

Architecture

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Part 2. Fine Arts

Chapter LV

ARCHITECTURE

A

THE FIRST THREE CENTURIES OF MUSLIM ARCHITECTURE

Arabia, at the rise of Islam, does not appear to have possessed anything worthy of the name of architecture. Only a small proportion of the population was settled and lived in dwellings which were scarcely more than hovels. Those who lived in mud-brick houses were called *ahl al-madar*, and the Bedouin, from their tents of camel's-hair cloth, *ahl al-wabar*.

The sanctuary at Mecca, in the time of the Prophet Muhammad, merely consisted of a small roofless enclosure, oblong in shape, formed by four walls a little higher than a man, built of rough stones laid dry. Within this enclosure was the sacred well of Zamzam.

When the Prophet Muhammad, as a result of the hostility of the unbelieving Meccans, migrated to Medina, he built a house for himself and his family. It consisted of an enclosure about one hundred cubits square of mud-bricks, with a portico on the south side made of palm trunks used as columns to support a roof of palm leaves and mud. Against the outer side of the east wall were built small huts (*hujarāt*) for the Prophet's wives, all opening into the courtyard.

We have the description of these huts, preserved by ibn Sa'd,¹ on the authority of a man named 'Abd Allah ibn Yazid who saw them just before they were demolished by order of al-Walid. "There were four houses of mud-bricks, with apartments partitioned off by palm branches, and five houses made of palm branches plastered with mud and not divided into rooms. Over the doors were curtains of black hair-cloth. Each curtain measured 3 × 3 cubits. One could reach the roof with the hand." Such was the house of the leader of the community at Medina.

The Dome of the Rock at Jerusalem, the oldest existing monument of Muslim architecture, was built by the Caliph 'Abd al-Malik and completed in 72/691. It was an annular building and consisted of a wooden dome, set on a high drum, pierced by sixteen windows and resting on four piers and twelve columns, placed in a circle. This circle of supports was placed in the centre of a large octagon, averaging about 20.59 m. a side, formed by eight walls, each pierced by five windows in their upper half. There was a door in each of the four sides of the octagon. The space between the circle and the octagon being too great to be conveniently spanned by single beams, an intermediate octagon was placed between the two to provide the necessary support for the roof. The two concentric ambulatories thus formed were intended for the performance of the *ṭawāf*. The piers and columns were so planned that, instead of concealing one another, they permit, from almost any position, a view right across the building. A twist of about 2½ degrees was given to the central ring of supports, with the result that an observer entering by any door can see not only the central column in front of him but also the central column on the far side. The exterior was always panelled with marble for half its height, as it is today, but the upper part was originally covered with glass mosaic (*fusaiḥṣa*) like the inner arcades. This was replaced by the present coating of faience by Sultān Sulaimān in 959/1552. The harmony of its proportions and the richness of its decoration make the Dome of the Rock one of the most beautiful buildings in the world.

The Great Mosque of Damascus.—'Abd al-Malik died in 86/705 and was succeeded by his son al-Walid, who immediately began the construction of the Great Mosque of Damascus. A curious situation had prevailed here since the conquest. A great sanctuary of a Syrian god existed here, consisting of a *temenos*, or sacred enclosure, measuring 100 m. from north to south and 150 m. from east to west, set in an outer enclosure over 300 m. square. Within the *temenos* was a temple.

In the fourth century Christianity became the State religion and Theodosius (379–395 A.D.) converted the temple into a church.² After the Arab conquest, the *temenos* was divided between Muslims and Christians. Ibn Shākir says that they both "entered by the same doorway, placed on the south side

where is now the great *mihrāb*; then the Christians turned to the west towards their church (i.e., the converted temple), and the Muslims to the right to reach their mosque, presumably under the southern colonnade of the *temenos* where is now the "*mihrāb* of the Companions of the Prophet." As for the corner towers, ibn al-Faḥīh (p. 108) says: "The minarets (*mi'dhanah*) which are in the Damascus Mosque were originally watch towers in the Greek days When al-Walid turned the whole area into a mosque, he left these in their old condition." Mas'ūdi³ says: "Then came Christianity and it became a church; then came Islam and it became a mosque. Al-Walid built it solidly and the *ṣawāmi'* (the four corner towers) were not changed. They serve for the call to prayers at the present day." This state of affairs lasted until al-Walid, after bargaining with the Christians, demolished everything except the outer walls and the corner towers and built the present mosque.

