

Church at the foot of Lycobettis, near Athens.
From a drawing by Miss Petit.

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REMARKS ON MEDIÆVAL ARCHITECTURE IN THE EAST.

By the Rev. JOHN LOUIS PETIT, M.A., F.S.A.*

A SHORT tour in the East, even if it comprises but a few of the places and objects usually visited by travellers, and is not extended beyond the regular beaten track, may yet, I think, enable us to form general ideas, not very far from correct. And I will at once premise, that the remarks I am about to make are the result of a very limited sphere of observation; that I have only visited buildings to which any traveller may have easy access, and not a very great number of these; and in all cases my examination has been of a very cursory nature. I say this to prevent any general observations I may make from being taken at more than their worth.

I intend in my present observations to notice the points of difference between western and eastern mediæval architecture, and hope on a future occasion to advert to their points of resemblance.

In speaking of eastern architecture I shall not consider myself as confined exclusively to Mahometan architecture; for, although the spread of the Mahometan religion must have affected the style, I question if it made it essentially different from what it would have been had such religion never been introduced. Perhaps we may attribute to it the prevalence of geometrical patterns in surface ornament; and that graceful feature, the minaret, owes its existence to the requirements of Mahometanism; but on the whole I am inclined to look at the Mahometan architecture of the East

* The Central Committee acknowledge with gratification the renewed kindness and liberality of the author in presenting the numerous illustrations of this memoir, chiefly executed from his own drawings.

rather as a phase of the general Oriental style, derived from or related to the Byzantine, than as a separate style in itself.

We cannot but be struck with the fact, that during the period of the development of church architecture, and its maturity, in Western Europe, the dome was very rarely exhibited as an external feature. Where it was employed as a roof to part of the church internally (a practice common in Romanesque work, but much less so in the more advanced Gothic), it was generally, if not universally, concealed, altogether, or in part; sometimes by a square tower, sometimes an octagon, having a timber roof, covered with tiles, slates, or lead. Even in Aquitaine, where many churches are altogether roofed with domes, the external appearance of the building does not differ in any way from those which have vaulted or timber roofs; we know nothing of their construction till we see the interior. Now in the East the dome shows itself externally, and in such a manner as to be the predominant feature. Sometimes indeed it is only plaster, but in many cases it is of hard brick, covered with cement, and beautifully ornamented: many such, belonging to ruined or deserted mosques, are still perfect. They are evidently designed with great care, and are extremely graceful and elegant in their form.

But it has also struck me that a curvilinear or polygonal ground plan is much more rare and exceptional in the East than the West; and although the European round churches may be derived from the Church of the Sepulchre at Jerusalem, I suspect that neither the church which occupied the site of the present rotunda enclosing the sepulchre, nor the mosque of Omar, or dome of the rock, the outer plan of which is octagonal, is by any means a typical form of Eastern architecture. It may be, however, that this prevalence of the rectangular, and rarity of the curvilinear, or polygonal ground plan, is rather Mahometan than Christian, for the church at Bethlehem has apsidal transepts and choir; and the internal apse is to be seen in conventual churches both in Egypt and Syria, though sometimes disguised externally.

Several of the mosques in Cairo have irregularities of plan, which may be attributed to the nature of the site, by which obtuse or acute angles may be introduced, as in the magni-

MEDIEVAL ARCHITECTURE IN THE EAST.



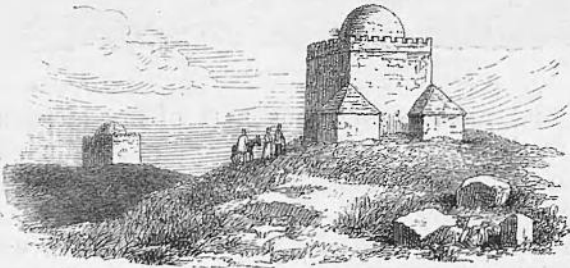
At Wady Tafa.



On the Nile.

ificent porch of the mosque of Sultan Hassan, which stands obliquely to the rest of the building ; but setting aside such occasional deviations, I think it will be found that the plans in general externally are rectilinear, and present only right angles. I say externally, for the small recess in the wall, showing the direction of Mecca, is, I believe, mostly semi-circular. I should add that the small building over the well, which commonly occupies the centre of the open court of the mosque, is in some cases octagonal.

The tombs of the Mahometans, or rather, I should say, the chapels or coverings over their tombs, seem universally



Near Tangier.

to be square in their plan, and covered with a circular dome. I do not remember to have seen any that were circular in plan, like several in Italy, or polygonal, like that existing in Ravenna. Such square tombs, covered with circular domes, appear at Tangier, all through Egypt and Nubia, about Jerusalem and Damascus, and, I have no doubt, through large tracts of country. They vary in size from six or seven feet square, to structures equal to the largest mosques. Some have no



At Wady Tafa.

more ornament than a limekiln or furnace ; some are enriched with the most intricate and elaborate ornaments ; some are pierced on each of their four sides with arches, round or pointed ; others have only a single entrance.

They may stand alone, or in groups in cemeteries ; they may have chapels or chambers attached to them ; or may form the



Near Assuan.

principal and most conspicuous part of fine mosques ; but all agree in their construction—the square building, covered by a dome resting on pendentives.

Whatever country may claim the invention of the dome, I suppose it would not be easy to point to earlier examples of an established date than some in Europe. But these are supported by substructures of the same plan, or polygonal, resting on the ground, as in the Pantheon, or on arcades or colonnades, taking a ground plan of the same form ; as S. Costanza and S. Stefano, in Rome. I should question whether at the period of these buildings the pendentive was used in Western Europe. I have a sketch of part of the baths of Caracalla, in which a semidome appears over a large arch ; but I cannot ascertain whether the spandrels take the form of pendentives, or the arch is one of double curvature. If I rightly understand a cut given in Mr. Fergusson's chapter on Sassanian architecture, the Romanesque pendentive, or arch thrown over the angle of the square, must have appeared in the East before it was used in Europe, or at least earlier than any known example. The constructive elements of Byzantine architecture must have been in great measure derived from the East ; or why should the Roman style, in its change to the Mediæval, have taken so different a form in the East from that of the West ? The most striking, and the earliest example of the Byzantine pendentive we know (namely, the pendentive formed by part of a dome larger

than that it helps to support), is, I suppose, S. Sophia; though doubtless the experiment must have been previously tried on a smaller scale, and it is possible that some earlier examples still exist.

Though I have nothing new to say on the Byzantine style, it may not be amiss to notice a few specimens, since it may be considered as a connecting link between the Western and Eastern styles; and I shall dwell more upon composition and general effect than on detail, which, as well as pictorial decoration, has been efficiently handled by others.

When I was in Constantinople I visited some of the old churches, now turned into mosques; but I fear that my guide (a Greek) was not at home in their old names, so that I cannot here designate them correctly. It was

nearly a week before he found out for me the Theotokos (of which an elevation is given in Mr. Fergusson's chapter on the Byzantine style), having taken me into several other buildings to which he gave that name. The mosque, of which I give a cut, is that evidently which in Mr. Fergusson's chapter (B. x. c. 1) is given as Moné tes Koras; but my guide pointed out to me another old church, or rather group of churches, of similar character, under this



In Constantinople.

name. If he was right, that I have given must be the Pantocrator. Both are groups of three churches, standing side by side, and contiguous. In this group the predominating dome is that of the central church; in the other the southernmost church is the largest and has the highest dome. I believe the whole group forms a single mosque in each case. There is another fine group of three

churches, a little eastward of that of which I have given the sketch. All its churches are crowned with domes, that of the central one being predominant. The Theotokos is a single church with a central dome, and three smaller domes over the narthex or western porch. S. Irene, now the magazine of arms, is a single church, with a large central dome, and one of less height over the nave. Any one of these gives more of a typical form than S. Sophia, though the latter is suggestive of excellent plans for churches. It has been taken as a model for the larger mosques in Constantinople, which consequently differ considerably from those in other parts of the East. The specimen I have given is a fair type of its class. All the domes are adapted to square substructures or areas by means of pendentives; they have internally a circular horizontal section, though externally they exhibit an upright polygonal stage, which partly, but not wholly, disguises the domical form. In Western Europe, as it has been observed, the dome, where it occurs, is entirely concealed. In the Byzantine style it is partially exhibited; in the Mahometan style it is wholly developed. It will be noticed that in some of these domes each face of the polygonal drum terminates in a semicircle, and is thus adapted to a round-headed window. If a hemispherical dome, resting on a cylindrical drum, be cut into faces by vertical planes, it is evident that each will assume this form; and the round-headed windows with which they are pierced need not have any double curvature within, though the domical and cylindrical forms are preserved internally. We also noticed the cylindrical roof, showing itself externally, and the gable adapting itself to its form. It did not strike me as any disfigurement.

The small Byzantine churches in and about Athens may on many accounts be studied more conveniently than those of Constantinople, and perhaps from no others can we better learn the definite characteristics of the style. A sufficient number as yet remain without material alterations, to enable us to classify them in a tolerably simple and intelligible manner.

