal quire, entirely round arched, except for the pointed barrel vaults of the quire and apse, which are possibly later. The original work seems to belong to the early part of the twelfth century. The central arches, each having an inner order on shafts, support a square dome, its corners taken off upon squinches, very like the domes at Poitiers (p. 66). Above rises a

¹ The south one, provided with four great arches, as if for a dome, has a barrel vault with axis east and west. It is probably altered.

² I had the singular good fortune to be able to examine this building during the summer of 1926. The whole fabric was

cleared of the floors and partitions which had been inserted to convert it into a barrack, but the proposed restoration of the nave domes was not begun. However much it may improve its appearance, this reconstruction will inevitably reduce the historic interest of the venerable church.

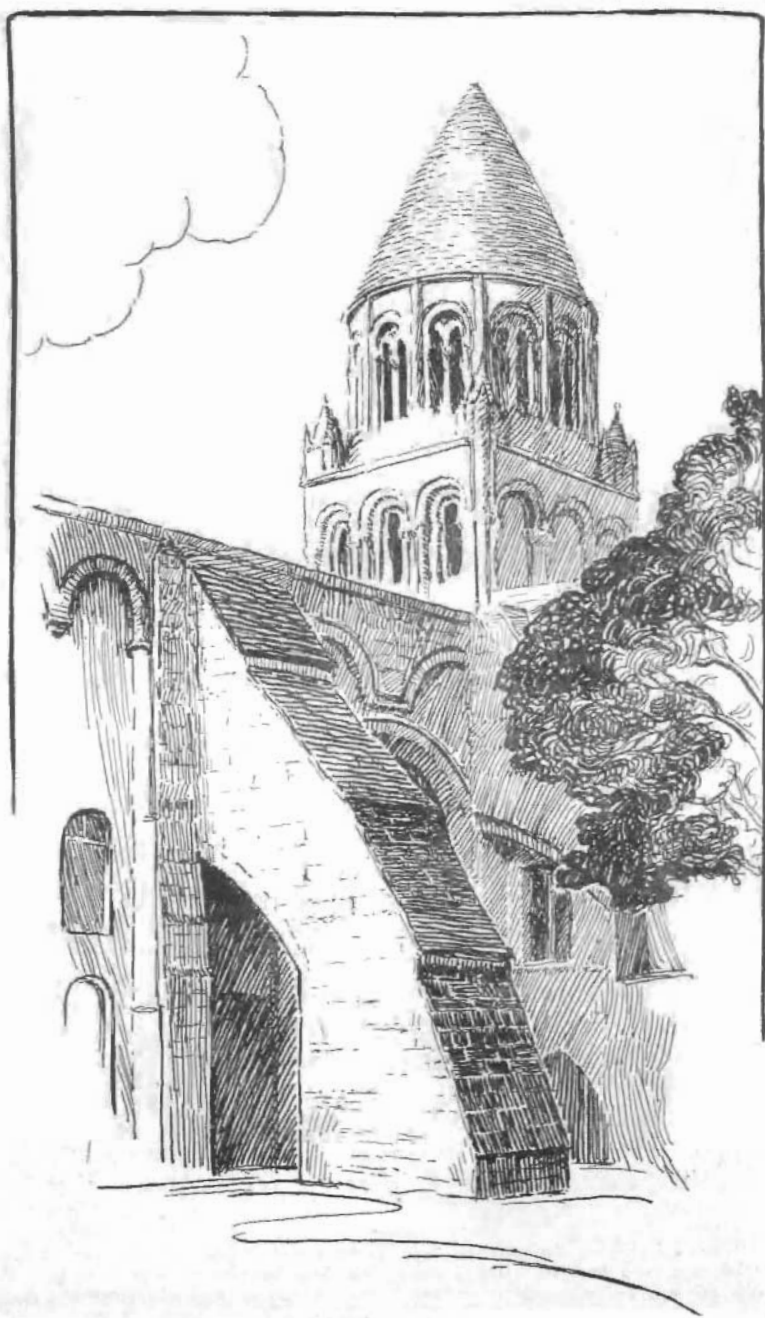


FIG. 12. SAINTES. STE. MARIE-DES-DAMES, OLD CLOISTER COURT,
LOOKING NORTH-EAST.