The mosque had a court (*ṣaḥn*), an oblong rectangle, surrounded on three sides by a portico. On the south side was the sanctuary nearly 136 m. in length and a little over 37 m. in depth, formed by three arcades running parallel to the south wall. A broad transept, running from north to south, cut these arcades into two nearly equal halves, each half consisting of eleven arches. Above these arcades was a second tier of small arches, there being two of these small arches to every one of the main arches below. The arched openings were filled with stucco lattices, and must be regarded as windows. The interior was adequately lit, even when the doors of the main arches next to the *ṣaḥn* were closed.

The decoration consisted of marble panelling (some parts of the original panelling exist next to the east entrance) above which ran a golden *karmah* or vine-scroll frieze, and above that was glass mosaic (*fusaiḥṣa*) right up to the ceiling. A considerable amount has survived the three fires of 462/1069, 804/1401, and 1311/1893, and may still be seen under the west portico (over 34 m. in length and nearly 7 m. high), where the famous panorama of the Bārada (the river of Damascus) is in full view. When intact the surface of the *fusaiḥṣa* must have been greater than in any building in existence! The Great Mosque of Damascus was rightly regarded by medieval Muslims as one of the seven wonders of the world. Al-Walid also enlarged and rebuilt the Great Mosque of Medina in 89/708 wherein the concave *mihrāb* appeared for the first time.

Another building due to al-Walid was the audience hall and *ḥammām*, known today as Quṣair 'Amrah, in Transjordan. It consists of an audience hall about 10 m. square, with two slightly pointed transverse arches supporting three tunnel-vaults. There is a vaulted recess on the side opposite the entrance, with a small vaulted room on either side of it. A door on the east side gives access to the *ḥammām*, which consists of three small rooms successively covered by a tunnel vault, a cross vault, and a dome. The latter was the *calidarium*, or hot chamber, and under the floor are hypocausts exactly as

¹ *Ṭabaqāt*, Vol. XLIII, p. 190.

² Malalas, *Chronographia*, pp. 344–45.

³ *Prairies*, Vol. IV, pp. 90–91.

in a Roman bath. But most remarkable of all are the paintings which cover the walls, mostly scenes from daily life, a hunting scene, and figures symbolizing history, poetry, and philosophy with the words in Greek above their heads. The dome of the *calidarium* was painted to represent the vault of heaven, with the Great Bear, the Little Bear, the signs of the Zodiac, etc. But most important of all was the painting of the enemies of Islam defeated by the Umayyads, with their names written above them in Greek and Arabic: Qaiṣar (the Byzantine Emperor), Rodorik (the Visigothic King of Spain), Chosroës, Negus (the King of Abyssinia), and two more names which have been obliterated.

Painting, contrary to the popular idea, is not forbidden by any passage in the Qur'ān, and hostility to it took proper theological form only towards the end of the second/eighth century.⁴

To sum up, the monuments of Umayyad architecture are really magnificent structures of cut stone with arcades resting on marble columns, splendidly decorated internally with marble panelling and mosaic (*fusaiḥsa*). The mosques are nearly always covered with a gable roof. The minarets were tall, square towers, derived from the church towers of pre-Muslim Syria, and the triple-aisled sanctuaries were due to the same influence. Umayyad monuments exhibit a mixture of influences, Syria occupying the first place and Persia the second, while Egyptian influence is definitely demonstrable at the end of this period at *Mushatta*. Umayyad architecture employed the following devices: the semi-circular, the horse-shoe and the pointed arch, flat arches or lintels with a semicircular relieving arch above, joggled voussoirs, tunnel-vaults in stone and brick, wooden domes, and stone domes on true spherical-triangle pendentives. The squinch does not appear to have been employed. But we know from the descriptions of early authors that a type of mosque which prevailed in Iraq had walls of bricks (sometimes of mud-bricks) and its flat timber roof rested directly on the columns without the intermediary of arches. Here we have a direct link between the ancient Persian audience-hall (*apadāna*) and the flat-roofed portico (*tālār*) of more recent Persian palaces.