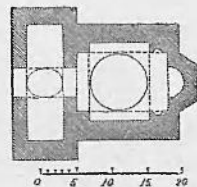
A small church on the ascent of Mount Pentelicus has a central dome, appearing outwardly as an octagon somewhat tapering, with a low pointed roof. This dome is supported by four round arches, deep enough to form barrel vaults to

short limbs corresponding to nave, chancel, and transepts. These latter appear externally on what may be called the



Church on Mount Pentelicus.

clerestory stage, as does also the square base below the octagon. But the ground plan is square, and the parts filling up the angles of the cross, corresponding as it were to aisles, are solid masses of masonry, having only small niches or recesses. The chancel has a projecting apse, semicircular inside, but angular externally, having three faces, two of them springing obliquely from the eastern wall, a common arrangement in Byzantine churches, though the circular form is often preserved externally as well as internally. Westward is the narthex, a porch or ante-chamber which we find in most, if not all, Greek churches. In this case it is roofed with a dome which does not appear externally. I do not suppose any timber is used between the outer tiling and the surface of the domes or vaults. They are probably adapted to each other merely by plaster. Probably many small churches of this design have been built; there are the remains of one at a short distance from Athens on the road towards Mount Pentelicus, which may be described in nearly the same words. This latter specimen, though in ruins, has remains of painting, which seems to have been the only decoration.



Plan of Church on Mount Pentelicus.

But, when the church was somewhat larger, the blocks

which fill up the angles of the cross, and form a square ground-plan, were not left mere solid masses, but were pierced with arches, resting on square substantial piers. This is the case with a small church about seven or eight



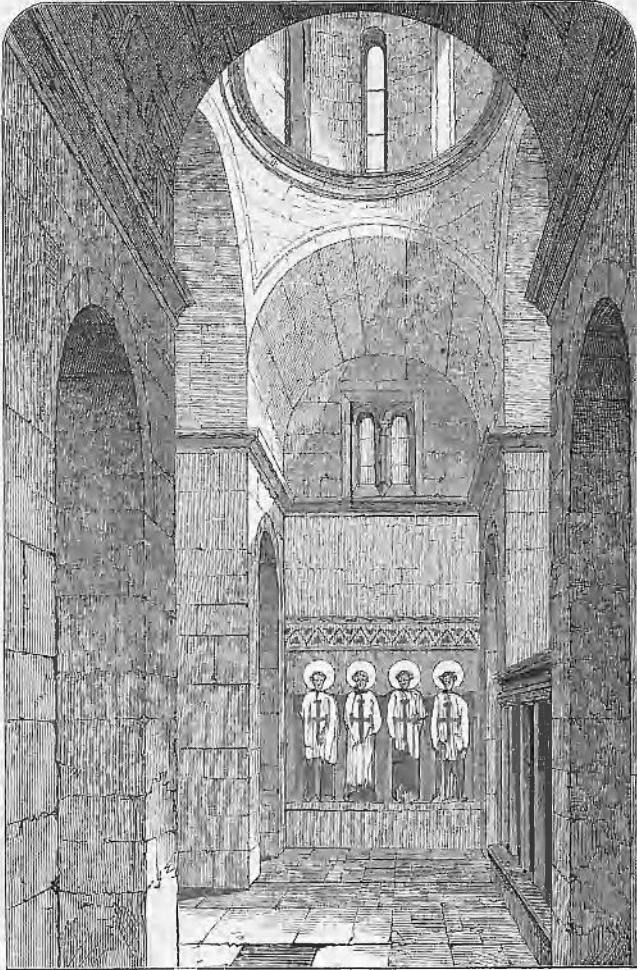
Near Athens.

miles north of Athens, of which I give a representation. It will be observed that the limbs of the cross are rather longer in proportion to the tower or octagon than in the small church I have mentioned, and consequently solid masses in the angles would have involved a great waste of material; they are therefore pierced with arches, and form aisles. I should mention that this is a double church, though with only one dome. The plan I have given of a church in Corfu will show this way of filling up the angles at the east end.

But this mass was still further lightened, the solid pier by which its arches were supported being exchanged for a comparatively slender column, often taken from a more ancient building, so that the area of the church is practically increased by the four squares thus added to the cruciform part, the pillars themselves not much breaking the interior.

The western piers in the church in Corfu are so treated as seen in the plan. This church is a very good specimen of Byzantine arrangement, and has not, I think, been materially altered. I give a cut of the east window, and also of that of a small church on an insular rock near the One Gun Battery, as showing some peculiarity of detail. A church at the foot

MEDIAEVAL ARCHITECTURE IN THE EAST.

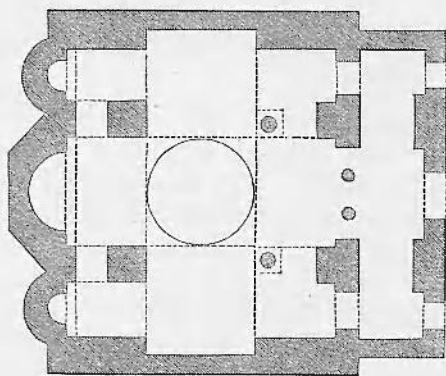


Interior of a Church near Athens.

MEDIÆVAL ARCHITECTURE IN THE EAST.



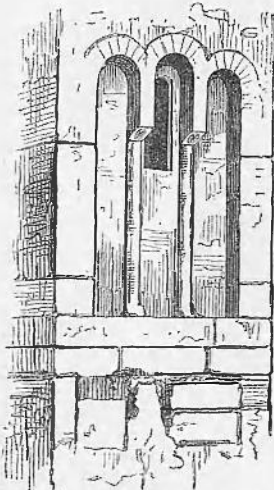
Church in Corfu.



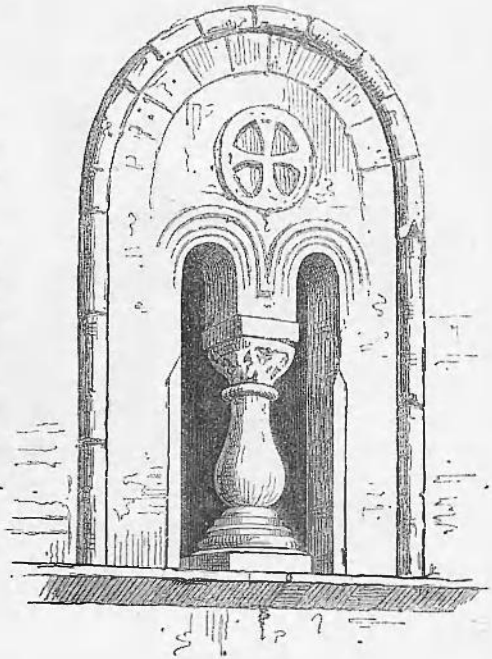
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Ground Plan.

of Lycobettis, near Athens, is a good example, having four not very massive columns under the dome, as will be seen in the woodcut. (See Frontispiece.) A small church just below



East window of the church in
Corfu.



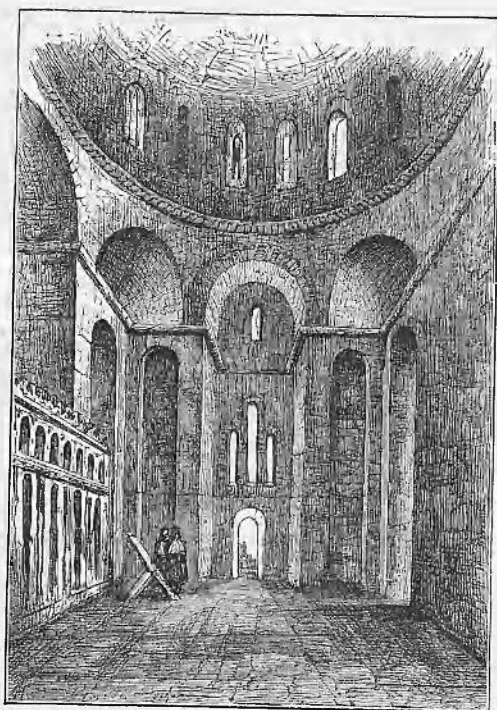
East window of church of a Monastery on an island
near Corfu.

the Acropolis is so arranged, and there is a good specimen on Mount Hymettus, which is the more remarkable as the columns are not monolithic, but composed of several layers, and yet the building, though deserted and neglected, seems perfectly firm. In the western angles of the church in Corfu the pillars are single pieces of marble. In all these churches we have the central dome attached by Byzantine pendentives to four barrel roofs; the section at the clerestory is cruciform; the ground plan is square (setting aside the apses and narthex), and the portion which fills up the angle varies from a square solid mass to an open structure, roofed by a vault or dome, and resting on a single column. The round arch, if I remember, prevails throughout. It is used in the church of S. Theodore, which belongs to the thirteenth century. The sides of the

MEDIAEVAL ARCHITECTURE IN THE EAST.



Daphni.



Interior view, Daphni.

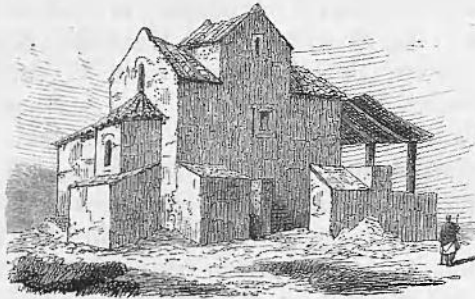
octagon are frequently, though not universally, finished with the semicircle, like those we have noticed in Constantinople, and in this case the domical shape of the roof is preserved.

The arrangement of a dome or vault rising above four columns, not too massive to preserve classical proportions, has been adopted by modern architects. We find it in the church on Ludgate Hill, London, and in that of All Saints, Northampton. The more massive treatment of the pier is common in churches of the Revival, especially in Italy.