square tower with characteristic arcading; there is an upper stage with twelve double windows separated by round shafts which extend to the top of the wall. The inside roof is domed and over it is a lofty stone cone with curving sides, ornamented with a scale pattern which (usually very much restored) is found in some of the other domed churches.¹



FIG. 13. SAINTES. STE. MARIE-DES-DAMES, NAVE INTERIOR :
CENTRE OF SOUTH SIDE.

(Showing inserted responds and part of a pendentive.)

The façade has three doors, richly sculptured and it is clear that the nave originally had centre and aisles, nearly the same height. Against the outer walls inside remain portions of tall shafts with rough volutes on their capitals, which carried mural arcading above the upper of two tiers of windows. It would certainly seem as though the roofs must have been of timber; there is no abutment for vaulting.

Late in the twelfth century, however, the good nuns

¹ M. S. Briggs, *Short History of the Building Crafts*, 1925, p. 207, suggests that this may conceivably have inspired the sculptured domes of Cairo, dating from the fifteenth

and sixteenth centuries. He quotes A. Choisy, *Histoire de l'Architecture*, ii, 162-3. The connexion seems improbable.

entirely reconstructed the nave of their church. Large and rather ornate shafted responds were inserted, ignoring the older arcading, pointed arches were thrown across the building and beside the walls so as to form two square compartments, including the space formerly covered by the aisles. The outer orders of the arches were chamfered in the usual French way to form the beginnings of the pendentives which supported domes, not as usual directly but over low ashlar built drums.¹ The eastern one can still be examined in the roof; the western has been superseded by a plaster ceiling resting on clumsily inserted pillars. The responds being far less massive than piers and the walls relatively thin, enormous external buttresses were added to sustain the thrust of the domes; one on the south is made to fly over the old cloister walk. It seems probable that these precautions were not sufficient; at any rate the western dome with its drum has completely disappeared, while in the east bay the drum alone survives and at a lower level is a very awkwardly inserted late Gothic vault with pendant.

Very much the same architectural development may be studied in the larger church at Fontevrault, which also belonged to Benedictine nuns. It is specially interesting as containing the singularly beautiful painted wooden effigies of the English Henry II, with his wife Eleonor of Guienne, their son Richard Coeur de Lion, and Isabelle of Angoulême, wife of King John.

The quire and transepts are ordinary and very beautiful Romanesque work, with barrel vaults and five small eastern apses, opening one from each transept and three from the ambulatory of the main apse. The four central arches are round, resting upon large jamb-shafts and there are other shafts for the vault which takes the form of pendentives continued without any string or other interruption to form a dome of the so-called Bernay type (p. 82). The tower has double windows of the usual Romanesque character, all this work belonging to the eleventh century.

It is certain that an ordinary nave was intended, for there may be seen the eastern responds for its arcade and the arches leading from its narrow aisles into the transepts.

¹ These seem to have been internal features only; the domes (like those of nearly all the other churches) were covered by a single gabled roof.

During the twelfth century, however, was erected a fine nave in four compartments covered with domes, which fits on rather badly to the older work. It is a very fine composition set out with just pointed arches,—the side ones about two feet out from the walls,—rising from double shafts with very spirited capitals. The domes rise above pendentives with heavy string-courses round and there are the usual passages upon subsidiary arcading against the