At about this time the Aqsa Mosque at Jerusalem was partly rebuilt by the Caliph al-Mahdi. Recent research enables us to affirm that it then consisted of a central aisle, 11.50 m. wide, with seven aisles to right and seven to left, each about 6.15 m. in width, all covered by gable roofs and all *perpendicular* to the *qiblah* wall. There was a great wooden dome at the end of the central aisle. On the north side was a large central door with seven smaller ones to right and left, and eleven "unornamented" ones on the eastern side.

This mosque had a great influence on the Great Mosque of Cordova built in 170/786-787 by 'Abd al-Rahmān I, the last survivor of the Umayyad family.

⁴ K. A. C. Creswell, "Lawfulness of Painting in Early Islam," *Ars Islamica*, XL-XII, pp. 159-66.

It was added to on three occasions but this earliest part still exists; as at Jerusalem, the aisles, of which there are eleven, all run perpendicular to the back wall; they are all covered by parallel gable roofs, and the central one is wider than the rest. The influence of Syria in Spain at this time is not surprising, for Spain was full of Syrian refugees.

Another building of this period of great importance in the history of architecture is the Cistern of Ramlah in Palestine; it consists of a subterranean excavation 8 m. deep divided into six aisles by five arcades of four arches each, all of which are pointed and appear to be struck from two centres, varying from one-seventh to one-fifth of the span apart. And there can be no doubt about the date, for on the plaster of the vault is a Kūfic inscription of *Dhu al-Hijjah* 172/May 789. It is, therefore, centuries earlier than the earliest pointed arches in Europe.

The Arabs first set foot on the North African soil as conquerors in 19/640 under the courageous command of 'Amr ibn al-'Ās. The whole of Egypt was occupied within less than two years and ibn al-'Ās made the military camp at al-Fustāt, a site south of modern Cairo. Al-Fustāt continued to be the capital of Egypt until the Fāṭimids in 360/969 founded Cairo. 'Amr constructed a simple mosque at al-Fustāt, the first in Africa, in 20-21/641-642. Enlarged and improved under the Umayyads, this structure, in the course of time, grew into the celebrated mosque of al-Fustāt.

The mosque of 'Amr was first enlarged at the order of Caliph Mu'āwiyah in 53/673⁵ and four minarets were erected at the four corners. This was the first time that minarets were introduced in any Muslim structure.

The next major enlargement of this mosque took place during the reign of Caliph al-Māmūn in 212/827 at the hands of 'Abd Allah ibn Ṭāhir, Governor of Egypt. Since then it has been repaired and rebuilt more than once.

The mosque of 'Amr is now a big enclosure. The side walls were each pierced by twenty-two windows lighting the twenty-two aisles. There were three *mīhrābs* and seven arcades in the sanctuary; each arcade consisted of nineteen arches on twenty columns. The arcades were all braced with decorated tie-beams.

We must now speak of the great mosque of Sūsa on the gulf of Gabes, which, the inscription of its wall tells us, was built by abu al-'Abbās ibn al-Aghlab in 236/850-51. It consists of a perfectly regular rectangle measuring 49.39 m. × 57.16 m. internally, with irregular annexes to east and west. The *ṣahn*, measuring roughly 41 m. × 22.25 m., is surrounded by low arcades of slightly horse-shoe form, resting on squat T-shaped piers. There are eleven arches to north and south and six to east and west. These arches are of horse-shoe form, the maximum span of each being equal to the space between the piers below. The sanctuary consists of thirteen aisles, formed by twelve arcades of six

⁵ *Idem*, *A Short Account of Early Muslim Architecture*, Pelican Edition, London, 1958, p. 13.

arches running from north to south, each divided into six bays by other arcades running from east to west. Internally it is perfectly plain except for a splay-face moulding, immediately above which is a fine inscription frieze in simple undecorated Kūfic, the maximum height of the characters being 28 m. The frieze in which they are carved curves forward slightly to compensate for fore-shortening and thus help the observer at ground level. This is the earliest known example of this treatment, which passed into Egypt with the Fātimids and appears in the Mosque of al-Ḥākim, 380–403/990–1013.