But there is another form, which suggests such compositions as S. Paul's and S. Stephen's, Walbrook, where the central dome has a span equal to the nave and aisles of the church. The church used by the Russians in Athens, is a specimen. An elevation of it is given in Mr. Fergusson's Handbook; but it has been much restored; and the church at Daphni, a few miles from Athens on the road to Eleusis, is more attractive, from the beauty of its situation and the air of antiquity it has been allowed to retain; and, in an architectural point of view, it will answer our purpose quite as well. Internally, the ground-plan (exclusive of narthex and apses) is a square, from which branch off chancel and transepts of the width of the side of a regular octagon, that would be formed within the square by cutting off the angles. These limbs have an arched barrel roof; and arches of the same height and size are thrown obliquely across the angles, so as to form Romanesque pendentives, and are brought down to the level of their springs by concave domical surfaces; over these eight arches a dome rests on Byzantine pendentives, its spring being marked by a bold cornice. The western arch is blocked up, and the entrance into the narthex is by a lower one. The general ground-plan is made square by means of chambers or chapels, which, however, do not open into the church so as to increase its available area. The dome is partially disguised, as to outward appearance, by a polygon of sixteen sides, alternately pierced for windows, and each angle has an engaged shaft; over the north transept is a square belfry. The round arch prevails in the church; there are some triplets on shafts with heavy capitals; the arches being much stilted. The narthex has some pointed arches of an Early English character. There are remains of mosaic painting in the dome. Indeed all buildings of a Byzantine arrangement are specially adapted for mosaics and

mural paintings, owing to their large amount of unbroken surface, and the smallness of the spaces necessarily devoted to architectural ornament.

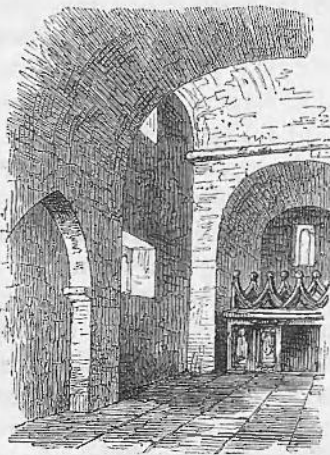
I will not quit Athens without noticing a little church on the road to the Piræus, which, from its not being domical, I



In Athens.

fancy may be older than those I have mentioned. It has a nave, a central tower, if it can be so called, and a chancel with

an apse. The roofs are round barrel vaults; those of the nave and chancel having the axis longitudinal, that of the tower transverse. The tower has gables facing north and south, and these sides have a much less thickness of wall than those of the nave and chancel (these latter having to act as abutments to vaults), and the surface being flush outside, there is a small indication of transepts internally. A blank pointed arch is also sunk into each wall of the nave; all the other arches are round, and there is no ornament.



Interior of a church at Athens.

The door is square-headed.

There is another church of the same form on the rising ground towards Mount Hymettus; this is a little more enriched, as it has columns, apparently antique, under the

angles formed by the thickening of the walls. Another of this description stands on a low insular rock in one of the bays indenting the coast of Corfu ; this has internal piers to support the transverse arch : on the gable of the tower is a small bell-turret. Simple and unpretending as these churches are, I cannot but think that there are localities where their form might be adopted with advantage.

We will now go at once into Mahometan ground, though I shall still have to notice some Christian work. In all the examples we have considered, the central dome, and the square on which it stands, receive much of their support from the abutment of the portions of the building connected with them. In most of the Mahometan mosques of mediæval date, unless they are clearly copied from Christian models, as at Constantinople, the dome owes its support altogether to its square substructure, which rests on the ground, and not on arches, having for their abutment the walls of a cruciform building. The construction is that of the square tombs we have mentioned, which are covered by domes. Indeed the domes of mosques are often built over tombs. The larger tombs in and about Cairo are in fact mosques, or parts of mosques. They may stand at the side, or at an angle, or at the end of a building. It is common for the mosque to have a dome at one end and a minaret at the other, the structure itself being rectangular, like a Christian church. In Cairo, the shape is often very irregular, owing to the nature of the ground. But in the matter of construction, I believe the dome is usually independent of the building attached to its square substructure, even when the latter is pierced with large arches. The walls of the square are consequently of great thickness, considerably greater than the dome, or circular or polygonal drum on which it rests, which gives a tapering or pyramidal appearance to the composition, pleasing to the eye, and suggestive of strength and durability.

The pendentives, in rich buildings, often consist internally of a somewhat complicated series of small arches. I do not think these are always mere disguises or decorations of the simple Byzantine or Romanesque pendentives ; what I saw in Cairo appeared, so far as I could judge, to be really constructive, though, of course, designed also with a view to ornament. I regret that I could not succeed in making an intel-

ligible drawing of one (by no means the most intricate) that I attempted to sketch in one of the so-called tombs of the Caliphs. My patience gave way before I could master its arrangement, and I fear, from their position, they are almost inaccessible to photography, which is invaluable in giving the delicate geometric patterns on the outside, as well as the fine tabernacle work under the galleries of the minarets.

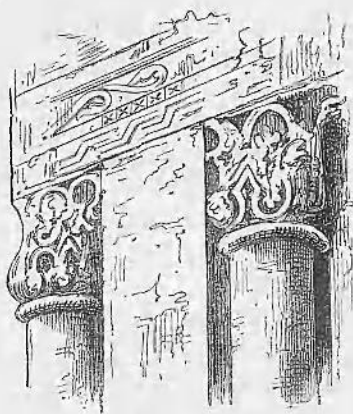
The construction of the pendentive is often more definitely indicated externally than in western architecture. The cardinal faces exhibit a kind of truncated gable in steps, which mark the several receding arches or stages of the pendentive within. Sometimes these steps are left plain and square, but sometimes a bold moulding is carried along each stage or edge of the pendentive, which, showing itself at its junction with the cardinal face or gable, gives it something of the form of our Jacobean gables, over which it has this advantage, that the form is not fanciful or unmeaning, but indicates the actual construction. I may remark, however, that the mouldings of the pendentive are more suited to a climate where rain is almost unknown, than to ours. By



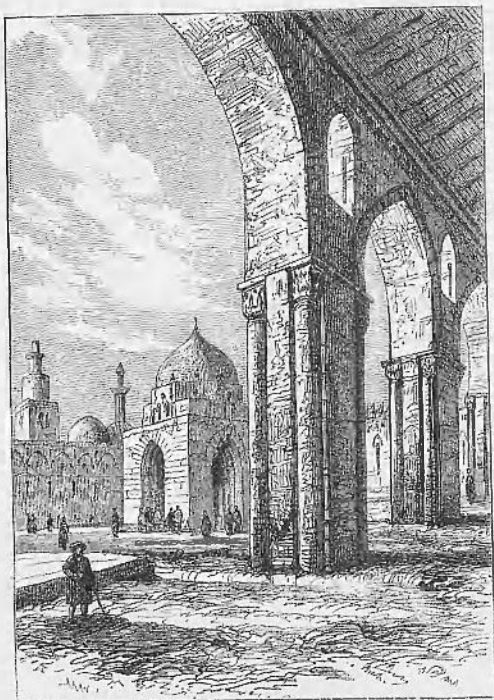
Tombs of the Caliphs (so called), Cairo.

these pendentives an octagonal platform is formed, from which rises the circular drum and dome; not occupying a circle of its full diameter, but somewhat smaller, and pierced with windows. In some cases the platform is a polygon of

MEDIAEVAL ARCHITECTURE IN THE EAST.



From Tayloun Mosque, Cairo.



Tayloun Mosque, Cairo.

sixteen sides ; two mosques near that of Sultan Hassan are of this description.

A group of narrow windows and circles is often introduced in this gable, giving the idea of Gothic tracery ; but as the material is not reduced to thin mullions and tracery bars, the work is of a more durable nature. The lights are usually round-headed in what appear to be the earlier examples, which, however, run nearly through the fifteenth century. The later arches are pointed, and have something of the Tudor form ; a kind of foliated label, adapting itself to the form of the group, runs round it. The dome is perfectly developed, and often has a very beautiful outline. The example of which I give a cut, is a fair specimen of those about Cairo. I did not see the interior ; I believe that the building is now a powder magazine. It is near the tomb or mosque (now disused, and therefore easily accessible) of Sultan Barkook, which is perhaps the finest of the group. This contains a large court ; at two of the angles of this space are fine spacious domes, flanking a symmetrical front, which has a small cupola in the middle. The front towards the city has two fine minarets. A section of this mosque is given in Mr. Fergusson's Handbook.

There seems no doubt that the pointed arch was used in the East long before it became prevalent in European architecture. But, if the Tayloun Mosque in Cairo was built by a Christian architect,¹ it is probable that it was also employed at that period (ninth century) in Christian architecture ; unless, indeed, the form, and that of the horse-shoe, was adopted as a difference from the Christian style. In Cairo the horse-shoe arch is very graceful ; in Spain it is sometimes rather exaggerated. Much as I am struck with Cordova, I cannot altogether admire some of the forms that its arches assume.

Though mullions and tracery are not used, the pierced screens which are occasionally inserted in the windows have rich and complicated patterns that more than compensate for their deficiency. Coloured glass is frequently introduced in the openings.