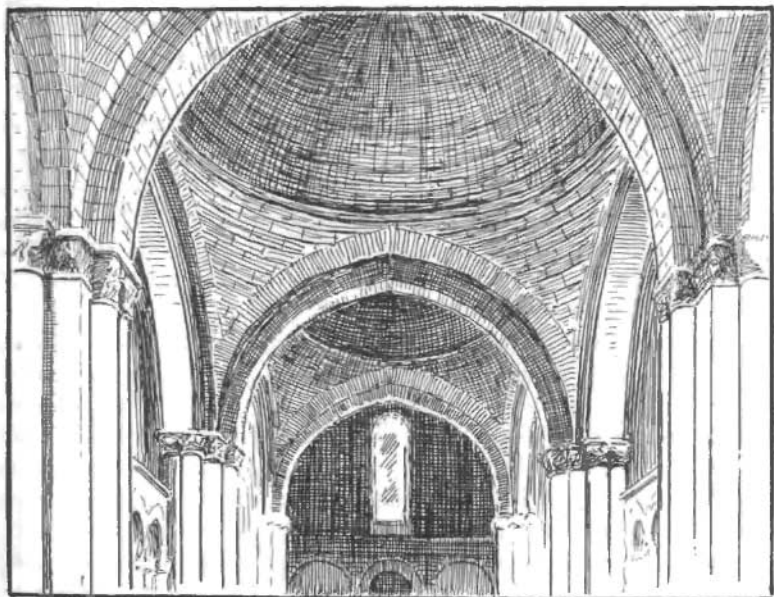


FIG. 14. FONTEVRAULT : LOOKING WEST.

side walls. What exists is, as in so many of these churches, largely modern, the building having been reconstructed by the French government after being cut up for the purposes of a prison, to which ignoble fate the adjoining convent is still devoted, though the cloister buildings themselves are preserved as an historic monument. They have the great interest of being largely mediaeval in a country where nearly all conventual buildings were renewed in renaissance times.

One of the most interesting and unusual of the domed

churches is to be found in the delightful old village of St. Jean de Cole (Dordogne) whose main street leading to a mediaeval bridge of three arches over the river (Cole) is still flanked by a number of old houses with picturesque open galleries and outside stairs. The tiled market house, open on pillars of wood and stone, adjoins the church and rather improves the effect. It was founded originally by Raymond de Thiviers, bishop of Perigueux,¹ in 1086, but what exists is clearly nearly a century later.² The building at present consists of a large round apse with three radiating chapels, each having a three-sided apse with shafted arcading; the west wall is square but the great apse is only slightly elongated by rectangular side walls. There appears to be every reason for supposing that the original design included the usual arcade dividing the central apse from the ambulatory aisle and the width of the former is indicated by the beginnings of the side walls of the unfinished nave, which apparently was not to have had aisles of its own. Perhaps the design was altered in favour of a great dome while the works were actually in progress.

At any rate into the structure were introduced huge, very plain and indeed rather awkward, square corner piers supporting four great pointed arches with pendentives for a dome over forty feet in diameter, but there is at present a flat boarded ceiling. Nothing could be clumsier than the way in which the side apses open at strange angles into the corners of the spaces under the north and south arches and, curious and interesting as the building is, few would call it an architectural success. The proposed dome is clearly a purely extraneous feature unintelligently introduced. Had it been built it would inevitably have been the chief feature of the exterior, which at present displays a large roof of curved tiles with a small tower rising within the centre of the west front. The masonry is a sort of rough ashlar not intended to be plastered within.

The retention of such massive internal piers at the end of the twelfth century seems to show that the Byzantine tradition in France (as in its native east) was apt to be singularly unprogressive, but in the charming little church

¹ *Gesta Episc. Petrag.* Labbe, vol. II. p. 738.

² Lasteyrie, *op. cit.* p. 474, puts the existing work on architectural evidence 'vers la fin du XII siècle.' I agree.





ST. JEAN DE COLE : SOUTH-EAST.
(Market house in front).



VIGÉN : NORTH-WEST.

of Vieux Mareuil we may study a Gothic tendency to reduce the size of the internal piers by providing buttresses without; these last are useful to sustain a heavy machicolated parapet; for the building was fortified, like many others all over the district.¹ There are domes upon pendentives rising over plain unshafted lancet arches covering both compartments of the nave and also the space under the central tower. There are no transepts and the chancel, which has the peculiarity, so rare in France, of a square east end, is covered by a quite ordinary barrel vault.