The Great Mosque of Sāmarrā was built by the Caliph al-Mutawakkil; the work was begun in 234/848–849 and finished in Ramaḍān 237/February–March 852. It is the largest mosque ever built, for its outer walls form an immense rectangle of kiln-baked bricks measuring roughly 240 m. deep internally by 156 m. wide (proportion approximately as 3 : 2); its area, therefore, is nearly 38,000 sq. m. Only the enclosing walls have been preserved. The mosque proper was surrounded by an outer enclosure, or *ziyādah*, on the east, north, and west sides, and air photographs show that the great rectangle thus formed stood in a still greater enclosure measuring 376 m. × 444 m. The minaret, the famous Malwiyah, stands free at a distance of 27½ m. from the north wall of the mosque. There is a socle 3 m. high on which rests a spiral tower with a ramp about 2.30 m. wide, which winds round in a counterclockwise direction until it has made five complete turns. The rise for each turn is 6.10 m., but as the length of each turn is less than the previous one it follows that the slope inevitably becomes steeper and steeper. At the summit of this spiral part is a cylindrical storey, decorated with eight recesses, each set in a shallow frame. The southern niche frames a doorway at which the ramp ends; it opens on to a steep staircase, at first straight then spiral, leading to the top platform, which is 50 m. above the socle. From eight holes to be seen here Herzfeld concluded that there was probably a little pavilion on wooden columns. A few years later, between 246–247/860–861, another immense mosque was built by the same Caliph at Abu Dulaf to the north of Sāmarrā.

Ten years later, important works were carried out in the Great Mosque of Qairawān by Abu Ibrāhīm Aḥmad, who reduced the width of the central aisles by about 1.20 m. by constructing two new arcades in contact with the old ones. The arches of these arcades are pointed horse-shoe arches instead of round horse-shoe arches like those with which they are in contact. He also built three free-standing arches and one wall-arch of the same type to carry a fluted dome in front of the *mihrāb*. They rise to a height of 9.15 m. and the square thus formed is terminated above by a cornice, its top edge being 10.83 m. from the ground. On it rests the octagonal zone of transition, 2.15 m. in height, which is formed by eight semicircular arches springing from colonnettes resting on little corbels inserted in the cornice just mentioned. The drum is composed of eight arched windows and sixteen arched panels arranged in pairs between the windows. The dome, which is 5.80 m. in diameter, has twenty-four ribs, each springing from a little corbel; between the ribs are

concave segments, 30 cm. deep at the base and diminishing to nothing at the apex. The whole composition is charming. Externally the dome resembles a Cantaloup melon, with twenty-four convex ribs (corresponding to the twenty-four concave segments) which taper to nothing at the apex. Abu Ibrāhīm's work was carried out in 248/862. He also lined the *mihrāb* with a series of very beautiful carved marble panels assembled in four tiers of seven panels each, the total height being 2.70 m. He also decorated the face of the *mihrāb* and the wall surrounding it with lustre tiles about 21 cm. square. The marble panels and the tiles were imported by him from Iraq, and the latter constitute the oldest examples of lustre pottery of certain date.

It was during the reign of Aḥmad ibn Ṭūlūn (254–270/868–884), the first Muslim sovereign of independent Egypt, that Muslim architecture properly developed in the Nile Valley. He was the son of a Turkish slave and was born and brought up in Sāmarrā. He proved to be a great administrator and great builder. Al-Qatā'i, the new quarter of al-Fustāt, was adorned with magnificent buildings. He built for himself a palace which went by the name of al-Maidān as there was a vast ground in front of the palace where polo matches took place. The palace had nine gates and one of them was called Bāb al-Ṣalāt (Gate of Prayer). He also built a hospital at an expense of 60,000 dinars.

But his greatest work, which still stands, is his famous mosque; it cost him 120,000 dinars.⁶ It exhibits strong influence of the Sāmarrā school as ibn Ṭūlūn himself came from Sāmarrā and his architects and craftsmen too were mostly Iraqis.⁷ This Iraqi impact is clearly visible in the piers of the mosque and in its ornamental work in wood and stucco.