The great distinction between Eastern and Western architecture seems to be, in the one, predominance of surface

¹ Fergusson's Handbook of Architecture, vol. 1, p. 389.

over line, in the other, of line over surface. The tendency of the Gothic is to reduce a building to a great framework of bars, ribs, and buttresses, the flat walls being mere screens, in no way necessary to construction. This principle is almost carried to excess in some specimens of the Flamboyant and Perpendicular. The Eastern, on the contrary, presents us with larger unbroken masses, rarely diversified with buttresses, and not much dependent for effect upon openings. Though the fine mosque of Sultan Hassan, the grandest building in Cairo, is not without windows, they really tell for very little; the whole has almost the effect of the vast blank walls of the old Egyptian temples. Its only important opening is its grand lofty doorway, than which it would be difficult to find anything more impressive in the whole range of mediæval architecture. Most of the mosques in Cairo have this feature, and the same general character prevails in all. It is a tall niche or recess, nearly the full height of the building, forming a trefoil arch; the whole being enriched with elaborate shrine-work. The door itself is not higher or larger than convenience requires. I should notice that in Cairo we often see, in domestic architecture, round-headed doors much resembling those of our Norman style, and ornamented with the chevron. They are not, however, deeply recessed, and have no great air of antiquity, though they may be of a mediæval date.

What I have said of the tendency to large unbroken surfaces, rather than to the expression produced by strongly marked lines, does not apply to minarets, which though called into existence by purely Mahometan exigencies, are nevertheless very Gothic in their spirit and character. I may have something to say of these hereafter.

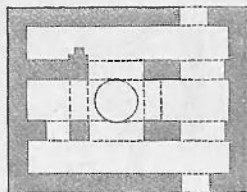
It is because the Mahometan dome is usually independent of any abutment beyond the weight and thickness of its square substructure, that I am inclined to refer to a Christian origin two small buildings in Nubia which are usually pointed to as Sheiks' tombs. One is near Ibream, on the eastern side of the Nile, between Derr and Abou Simbel. It stands on rough rocky ground, and could not have had any conventual buildings connected with it; so far the chances are in favour of its being what it is called. It is a very small rectangular building, mostly of unbaked brick, on a

basement of rough stone. In the centre is a dome resting on four arches, of which the eastern and western are of nearly the full span of the square under the dome. The



Sheikh's Tomb or Church at Ibream.

piers are, at present, not connected by arches with the sides of the building, but they possibly may have been. The dome is not in the best condition, and its windows have quite lost their form, and the other roofs (doubtless of a similar material) have perished. The east end is flat, but has had a semidomical roof adapted by Romanesque pendentives. The nave has only one bay, opening into the aisle on each side by an arch. It appears to have been domed. The building is as plain as it can be, and the arches round, consequently it might be of any date. The whole thing is too small and insignificant to attract notice, and most travellers that might happen to stop at the point would examine the neighbouring fortress of Ibream; but I do not regret having given my attention to this little tomb or chapel, whichever it may be. When it had its roofs, the general outline might have been more varied.²



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Plan of Church at Ibream,
Nubia.

² I should mention that my ground-plans were taken roughly and hastily, and in all probability have many inaccuracies,

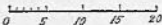
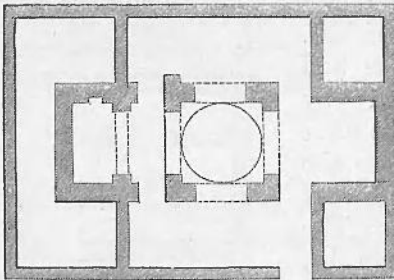
but I hope they are not such as seriously to mislead the reader.

The other specimen is north of Saboua, on the west bank of the Nile. It stands on a steep cliff, rising nearly from the edge of the river. It is very like the building I have already described, but a little larger; and there are remains adjoining it which may have been conventual. It has a central dome resting on wide transverse arches, of unbaked brick. I see in my notes that I have mentioned a piscina, as being in the usual place. I do not recollect its appearance; but if I am right, I suppose



Tomb or Church near Saboua.

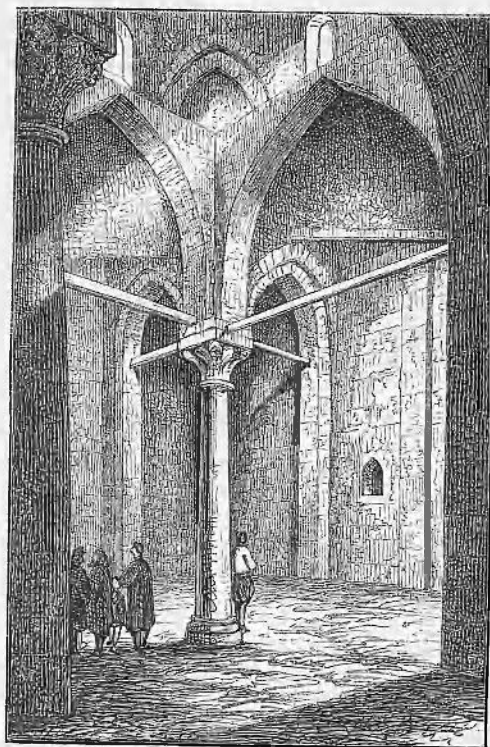
that we may conclude this to have been a Christian church. There are remains of several convents along the course of the river, but I did not land to visit them, as those within sight did not appear to possess any remarkable features.



Plan of the above.

Between Thebes and Cairo I saw three convents, of which the churches had been enlarged or rebuilt, with a central dome, surrounded by smaller domes or semidomes. The Coptic convent on Gebel e Tayr has an eastern apse roofed with brick, but its central dome is only of mud, resting on wooden beams. There is some old work in the interior. Another convent near Beni-Souef has a good church with domes, which does not yet seem to have been touched by the hand of the restorer. The interior has much of the Byzantine character, but the pendentives are Romanesque. The arches are pointed. The columns under the dome are of classical proportion, and have rich Corinthianising capitals. Four semidomes abut

MEDIAEVAL ARCHITECTURE IN THE EAST.

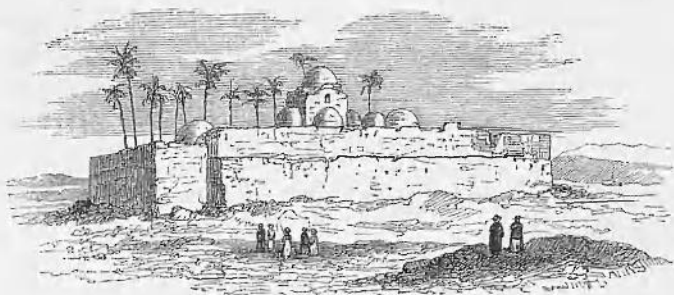


Inside of Coptic Convent, Menoude.



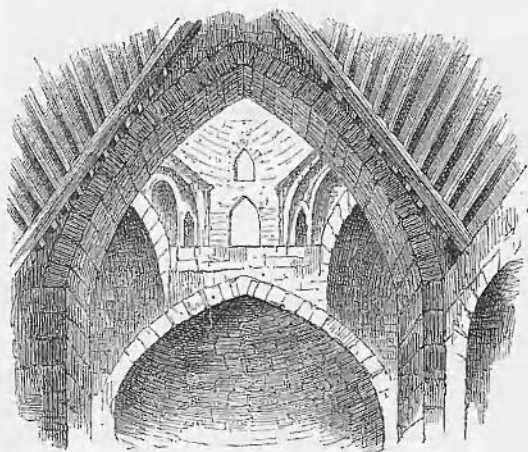
Convent in Old Cairo.

against the low square tower which forms the base of the central dome; but I think the external ground-plan is rectangular. I could not ascertain this, however, at all clearly, on account of the adjacent buildings.



Coptic Convent, Menoude.

Near the ancient mosque of Amer in Old Cairo is a walled village containing two conventual churches, with domes, and apsidal chancels and transepts. The naves are long, like those of European churches, and have wooden roofs. The



Inside of Dome in Old Cairo.

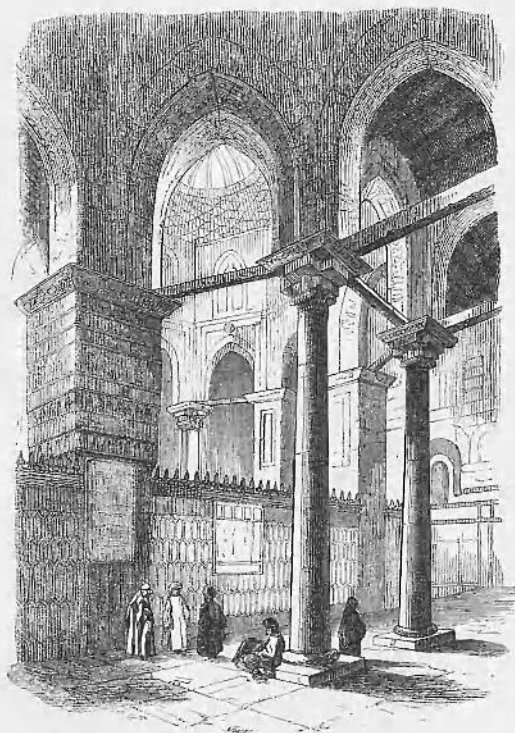
pointed arch is used. In the largest of these churches the square part under the dome is not so wide as the apse, consequently the transept arch springs from the haunch of the eastern apsidal arch. The cut that I have given will explain

what I mean. In all these conventual churches the dome, though very plain, is quite as prominent an external feature as in the mosques.

I must again repeat, that my remarks are the result of very limited and imperfect observations; and, therefore, where I have laid down any general proposition, it must be understood that there are probably many exceptions. Some exceptional buildings I hope to notice hereafter, and also to give instances of the influence of Western architecture on the Eastern styles.

(To be continued.)

MEDIEVAL ARCHITECTURE IN THE EAST.