The general effect of the interior is successful beyond anything attained in the great majority of the domed churches, seeming to combine in a marked degree the lightness and grace of Gothic with a certain dignity which is the peculiar heritage of domed construction.

A rather earlier building of the same general character is the church at Cherves de Cognac (Charente), but the tower is on the north side instead of being central and the chancel has an apse treated in the usual Romanesque manner, external shafts rising to the corbel-table along the top of the walls. The chancel has a barrel vault whose ashlar courses bend round the apse. The three bays of the nave are domed, the pendentives rising from just pointed arches, the transverse ones having shafts with the simplest of cushion caps. The string-course round the bottom of the eastern dome is more enriched than those further west, and this dome has a single small opening facing east. The exterior has not the slightest hint that any domes exist, but the plain pilaster buttresses have needed to be reinforced by later masonry of greater projection.

The striking little twelfth century church at Vigen, within a mile or less of the abbey of Solignac, has a nave of three compartments, central space, square chancel and transepts, the three last covered with ribless quadripartite vaults. The central space has the outer orders of its plain round arches chamfered for the pendentives—a very usual arrangement in France,—and the dome rises above an octagonal string-course. At the west end of the nave the wall is built up to form a very ample bell-cot with four

¹ England forms a rather remarkable contrast with other European countries in having regularly fortified village churches only near some frontier. Small windows

placed high up in massive walls intended for defence in an emergency hardly come into quite the same class.

openings; the west bay has four pointed arches, over which are pendentives, which form part of the sphere of the dome without any string-course, as in the aisles of the eleventh-century abbey church at Bernay. The two other bays of the nave were doubtless domed originally, but they have now quadripartite vaults. This small and relatively unaltered building possesses a rather special charm and like nearly all the domed churches, including all the lesser ones, has absolutely no external feature that would indicate any variety from the ordinary Romanesque planning, except perhaps the square east end.

The dome is very often to be found employed as a suitable covering for a tower whether or not it forms a prominent feature of the interior of a church. This is to be seen in the magnificent cruciform twelfth-century church at Le Dorat, north of Limoges (Haute Vienne) with its impressive array of apsidal chapels, the central one curiously built up into a fortified tower during the fifteenth century. The internal roofing consists of pointed barrel vaults with strengthening arches across, but both the central and the western towers have domes upon pendentives, that of the former rising over a most striking arcaded lantern. As is invariably the case the towers have no external indication of the character of their internal coverings.

At Montmorillon (Vienne) the Romanesque church of Notre Dame, standing magnificently above the river, with crypts on two levels below the apse and central tower, has a rather high dome on pendentives forming the roof of the tower in the upper church. At the little hillside church of Genté (Charente) with nave and aisles, central tower and square chancel, the east and west central arches have shafts with undistinguished foliage caps, a small head appearing in one of them, and above is a dome on pendentives; work of the twelfth century. At Barret, close to Barbezieux (Charente), the central tower has the usual mural and transverse arches, the latter having inner orders on shafts and a sort of billet abacus which is extended as a string round the apse. The arches are pointed and bevelled for the pendentives and around the base of the rather flat dome is a string-course displaying a chain moulding. These small twelfth-century churches, despite their domes,

have not the slightest trace of anything but late Romanesque feeling.

The very small church of Campagne (Dordogne) is remarkable for having its square dome a feature of the outside, covered with curved tiles, and the abaci of the arches from which its pendentives rise have dogtooth; the work is late twelfth or early thirteenth century. The west wall in the usual fashion of the district is built up square and pierced by three round-arched bell-openings. This with the dome gives the building a very unusual outline;

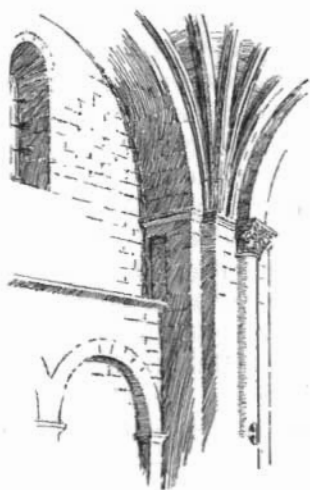


FIG. 15. THIVIERS: NORTH SIDE OF NAVE.

it seems in fact about as different from ordinary late Romanesque or early Gothic forms as it certainly is from Byzantine ones.