The mosque of ibn Ṭūlūn is built on the outcrop of a rock and impresses the visitor by its great size and the noble simplicity of its plan. It consists of a *ṣahn* 302 sq. ft. surrounded by *riwāqs*, five aisles deep. There are thirteen pointed arches on each side. The sanctuary is formed by five arcades of seventeen arches each. The arches are surrounded by a continuous band of ornament. Above runs a broad frieze of stucco rosettes each in an octagonal frame. The variety of designs, some composed of straight lines, others triangular, and still others circular and interlacing, is extraordinary. The windows form one of the most beautiful features of the mosque. They are 128 in number. Their pattern is a mesh of equilateral triangles by grouping six of which we can form hexagons. The minaret, which is built of hvestone, is almost a copy of the Malwiyah of Sāmarrā. About one-seventeenth of the Qur'ān is inscribed in beautiful Kūfic characters on the wooden frieze round the inside of the building just below the flat timbered roof.⁸

Ṭūlūnid Egypt could also boast of a very unusual structure; it was the palace of Aḥmad ibn Ṭūlūn's son, Khumārawaih (271–282/884–895). The walls

⁶ Ibn Khallikān, *Wafayāt al-A'yān*, Cairo, 1299/1881, Vol. I, p. 97; ibn Taghribardi, *al-Nujūm al-Zāhirah fī Mulūk Miṣr w-al-Qāhirah*, Vol. II, Leiden, 1855, p. 8.

⁷ Al-Muqaffa', p. 362, quoted by Guest in *E. G. Browne Memorial Volume*, p. 171.

⁸ P. K. Hitti, *History of the Arabs*, London, 1949, p. 454.

of its golden hall were covered with gold and decorated with bas-reliefs of himself, his wives, and his songstresses.⁹ These life-size figures were carved in wood.

Under the 'Abbāsids the Hellenistic influence of Syria was replaced by the surviving influence of Sāsānian Persia, which profoundly modified the art and architecture, and this gave birth to the art of Sāmarrā, the influence of which extended to Egypt under ibn Ṭūlūn, and even Nīshāpūr and Bahraīn. In palace architecture there was a vast difference between one of the Umayyads and that of the 'Abbāsids, partly due to the adoption of Persian ideas of royalty which almost deified the king; hence elaborate throne-rooms, generally domed, for private audience, preceded by a vaulted *liwān* (or four radiating *liwāns*) for public audience. The *bait*s also were different, following the type of Qaṣr-i Shīrīn and not the Syrian type of Muṣhatta and Qaṣr al-Ṭūba. The scale was immense and axial planning was a marked feature. But all are built of brick and a great part of that basest of materials—mud-brick—hidden by thick coats of stucco. A new type of pointed arch appears—the four-centred arch. The earliest existing squinches in Islam date from this period. An important innovation was the introduction of lustre tiles, the earliest examples being those brought to Qairawān from Iraq in 248/862. Bands of inscription were usually made to stand out on a blue background. But the widespread influence of the 'Abbāsid art did not extend to Spain, where the Umayyad art, brought thither by Syrian refugees, was still full of life.

B

MUSLIM ARCHITECTURE IN LATER CENTURIES

1. Muslim Architecture in North Africa

The Fātimids.—When the Fātimids came to power in Egypt in 358/969, they built a new city north of al-Fustāṭ and called it al-Qāhirah (Cairo). Since then Cairo has always been the capital of Egypt. The great mosque of al-Azhar was also built almost at the same time (361/972). The original sections of al-Azhar, which still exist, are built in brick and have pointed arches. The minaret is of the heavy square type. The next Fātimid mosque, completed by al-Ḥākim in 403/1012, follows the al-Azhar plan and has a cupola of brickwork supported on an octagonal drum above the prayer niche. The triumph of stone over brick, initiated by al-Ḥākim, was not effected until the beginning of the sixth/twelfth century. The first appearance of corbelled niche is found in the mosque of al-Qamar (519/1125). This pillared mosque displays bold designs and austere Kūfic inscriptions.