The Mosque or Tomb of Sultan Kalaoun in Cairo.

The Archaeological Journal.

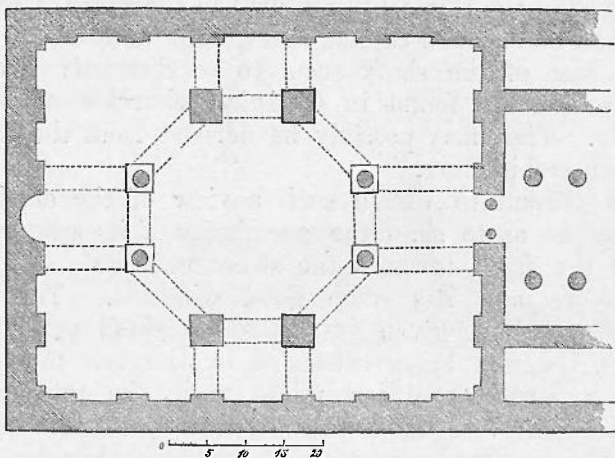
DECEMBER, 1866.

REMARKS ON MEDIÆVAL ARCHITECTURE IN THE EAST.¹

Part II.

By the Rev. JOHN LOUIS PETIT, M.A., F.S.A.

THE mosque or tomb of Sultan Kalaoun in Cairo differs in construction from all others in that city. Its ground plan is a square of about 75 feet, internally. In the centre rises an octagon on arches supported by four massive square piers, and four columns, which are connected by arches with



Ground-plan, Mosque of Sultan Kalaoun, Cairo.

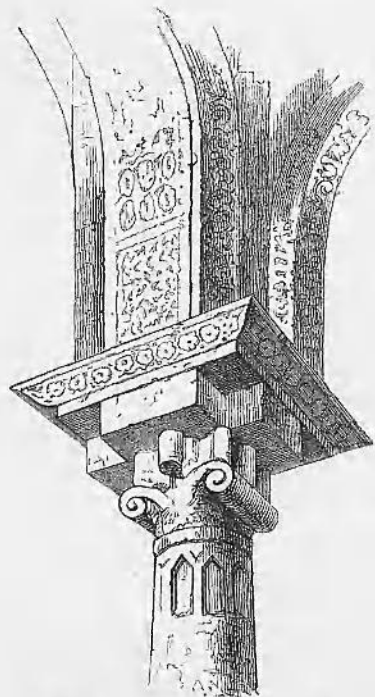
the sides of the building in such manner as to form a good system of abutment, the outer walls being sufficiently thick and lofty to maintain the equilibrium. Their thickness is about six feet ; the roofing is of timber. As will be seen by the ground-plan, a nave or vestibule is attached to one

¹ Continued from p. 20, *ante*.

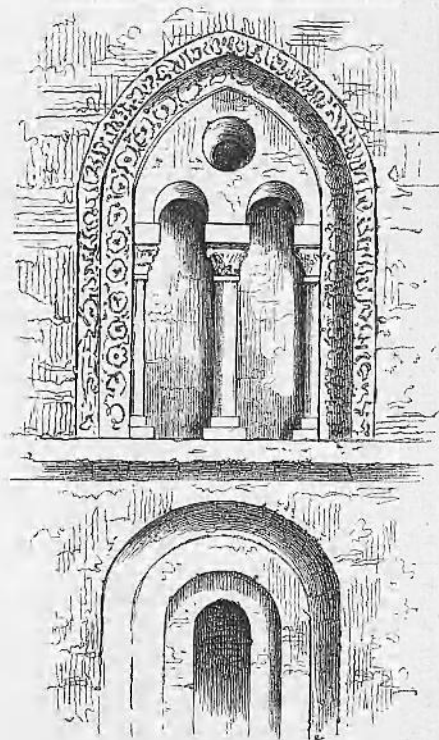
side, but it does not equal the main building in the height of its roof. A fine tower or minaret also joins it, which I have not given in my plan. The columns are, I think, of granite, or some very hard stone. The wide abacus on the top is of wood, and the springs of the arches are connected by beams of timber. When I say the springs of the arches, I mean the points where they rest on the piers and columns, for the real spring is much higher, the arches being stilted, and having a horse-shoe form. They are pointed, and have a wide soffit between bold hollows, all enriched with some kind of pattern, at once delicate and effective. The light comes through the windows of the octagon, but in the principal walls are blank windows of two round arches on a shaft with a circle above, and a pointed arch, much enriched, comprising the whole. The jamb of the comprising arch has a bold hollow. I have given a cut of one of these arches, showing where the ornament is applied, but with no attempt to make out its detail. I think we cannot fail to remark the great similarity between the Saracenic style, as exhibited in this building, and the Gothic of the same period (the latter part of the thirteenth century) in the south of Europe. A kind of bud-shaped capital, and a large bulbous convexity at the base of the shaft, seem to be distinctive Oriental features, and are found in Christian churches as well as mosques. They may possibly be derived from the ancient Egyptian architecture.

It is difficult to obtain such a view of the outside of this mosque as to show the peculiarity of its composition, though the front towards the street exhibits its style of architecture, and has some good windows. The street view that I have given just shows a small part of the octagon, the rest being concealed by the fine minaret or tower, a structure which might easily be taken for a Christian belfry. I have selected this point of view to enable the tourist to recognise the building while he passes through the streets. It is very near the Turkish bazaar, almost opposite to which is the narrow passage that leads to its entrance. My guide procured me admittance without difficulty, and I was allowed to remain as long as I pleased for the purpose of sketching and examining the building. My ground-plan was taken in a very rough manner, as I only measured the distances by stepping, but it is sufficient

MEDÆVAL ARCHITECTURE IN THE EAST.



Mosque of the Sultan Kalaoun, Cairo.
Capital of column, central octagon.



Mosque of the Sultan Kalaoun, Cairo.
Arch and blank window, principal walls.

to give an idea both of the arrangement and actual size. The space between the four square piers is closed in by screens, and contains the tomb. I do not know if this interesting mosque has met with the attention it deserves ; a series of illustrations would, I am sure, be valuable. I also give the only other view I could obtain, showing the central octagon ; it is taken from a court in which is a pool or bath used for ablutions ; the covering over this is seen in the sketch.

The date of this mosque is the end of the thirteenth century. Any one conversant with Gothic would be inclined to place it near the beginning of that century. But it is evident that we are not to look in the East for those rapid and decided changes of style which are characteristic of Western mediæval architecture ; indeed the style seems to have preserved its mediæval character to very modern times, and this not by imitations and attempted revivals, but by the steady and continued adherence to old forms and principles. The pointed arch is used in Syria up to the present day, I believe, just as it might have been in the middle ages, and without any incongruity. Jaffa gives one the idea of a town of the fourteenth or fifteenth century, but I suppose it has as much modern work in comparison with the ancient as many towns not remarkable for antiquity. At Beyrout an arcade of pointed arches on slender columns is the common feature, and, notwithstanding its mediæval air, appears to indicate the style of the day, as though it had remained unaltered for centuries. And the Christian conventual churches, which I have noticed as having been rebuilt, on the banks of the Nile, are in perfect keeping both with the old and modern work, retaining the mediæval character, as it were, naturally, and without choice or effort.

Yet, by the help of buildings whose dates are known, I believe it would be possible for a student of the mosque architecture of Cairo to form a reasonable conjecture as to the age of buildings with whose history he is not acquainted. There is a dome in the suburb north of Cairo to which, from the shafts at the edges of the jambs in the window arches, I should give a date corresponding with our Early English, and rather earlier than the Kalaoun. I do not know the name nor the history of the mosque ; it appears neglected, if not disused. The beautiful mosque of Sultan Hassan is known to belong to the fourteenth century ; and though

MEDIAEVAL ARCHITECTURE IN THE EAST.



View taken from the Street.



View from an adjoining Court.

The Mosque or Tomb of the Sultan Kalakouin, Cairo.

there is hardly a portion of detail analogous to that of our Decorated, yet its combination of grandeur and refined



Dome of a Mosque in the suburb of Cairo.

elegance and delicacy of work points out its affinity to that phase of mediæval architecture. Mr. Fergusson has described this mosque in his handbook, and given a plan and



Mosque of Sultan Hassan, Cairo.

section. The cut I give shows its general outline ; and part of a mosque, apparently of nearly the same date, is introduced in the sketch. If I had extended my picture a little

farther to the right, I should have brought in another mosque of the same character as the last, with a beautifully enriched dome, and a minaret crowned with two cupolas. The cornice of the mosque of Sultan Hassan is almost unique ; it is wide, and of a very bold projection, and enriched with minute and delicate arches on brackets or corbels. The minaret is octagonal, but the compartment above the roof is square ; below this, however, it becomes polygonal, rising from the ground in this form, thus differing from the usual plan. The supports of the galleries, and indeed all the ornaments of both the large and the small minaret, are very Gothic in their character, more so than in those to which I should assign a later date, where the pattern or system of panelling is formed in great measure of bands crossing one over another diagonally. I will not, however, say that this method of ornament is not used in earlier work. I have not made any sketches of panelling, but photographs which show it are easily to be obtained. I believe the style which I look upon as corresponding with our Decorated must have lasted pretty nearly to the end of the fifteenth century, and after this a style came on, reminding us (though still without much actual resemblance) of Late Perpendicular. The arches have a sharper curve at the haunch, and the lines are more nearly straight as they approach the point. The trefoil-headed doorway still remains. The dome is often boldly ribbed, is more stilted, and has a less elegant outline. The round or slightly pointed arch is more rare, and I think in Cairo the horse-shoe arch is not much used in late work. We find good Mahometan work down to a very modern date ; indeed I suppose the style could hardly now be called extinct.