It was very early in the thirteenth century that domes went completely out of fashion and no more were built. If they had to be renewed, ordinary vaulting was substituted, at least as a general rule.

The church of St. Léger at Cognac must in its original form have greatly resembled Angoulême; the same sort of shafted piers with mural arcading, carrying passages between them, still exist, very much restored. The pendentives and domes have, however, been replaced by very ordinary vaulting of the fourteenth century. Very much

the same thing may be seen in another twelfth-century church, at Thiviers (Dordogne), where heavy arches whose shafts have remarkable Romanesque carved capitals, with strange grotesque animals and human features, form square compartments that originally were filled with pendentives and domes but now have late vaulting, bearing dates 1511, 1515 and 1880. The mural arcading with passages above remains unchanged.

At Cognac is a most interesting tower, the chief feature of the town, evidently added not long after the church was built, in the angle between north transept and nave. It never communicated with the church except by a door, and it is open to a point above the nave roof. In each corner is a respond consisting of five shafts and from the triple-order round mural arches which they support, rise pendentives with a dome, very small in proportion to its elaborate supports, pierced by a hole for bells. At Chermignac (Charente Inferieure) is a plainer but rather similar twelfth century tower added to a slightly earlier church and similarly provided with a dome which, so far from being a feature of the interior, can only be viewed by straining neck and eyes. There are a good many other instances of the same thing. At Cherves de Cognac the tower is entered from the church only by a door, but it has a lofty little dome on pendentives resting upon round arches and corner shafts. As there is an eastern apse it evidently formed a tiny chapel, now disused.

As might be expected, there was no difference between monastic and secular churches in the matter of employing domical roofing any more than in other principles of construction. Differences were almost wholly in internal fittings.

A study of this exceedingly interesting series of domed churches seems to lead to the conclusion that while the idea of making the dome on pendentives a very prominent or even the central feature of a church was derived through Venice from the east and became so popular that St. Front was constructed on Byzantine models so far as the interior is concerned, the real essentials of the style were never understood. It appears far more remarkable that the domed construction enjoyed such widespread popularity than that it eventually faded away before the

advance of a far superior method of building from the north. The proportions that the domes demanded were clearly deeply rooted.

The architecture of Anjou, a district just north of that where the domed churches are to be found, has as its most essential feature large aisleless open naves vaulted in square compartments, arranged exactly as if for domes. Its most splendid example is perhaps the cathedral of the old capital, Angers, a work of the late twelfth and early thirteenth centuries, consisting of nave of three squares, central space, transepts and quire of one each, the last with an apse in addition. Great lancet arches spring from clustered responds whose bold shafts have carved capitals and the vaulting is domed up in undoubted recollection of the cupolas further south. As in the Périgord churches, also the nave has bold mural arcading with passages along the top.

Precisely the same general features are to be seen in the fine church of St. Pierre at Saumur,¹ whose nave and central tower have thirteenth-century domed up vaulting with thin transverse and ridge ribs, while remains of the mural arcades and passages may still be seen. The transepts and chancel have earlier barrel vaulting. That the Angevin style penetrated far to the south is to be seen at the fine Benedictine abbey church at Brantome on the Dronne, not far from Périgueux itself. The building, remarkable for its very striking eleventh-century tower, with a curious dome in its lowest stage, appears to have been vaulted early in the thirteenth century; its walls with round-headed windows and pilaster buttresses are of a rather earlier date. The vaulting is domed up and the three bays are separated by fine lancet arches exactly in the Angevin way, but nearly the whole of the upper parts was rebuilt by Abadie.² The church is very interesting as a rare example of an important monastic chapel without a nave, and in fact not larger than was needful to accommodate the quire stalls with an adequate sanctuary. This large group of churches, either domed or influenced in their planning by domical construction, is significant as the only mediaeval buildings in the west of Europe that show

¹ Another good example is St. Radegonde, Poitiers.