The grandeur of Fātimid architecture may well be imagined from the

⁹ Ibn Taghribardi, *op. cit.*, Vol. II, pp. 57–58; Maqrīzi, *al-Khiṭaṭ w-al-Āthār*, Cairo, 1911, Vol. I, p. 316–17.

testimony of the massive gates of which three are extant in Cairo: Bāb Zawilah, Bāb al-Naṣr, and Bāb al-Futūḥ.¹⁰

The Mamlūks.—While the Ṭūlūnid and Fātimid architecture in Egypt was inspired by Iraq and Iran respectively, the Mamlūk monuments were influenced by the Ayyūbi school of Syria. The Mamlūks produced some of the most exquisite structures. Made of fine and durable stone, these monuments are distinguished for their strength and solidity. Their simple decorative motif assumes infinite grace.

Mamlūk monuments may be roughly divided into three categories: the *madrasah*-mosque monuments, the citadels, and the hospitals, besides other public works like canals and aqueducts. The *madrasah* type was first introduced in Egypt by Sulṭān Ṣalāḥ al-Dīn Ayyūbi of the Crusade fame. Although none of these institutions exist today, their impact may easily be noticed in the collegiate mosque of Sulṭān al-Ḥasan (748–63/1347–61).

One of the early monuments of the Mamlūk period is the Great Mosque of Baibars (658–676/1260–1277). It was built in 668/1269. Napoleon used it as a fort when he was in Egypt. Al-Malik al-Manṣūr Saif al-Dīn Qalāwūn (678–689/1279–1290), a great builder, erected a hospital connected with a *madrasah* and a mausoleum with its remarkable arabesque tracery and fine marble mosaic. This hospital, known as al-Māristān al-Manṣūri, was completed with the mosque and the attached school in 683/1284. It had special wards for segregating patients of various diseases and contained laboratories, dispensaries, baths, kitchens, and store-rooms.¹¹

His son and successor al-Nāṣir (692–740/1293–1340) surpassed him in the construction of public works. He dug a canal connecting Alexandria with the Nile employing one hundred thousand men; built an aqueduct connecting his far-famed citadel al-Qaṣr al-Ablaq (the palace of varied colours) at Cairo with the river; founded thirty mosques at various places in his kingdom; and provided for public use drinking fountains (*sabils*), baths, and schools. Inside his citadel he built a mosque the material for which was brought from 'Akka.

Another noteworthy builder among the Mamlūks was al-Nāṣir's son, Sulṭān Ḥasan, whose collegiate mosque is the most splendid example of Mamlūk architecture. It consists of a square *ṣaḥn* (central court) which is flanked by four *liwāns* (halls) forming the four arms of a cross. Perhaps these unique cruciforms were each meant for the four major schools of Muslim theology. Behind the *qiblah*-wall of this mosque is the mausoleum of Sulṭān Ḥasan which was built in 767/1363. It is surmounted by a large dome made of bricks. The pendentives are in wood. In its general appearance it seems to have been inspired by the Sulṭāniyyah tomb of Sulṭān Khuda Bandah (d. 706/1306).

During the Mamlūk period the use of brick was abandoned in minaret construction in favour of stone. The cruciform plan of school-mosque structure

¹⁰ Maqrīzi, *op. cit.*, p. 380.

¹¹ *Ibid.*, Vol. II, pp. 406–07.

was perfected. Domes, renowned for their lightness, beauty of outline, and excessively rich decoration, were constructed. Stones of different colours in alternate courses (*ablāq*) were utilized for striped masonry and decorations. Geometrical arabesques and Kūfic letterings were also profusely used.

Although the last hundred years of the Mamlūk rule are a period of decline, several impressive monuments of that period have escaped the ravages of time and turmoil. For instance, the mosque and mausoleum of Barqūq (785–800/1383–1398), the Mosque of Qā'it Bay (873–900/1468–1495), and the mosque of al-Ghauri (906–922/1500–1516). The Mosque of Qā'it Bay consists of a mosque proper, a tomb, a fountain, and a school. It is made of red and white stone and the dome is decorated with a charming network of foliage and rosette. Elaborate arabesque ornamentation does not seem to have affected its traditional vigour and virile elegance.