In Constantinople there are of course no mosques (built as such) earlier than about the middle of the fifteenth century ; but two centuries after that, or even later, a good style prevailed, independent of the classical element which was introduced into the more modern buildings. The minaret in Constantinople is a tall slender turret, round or polygonal in its horizontal section, having one or more projecting galleries, and finished with a spire. The larger mosques have several minarets ; the smaller, only a single one. They are remarkably elegant, and from their great number give the city a very striking appearance. Indeed no European city, how-

ever rich in fine buildings, has so picturesque and varied an outline. The nature of its position, perhaps, gives it an advantage in that respect over Cairo, but the latter abounds in objects of greater archæological and architectural interest, and of more intrinsic beauty. The large minaret of Sultan Hassan is a fine specimen of one kind of minaret that prevails in Cairo, that of an octagonal form. The minaret of Sultan Kalaoun is an example of the square form, which is not uncommon. The outline of some of these is so like that of many Gothic towers, that they would not be out of place if attached to a Christian church. The minarets that are round and finished with a spire, like those of Constantinople, seem late. The usual finish is a bulb-shaped cupola.

At Ramleh, between Jaffa and Jerusalem, is a minaret, which at first sight would be taken for a Christian tower of the thirteenth century. It is only on looking carefully at its details

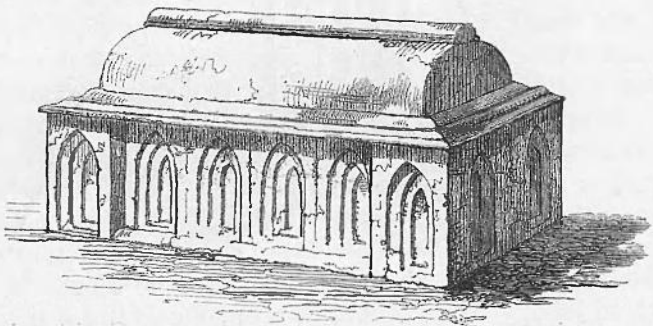


Minaret at Ramleh.

that we see its true origin. It has, like our Gothic church towers, a pair of buttresses at each angle, from which, however, the upper stages rise free. These have each a triplet of pointed arches, the lower one on shafts, very Early English in character, but the bases show the Saracenic element.

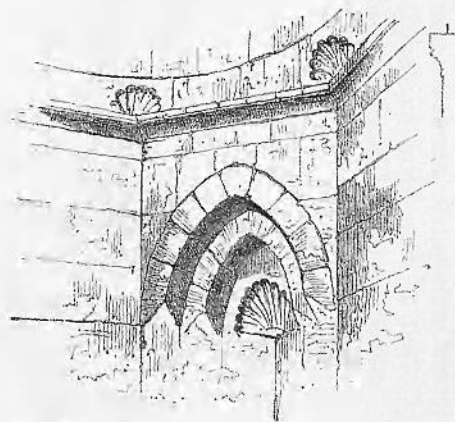
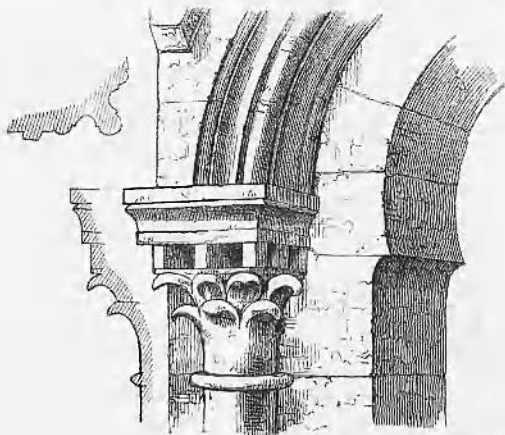
There is an inner tower which rises above the outer wall, and gives room for a staircase. This arrangement is not unknown in Europe; we see it in S. Mark's, which, however, may be considered Eastern in its character. A church near Ravenna (S. Maria ad Portum) has a Romanesque tower of this description, the inner structure rising considerably above the outer one. At Ramleh, the upper part of the internal turret is ruined, so that we cannot tell what was the finish. Over the door is an Arabic inscription. There are some remains adjoining, and extensive crypts of plain pointed work, but nothing to indicate a mosque. I suppose the date is in some part of the thirteenth century, but we must allow for the continuance of styles without material change.

In the cemetery near the Jaffa Gate of Jerusalem is a tomb of the same type with that we have mentioned as pervading the whole of the East, but valuable on account of the beauty of its composition, the care displayed in its workmanship, and the certainty of its date. It is simply a square substructure supporting a circular dome; the material is stone, and the masonry is excellent. It has a door of decidedly Gothic character, and with mouldings which in Europe would belong to the thirteenth century, attributable without doubt to the influence of the Crusaders. The other sides have small, plain, square-headed openings. The pendentives are of the Romanesque kind, consisting of a pointed arch of two square orders. In them, and at the points of change



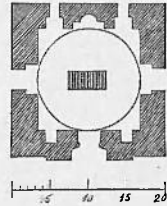
from the octagonal to the circular form, are scallop shells, having the character rather of Cinque-cento than Gothic work. The tomb in the centre of the building is oblong, with sides having a panelling of blank pointed arches and a coved

MEDIEVAL ARCHITECTURE IN THE EAST.



Tomb in the Cemetery near the Jaffa Gate, Jerusalem.

top. The doorway consists of a pointed arch, with bold early Gothic mouldings, resting on short shafts which are supported by brackets. The capital is much what we see in in early French Gothic, and the abacus is square. Within this arch is a trefoil arch of more Oriental character, but reminding one of the foliated arches we meet with in parts of France, and of which La Souterraine and Le Dorat present fine examples. The actual door is square-headed, at least has a horizontal transom. A flat arch appears above, cut in a lintel of a single stone, marked to represent keyed voussoirs. In the head of the trefoil arch is an Arabic inscription, of which I had a rubbing taken, and the translation given me contained the date 688 A.H., which corresponds with 1310 A.D. The details of which I have spoken, which are extremely pure, are such as we should naturally have assigned to an earlier date, by more than half a century.



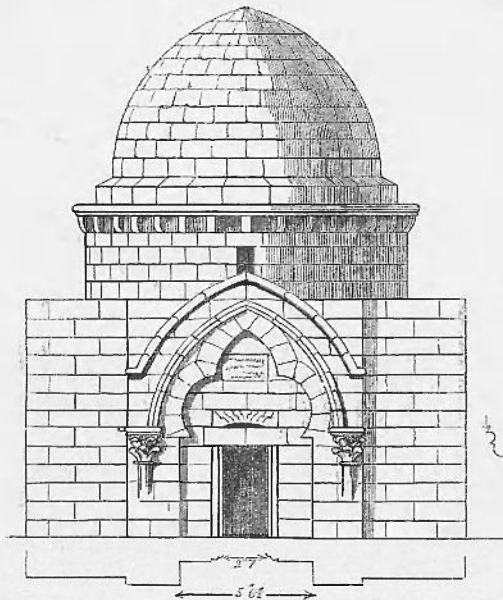
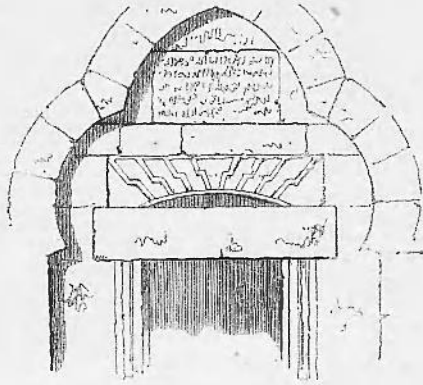
At no great distance from this is another tomb of the same type, larger in dimensions, but less elegant. Here the pendentives have pointed arches of three square orders. The sides of the building have in the interior deep blank arches, pointed, of two square orders; and on the exterior a flat



Tomb near Jerusalem.

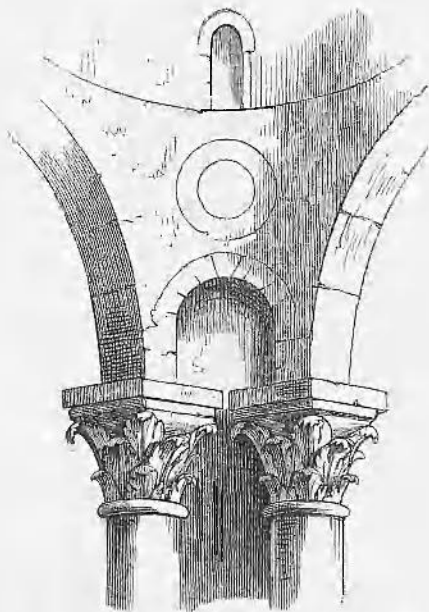
buttress on each face. Over each angle of the octagon internally, at the spring of the circular dome, is a small trefoil arch, giving that part a more Gothic air than the scallop

MEDIAEVAL ARCHITECTURE IN THE EAST.