² An interesting old print in the museum at Périgueux shows how ruinous the structure formerly was.

anything beyond a spasmodic and fortuitous influence from the architecture of the east.

Sometimes in the course of history similarity in architectural forms has been accompanied by influence that extends into well-nigh every department of life. A conspicuous example is the manner in which China and India influenced Japan, not in her art alone but in virtually everything pertaining to culture. Sometimes again influence exerted over architecture, even though very important, has not seriously affected other human activities. During the later middle ages France exercised a far reaching and extremely significant influence on the architecture both domestic and ecclesiastical of Scotland and yet did not, to any very great extent, affect the real civilisation of the country. The troubles of Mary Stuart came largely from her failure to realise the fact.

These domed structures emphatically form an example of the latter condition. While building methods from the east spread very wide and far, they were not accompanied by anything really appreciable of the culture of Constantinople or Venice.

The circular form of the Templars' churches in western Europe was unquestionably derived from the Byzantine church of the Holy Sepulchre at Jerusalem, but whether exemplified in the large Temple church of London or in the very striking little one at Laon these fabrics have nothing Byzantine about them, excepting the actual plan. Their influence on the general architecture of the western church was quite inconsiderable.

In the far north of Europe it is interesting to see Byzantine planning extending to the west from the wide ramifications of the Hanseatic league. In Visby, the capital of the island of Gothland, there is an exceedingly interesting collection of churches, of which the oldest and most massive is that of St. Lars, which was built by the Greek colony during the early part of the twelfth century. The main part of the structure is square and the rough rubble vaulting, whose central part has been restored,¹ is supported on four round arches that rest on four columns placed close to the four corners. North, south and west

¹ A water colour drawing made by my friend, the late Preb. R. H. Codrington, in 1858, shows the central part of the vault fallen and plants growing above.

there project very shallow arms the same height as the rest. Over the western one and resting its corners on two of the large columns rises a heavy square tower. In the thickness of the walls are stairways with galleries on three levels, irregularly disposed. A comparatively low arch in the east wall opens to a small chancel, rib-vaulted and extended by a horse-shoe apse.

The details of this very remarkable building are of the plainest Romanesque but the plan and general inspiration is purely Byzantine, with the four central pillars to be found in so many of the churches of Athens, and yet without a dome. It is of some interest as forming an analogy that cannot well be questioned for the extending of Venetian fashions in architecture along the routes of trade. The interior has a decidedly eastern atmosphere, and is in its way exceedingly impressive.

The building influenced the plans of three other Visby churches, St. Drotten its near neighbour, St. Clemens and St. Olaf,—the church of the Norwegian colony,—but these are all a little later and much further from any Byzantine originals.

The disposal of four pillars arranged in a square as the centre of an unusual ground-plan seems to have made some progress in the Baltic lands, apparently radiating from Visby. Four such supports are to be found in the centre of the round church at Bjernede, of the square one at Ledøje and of the very remarkable equi-cruciform structure at Kallundborg, each arm of which ends in an apse, all in Denmark.¹ The pillars are quite different in character from any that would carry a middle tower.

It was not exclusively from the Christian east that new influences invaded western Christendom.

Some of the churches erected under the dominion of the Norman kingdom of Sicily show the strongest oriental influences, and St. Giovanni degli Eremiti at Palermo with its square forms and round domes is very like an African mosque. This should occasion no surprise when it is realised that the Normans were a mere conquering oligarchy who certainly would disdain to do menial work for them-

¹ These Danish churches are almost the only buildings mentioned in this article that I have not visited. I rely on descrip-

tions in *Churches of Denmark*, by Major Alfred Heales, Kegan Paul, Trench and Trubner, 1892.

selves. The actual builders, being Saracens or Greeks, used forms to which they were accustomed and their masters probably gave little personal attention to such details. This is in accordance with the whole character of the kingdom which attained a remarkable culture from the rich local influences of three continents by which it was surrounded. At all times of their history the Norse (in England, Ireland, Scotland, Normandy, Russia and much more recently in the United States) have shown a remarkable capacity to adapt themselves to new conditions and to accept new ideas, a strong driving force and restless energy being their own invaluable contribution.