Qairawān.—During the reign of Caliph Mu'āwiyah, his famous general, 'Uqbah ibn Nāfi' invaded the Maghrib (the land west of Egypt) and founded the famous military city of al-Qairawān (49/670) south of Tunis. 'Uqbah built the mosque and his headquarters in the centre and grouped dwellings around them just as it had been done at other military towns of al-Kūfah, Baṣrah, and al-Fustāt.¹² The famous mosque of Qairawān, the fourth most sacred Muslim sanctuary in the world, was built several times by the successors of 'Uqbah and finally by the Aghlabid ruler, Ziadat Allah I (202–223/817–838).

The Qairawān mosque is a big oblong enclosure. The *ṣahn*, trapezoidal in shape is entirely paved with marble. The arcades on the north side rest on columns, but the others rest on rectangular piers with two friezes with standing columns attached to their front face. The sanctuary, like the Cordova mosque sanctuary, is a hall of columns. It is divided into seventeen aisles by sixteen arcades. Each of these arcades consists of seven arches. They are all of the round horse-shoe type. The *mihrāb* as well as the surrounding structure from top to bottom is constructed of white marble covered with carvings. Part of this decoration consists of inscriptions, the rest forms arabesques of various patterns. Round the *mihrāb* are exquisite columns, also made of marble. There is a fine pair of orange-red marble columns situated in front of the *mihrāb* which is actually a recess, horse-shoe in plan. It is lined with a series of marble panels, twenty-eight in number. The semi-dome has a wooden lining covered with a coating to which is applied the painted decoration consisting of vine scrolls forming loops, filled in most cases by a five-lobed vine leaf and a bunch of grapes.

The face of the *mihrāb* is decorated with lustre tiles, 139 in number.

At the northern end of the *ṣahn* stands the famous minaret in great prominence on a square base. It has three storeys all squarish or rectangular. At the top is a dome. The minaret is made of bricks. This is the oldest minaret

¹² *Ibid.*, Vol. II, p. 248.

on the African soil and is quite different from the spiral *malwiyahs* of the mosques of Sāmarrā and the mosque of ibn Ṭūlūn.

In this region of al-Maghrib is found perhaps the earliest monument of Muslim military architecture. It is known as Qal'ah Bani Ḥammād. This citadel was built by Ḥammād bin Yūsuf al-Barbari in the province of Constantine (Algeria) in 370/980. It contains a grand mosque, a reservoir, a palace, and some other constructions that were probably used for administrative purposes. The mosque contains a square minaret in the style of Qairawān but, unlike Qairawān, there are no corridors. The citadel is in ruins now.

2. Muslim Architecture in Spain

Muslim architecture in Spain is considered a great marvel of aesthetic ingenuity. The magnificent mosque and palaces, gardens and citadels, fountains and aqueducts, public baths and private dwellings that 'Abd al-Rahmān I (139–172/756–788) and his successors built at Cordova, Seville, Granada, and other cities of this westernmost outpost of Islamic culture, were unparalleled in the entire civilized world.

Spain was conquered by the Arab generals of the Umayyad Caliphs between 93/711 and 527/1132. The capital of the Spanish province of the Empire was Cordova. Soon Arab settlements, especially Syrian, sprang up everywhere. It was these Syrians whom the Governors of Cordova employed as artisans and architects for new constructions,¹³ and "the city was adorned with numerous beautiful structures."¹⁴ It is, therefore, natural that Muslim architecture in Spain mostly exhibits Syrian features.

But a systematic embellishment of Spanish towns, with exquisite structures, actually started when 'Abd al-Rahmān I founded the independent Umayyad Kingdom of Spain. This process lasted till the death of ibn Aḥmar (d. 671/1272), builder of the famous castle and palace of Alhambra.

During the reign of the Umayyad Caliphs, Cordova grew into the most magnificent city in the West. "The jewel of the world," according to a contemporary Saxon nun,¹⁵ contained one hundred and thirteen thousand homes, twenty-one suburbs, seven hundred mosques,¹⁶ and three hundred public baths.