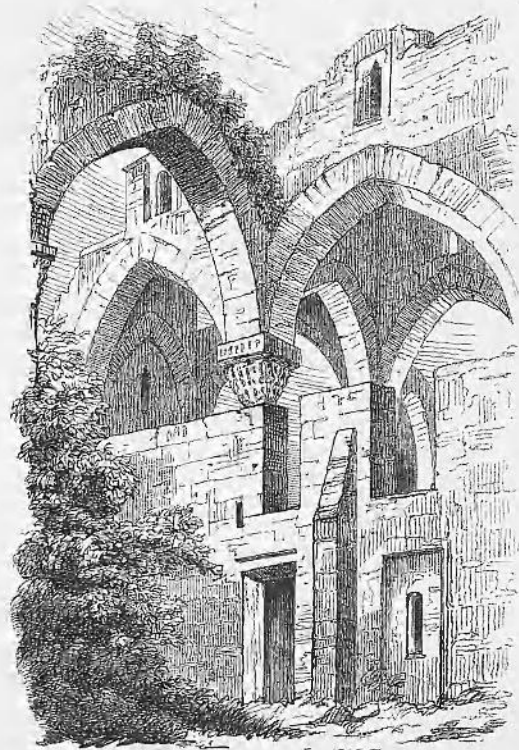


Tomb in the Cemetery, near the Jaffa Gate, Jerusalem.

MEDIEVAL ARCHITECTURE IN THE EAST.



Romanesque Pendentive, in the Akseh, Jerusalem.



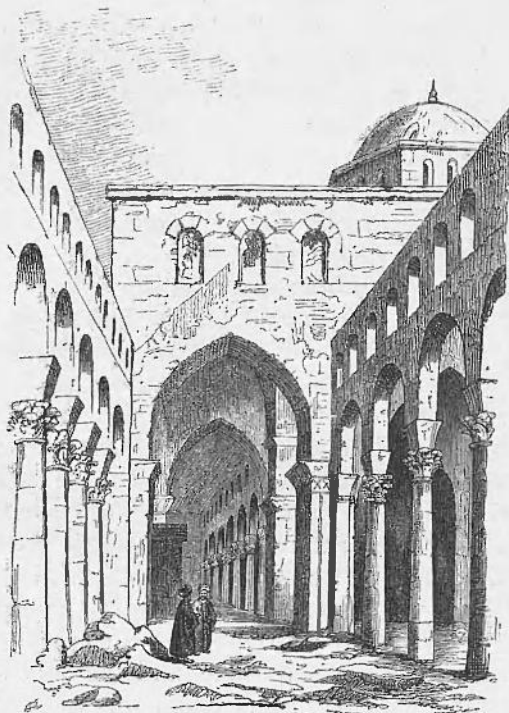
Mosque of Caliph Walid, Damascus.

of the other tomb. In the doorway are Gothic mouldings, but the Saracenic capital shows itself. It will be seen that the construction of this tomb is not unlike that of the small Byzantine churches, with solid masses at their angles. And by cutting away some of the upper part of the thick walls, a similar outline might be obtained.

I had not time to sketch any details of the mosque of Omar, called also the Dome of the Rock, or of the Akseh, in Jerusalem, and it was unfortunately a dark rainy morning when I visited them. I can only say that the effect was very impressive, and heightened by painted glass, rich and harmonious in effect, but only in patterns. As far as I could make out, the round arch prevails in the mosque of Omar ; but it was really too dark for me to note any detail, though this very gloom increased the solemnity of the effect. The Akseh is lighter, the quantity of deep-coloured glass not being quite so great. In this the arches are pointed, and much stilted. Both buildings have a very Christian character, but at that early date the two styles were nearly identical. From the plan given in Mr. Fergusson's Handbook I do not see that there is any semicircular apse ; indeed I was struck with the arrangement of the part answering to the choir or chancel, which is perfectly flat. The dome, a small circular one, is supported by four piers, each of which has engaged columns of a classical proportion, with Corinthianising capitals, and square abaci, forming a re-entering right angle, over which is a small round arch, as of a Romanesque pendentive, but above is the concave surface of a Byzantine pendentive. Mr. Fergusson, in his chronological memoranda heading the chapter, gives the date of the Akseh, 691 ; that of Caliph Walid's mosque at Damascus, 705 ; and the Tayloon mosque at Cairo, 876. In the last a Mahometan style seems to be fairly developing itself ; the other two present rather a Christian aspect, though there may be points which lead us to admit that they were from the first genuine mosques.

I was more fortunate at Damascus, for the mosque, being under repair, was more accessible, and the only impediment to my sketching with perfect freedom was the occasional fall of pieces of timber. As far as I could make out, not much mischief is meditated in the way of restoration ; I hope the authorities will be content with the repair of the roof, a wooden one of considerable pitch, covered with lead. This

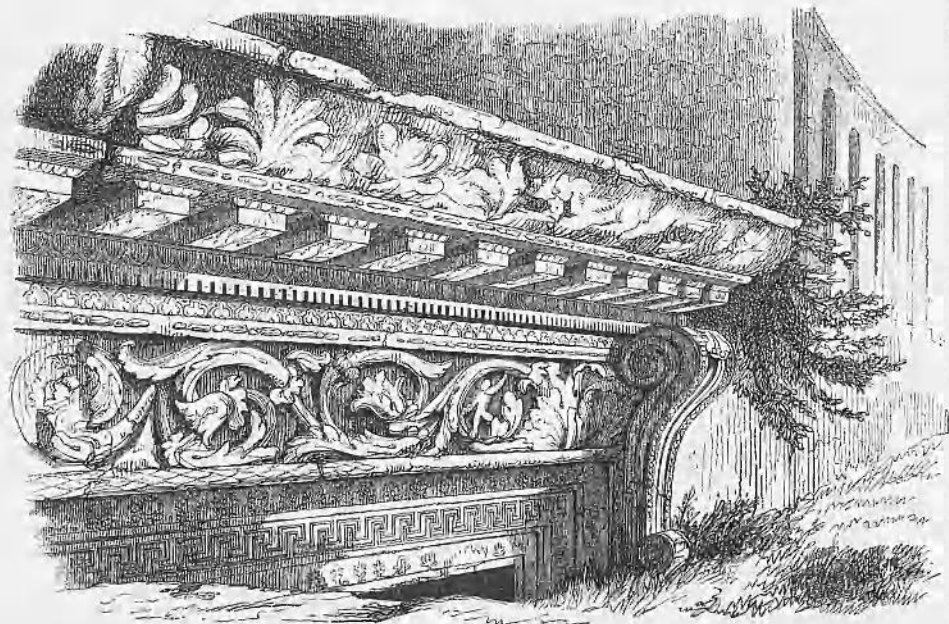
is a very puzzling structure. There is so much in the general arrangement that does not conform with our ideas of a Christian church, and so decided indications of Mahometan work in that part which is most Christian and least Mahometan in its composition, namely, the transept, that we can hardly come to any other conclusion than that the building, as it now stands, is entirely Mahometan. The enriched cornice inserted in the south wall, of late Roman date, having a Christian inscription in Greek, and some other similar remains, only prove that the mosque occupies the site of an older Christian church. It is very probable also that columns and other materials of the old church may have been used, and it may not be impossible that some of the columns still remain *in situ*. The building stands pretty well east and west, and has a nave, with north and south aisle, all of the



Great Mosque at Damascus.

same width and height. There are eleven bays or arches in each arcade, on pillars of a classical shape, with Corinthianising capital, and an abacus in the form of an inverted trun-

MEDIAEVAL ARCHITECTURE IN THE EAST.



Late Roman Cornice, South Wall of the Mosque of Caliph Walid, Damascus. From a Drawing by Miss Petit.

cated pyramid, like those at Ravenna. The arches are slightly pointed and horse-shoe, of one square order; above is a range of small round-headed arches, about double the number of the pier arches below. Those of the central aisle are entirely within the church; those on the outer walls of the aisles form windows. The transept is higher than the rest of the body, and reaches to the aisle walls, so as not to appear in the ground-plan. Over the intersection is a dome on an octagonal drum, rising little above the present transept roof, and having its sides pierced with small couplets of round-headed windows of rather a horse-shoe form; the piers below the dome are square and massive, and the arches pointed and horse-shoe. The pendentives of the dome are Romanesque. The part eastward of the transept is equal and similar to that westward, so that the north side, which forms a side of the large open court, is a symmetrical front. The entrance is through the transept, which is enriched externally with lofty arches, round-headed or nearly so, with much of the Byzantine character. The open court is of much the same character as the mosque itself, but probably later. In it is a small building, which exhibits externally some rich Mosaic work. Possibly there may be remains of



this description from which the date and original destination of the building might be inferred.

The south side, up to the bottom of the clerestory win-

dows, is hidden by houses and bazaars, but their flat roofs are accessible without difficulty, and the sketcher may work undisturbed. I rather studied the masonry, which is good, and of pretty large stones, to try if I could make out any breaks of design. There certainly are some changes in the masonry, but they did not lead me to any definite conclusion. The south transept has a low Roman pediment, behind which rises the high pitched roof, covered with lead. The front has tiers of round-headed windows, five in the upper stage and three in the lower one, which occupy a line rather higher than the clerestory. The octagon under the dome is of smaller stones.

The general view I have taken is from the wall of the castle, to which, with the help of my guide, I easily obtained access. It includes the three minarets and the outer wall of the court. The other view is the interior of the north aisle of the nave, which, being unroofed, shows part of the transept and dome.