The Germans at a late date evolved some effective and picturesque steeples from forms suggested by the onion domes of Tatory, which obviously were introduced via Russia.

Thus we see eastern influences of many different kinds penetrating far into the very heart of western Christendom. The really significant fact is, however, the universal triumph of Gothic during the thirteenth century, and that not from the shutting off of intercourse¹ with the east but by reason of its own tremendous vitality. Gothic and Gothic alone satisfied the religious aspirations of our mediaeval fathers. It was a democratic, communal form of building, largely independent of the very costly materials that are essential if Byzantine is really to be at its best, and owing its beauty to a greater extent perhaps than any other style to the skill of every worker whether in stone or wood. A great Gothic church required that the whole community be deeply interested in carrying out the work. In comparison with its tremendous vital force Byzantine work can hardly be said to live at all. That was most emphatically a royal style, demanding as architect a master mind and preferably the resources of an empire at his back.

It is noteworthy that in Spain and Portugal also, Gothic triumphed over oriental influences of a very different kind from those considered above. Moslem Spain was of course

¹ It was during the days of complete Gothic supremacy that the establishment of the Mongol empire made it possible for Italian merchants not only to find their way to the near east, but to penetrate safely

overland into China. Other points of contact with the east were through the Teutonic knights on the Baltic and the Moorish kingdoms of Spain.

an architectural province of the Saracenic style. Christian Spain developed a remarkable variety of Gothic.

When Brunelleschi reared his glorious dome above the Gothic cathedral of Florence a new era was born. The architecture of the renaissance may be said to have commenced its momentous career. The new interest in every side of life that heralded the revival of learning was avowedly inspired by the rich heirlooms of the culture of Constantinople. The capture of the city by the Turks was a chief cause of the westward flow of the accumulated wisdom of centuries which it had sheltered.

Thus it was only natural that, with so much else from the east, its architectural forms and particularly the dome were imported into the buildings of the church of the west. At eastern plans, however, the new movement stopped short. The high artistic fervour of the renaissance scorned as barbaric the ancient art of Byzantium. Even the eastern church plans were largely discarded before long. Strzygowski claims St. Peter's as an essentially Armenian design; no one could say anything of the kind about St. Paul's, and about St. Isaac's¹ still less.

For the first time in all history, however, the renaissance made the essentially oriental dome as much in place dominating the business offices of the west as for centuries it had been at home rising over the bazaars of the east.

Even so, nevertheless, Gothic stubbornly refused to die. In England Bath abbey was slowly rising, the last great monument of the twilight of mediaeval art, through all the storms of the renaissance and the reformation, to be consecrated at last in the seventeenth century. When in the French capital Classical forms could no longer be rejected, the church of St. Eustache insisted upon displaying them in an airy Gothic setting, while late in the seventeenth century a vast, though soul-less, Gothic cathedral was raised at Orleans. Even in the extremely classically minded eighteenth century Gothic persisted, here and there, to undergo a striking renewal with the romantic revival of the nineteenth, in our own days at Liverpool to be developed along quite new lines, disdaining

¹ This important example of the very latest forms assumed by the architecture of the renaissance stands indeed upon eastern

soil but, erected by a French architect, it is purely western in character.

any longer merely to reproduce once again the actual forms of mediaeval years.

The very soil of western Europe seems stubbornly to refuse permanent hospitality to the architecture of the east.

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The above was already in page proof when C. Diehl presented his report on the same subject to the historical congress at Oslo in August, 1928, so that I have been unfortunately unable to avail myself of this portion of his work. In opposition to Rivoira he is strongly in favour of an extensive oriental influence in the architecture of western Europe, as indeed might be inferred from the passages quoted on pp. 54, 61.

[A very brief discussion of the same subject, by J. Park Harrison, will be found in *Archaeological Journal*, Vol. LVI (second series vi), pp. 216-220.]