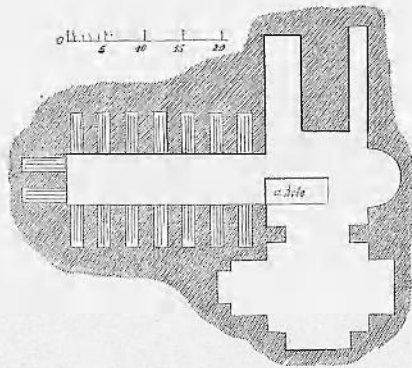
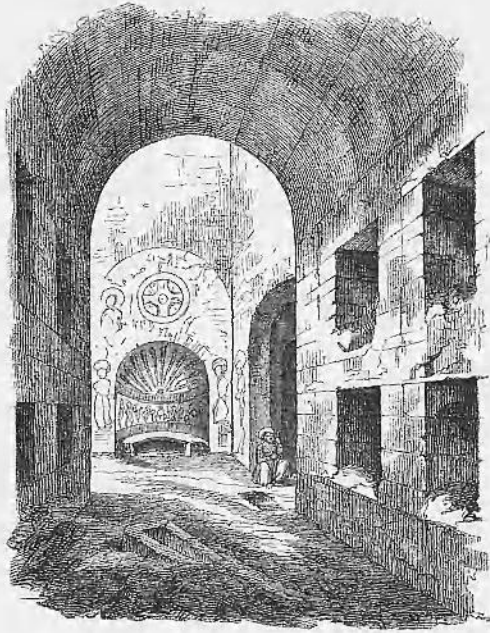
On the outskirts of the city are some tombs of the same type as those I have already mentioned. In some of these an octagon and a polygon of sixteen sides intervene between the dome itself and its square or rectangular sub-structure; others have two equal domes. On the hill from which that marvellous view, obtained by taking the rough horse-track from the beaten road, presents itself, is a tomb with four open pointed arches, above which is an octagon and dome. Its character is almost as Gothic as those near Jerusalem, of which I have spoken.

Though it does not strictly belong to my subject, I give a cut of the little circular temple at Baalbec (see the next page). I do not know that I should quite call it a gem, the arrangement of the cornice being somewhat too fanciful; still it is a pretty thing, and purer in detail than much of the work connected with the larger temples.

At Ephesus is a mosque, now disused and unroofed, which has two domes contiguous to each other, supported by the central arches of a building divided longitudinally by an arcade on columns. The arches, as well as the windows, are pointed; I did not make out any signs of great antiquity.

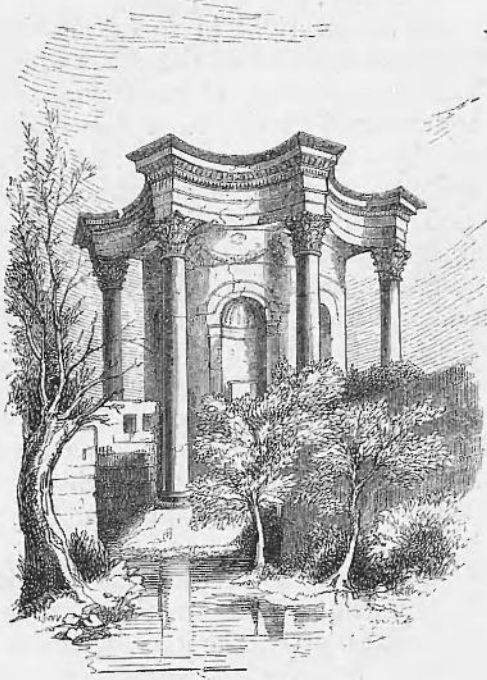
Before concluding my remarks, I may notice a subterranean church at Alexandria, cleared out, I believe within the last few years; and also some excavations called the

MEDIÆVAL ARCHITECTURE IN THE EAST.



Subterranean Church, near Pompey's Pillar, Alexandria.

catacombs, no doubt the work of early Christians. The church is cut out in a rock of not very hard or close texture, at no great distance from Pompey's Pillar. The entrance is by a flight of steps, at the bottom of which we find, on our left hand, a small semicircular apse with a kind of bench ;



Circular Temple at Baalbec.

on our right a nave cut in the rock, its roof arched, and its sides pierced with square-headed cells, evidently for the purposes of burial. Similar recesses are also cut in the end. In front is a recess forming a south transept, from which, also, smaller recesses branch out. The part corresponding with the central tower is open to the sky, preserving its square form throughout. There is no trace of architectural character which could give the slightest hint of a date. The painting in the apse is sufficiently preserved to show that its subject is the miracle of the loaves. There are also figures on some parts of the wall, or vertical surface of the rock. The written characters are so rough that I at first thought they must have been scribbled by Greek sailors, but on examining them, I saw no reason to suppose they were

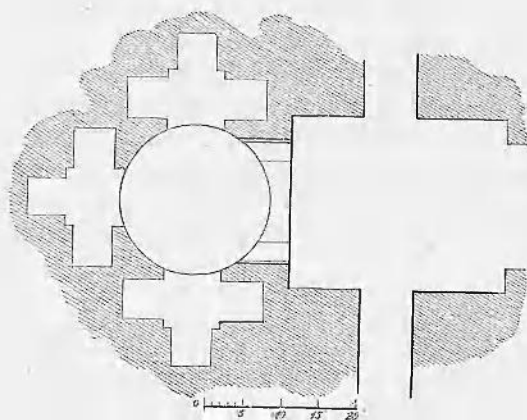
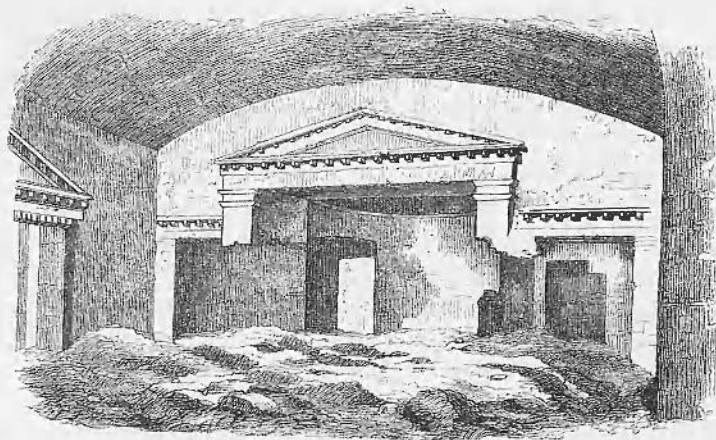
not original, and the inscriptions referred to the persons and incidents of the picture. In the central area, near what we may call the south-west pier of the intersection, is a hole sunk in the floor, about the size, shape and depth of an ordinary grave. The sketch and plan may give an idea of this underground church.

The catacombs, if I am right in so calling them, are also outside the town, among some of the rocks which form the sea coast. These are evidently of late Roman work, and are not without architectural character. After passing through an area, entered by a low opening and supported by square plain piers, and partly open upward to the sky, we come to a square-headed entrance, covered by a low pediment, the piers of which, if they may be so called, do not reach the ground, as seen in the front view. This leads into a circular space, with a domical roof, and having three recesses, corresponding in position to a chancel and a pair of transepts. These recesses are also cruciform, and in all probability have been tombs. The workmanship is clean and good; and the architectural ornaments, few and simple as they are, show some care in their execution. My sketch and plan will, I hope, in some measure, explain my very imperfect description.

I have said nothing about the Christian Gothic buildings in and round Jerusalem, which owe their origin rather to European than Oriental art. The remains of a church at Lydda; a church at Kuryet-el-Eneb (Kirjath-jearim); much of the church of the Holy Sepulchre in Jerusalem; the convent of S. Ann, near S. Stephen's Gate; a room in the building occupying the site, it is supposed, of David's tomb, and other edifices, are clearly of European character, with just as much Orientalism as appears in mediæval buildings of Sicily, and, perhaps, Spain. Some of the convents near Jerusalem may be more decidedly Oriental. Their churches are so incorporated with the conventual buildings, that little or nothing of them appears externally but the small central dome. Internally they are cruciform, have arches of one square order, pointed, with but little architectural ornament, painting being the chief enrichment. The light comes principally from the dome.

My remarks have, as I have said, been the result of very cursory and limited observations. But what little I have

MEDIAEVAL ARCHITECTURE IN THE EAST.



Early Christian Catacomb, near the sea coast, Alexandria. Late Roman Period.

seen convinces me that a wide field is open, and one that might be traversed with advantage both by the archæologist and the practical architect. We learn at least one great lesson from the Mahometan style,—namely, that architecture is independent of sculpture, since representations of the human or animal form are rarely, if ever, introduced, and of vegetable types we see little more than a very conventionalised representation. And yet the mediæval architecture of Cairo is no less noble, varied, impressive, and picturesque, than that of Caen, Nuremberg, or York. And without denying the excellence of the results produced by the combination of architecture with sculpture, I do not think we are doing justice to the former, if we do not claim for it the position of a perfectly independent art, and assert that an architectural composition of the highest order may exist without the aid of sculpture, just as a group of sculpture of the highest order may be produced and appreciated without any help from architecture.

And another thing the architect may learn, is the employment of the dome. It is true that the revived classical style, whatever may be its faults, has the merit of bringing this beautiful feature to its highest perfection ; yet, since it seems to be considered a necessity that our national style must be mediævalised ; and since the dome, whether we take into account its constructional advantages, its convenience, or its beauty, ought not to be excluded, something might be gained by the study of those edifices in which it prevailed coevally with our own golden epoch of architecture, and we might avail ourselves of many suggestions, both as to composition, construction, and ornament, which would enrich our style without too much Orientalising its character.

The Central Committee desire to renew, with special gratification, the expression of their grateful sense of the constant and most friendly liberality of Mr. Petit, by whom the whole of the illustrations of the foregoing Memoir have been presented.