One of the first projects of 'Abd al-Rahmān I was to build an aqueduct for the supply of pure water to the capital. He also built a wall round the city and erected for himself a palace called Munyat al-Ruṣāfah outside Cordova in imitation of the palace built by his grandfather, Caliph Hishām, in northern Syria.

'Abd al-Rahmān also laid the foundation of the great mosque of Cordova in 170/786. It was finished in a year at a cost of 80,000 dinars (£40,000).¹⁷

¹³ K. A. C. Creswell, *A Short Account of Early Muslim Architecture*, p. 227.

¹⁴ Ameer Ali, *A Short History of the Saracens*, London, 1951, p. 515.

¹⁵ P. K. Hitti, *op. cit.*, p. 527.

¹⁶ Maqqari, *Nafḥ al-Tib*, Vol. I, p. 355.

¹⁷ Ibn Adhari, p. 245, quoted by Creswell, *op. cit.*, p. 214.

It is the third largest mosque in the world covering an area of 26,500 sq. yards. It is a vast rectangle, free on all sides. Covered porticoes surround it on every side except the southern where there are seventeen arches. The sanctuary is a huge hall of nineteen aisles, the roof of which rests on eighteen arcades. It could once be entered from the street by thirteen doors. The *ṣaḥn* is surrounded by porticoes.

The sanctuary of this mosque is a forest of columns. They exhibit great variation of types. Some are smooth, others fluted, a few even have spiral flutings. The arcades too are of a remarkable design.

The mosque underwent several improvements and enlargements at the hands of successive rulers. For instance, 'Abd al-Rahmān III built a minaret 73 cubits high "measured to the highest point of the open dome pavilion. On the summit of this dome are golden and silver apples. Two were of pure gold and one of silver. Below and above each were lilies very beautifully worked out, and at the end of the span was a little golden pomegranate."¹⁸ Similarly, al-Hakam built a dome in front of the *miḥrāb* and it was decorated in gold mosaic.

Although the architectural pattern of the great mosque, with its aisles running parallel to the back wall, the horse-shoe arches, the parallel gable roofs, and the arcades round the *ṣaḥn*, show clear Syrian inspiration, the double tier of arcades are the most original features of the great mosque.

'Abd al-Rahmān III (207-238/822-852) also erected a palatial mansion and called it al-Zahrā', naming it after his wife. It stood on one of the spurs of the Sierra Morena overlooking the Guadalquivir (*Wādī al-Kabīr*). It was started in 221/836. Marble was brought from Carthage and Numidia. Columns as well as basins, with golden statues, were imported from Constantinople. It took 10,000 workmen to build it in about twenty years. The palace had four hundred rooms and apartments. The eastern hall was adorned with fountains, in which were placed golden statues of animals, set with precious stones. Water flowed through the mouth of these beautiful figures. The audience chamber was an exquisite piece of workmanship in marble and gold studded with jewels.

The seventh/thirteenth-century citadel-castle of Alhambra (the Red Palace) built by ibn Aḥmar (671/1272) in Granada is another great architectural legacy of the Muslims in Spain. It is situated on a hilly terrace on the remains of an earlier Umayyad citadel. It was enlarged and embellished by his three successors.

"This acropolis of Granada with its exquisite decoration in mosaics, stalactites and inscriptions, was conceived and constructed" on a grand scale and is without dispute "the last word in such workmanship."¹⁹ In the words of Ameer Ali, "The towers, citadels, and palaces [at Alhambra], with their light and elegant architecture, the graceful porticos and colonnades, the

¹⁸ Al-Maqqari, *op. cit.*, Vol. I, pp. 369-70.

¹⁹ P. K. Hitti, *op. cit.*, p. 595.

domes and ceilings still glowing with tints which have lost none of their original brilliancy; the airy halls, constructed to admit the perfume of the surrounding gardens; the numberless fountains over which the owners had such perfect control, that the water could be made high or low, visible or invisible at pleasure, sometimes allowed to spout in the air, at other times to spread out in fountains, and serene azure sky; the lovely arabesques, paintings and mosaics finished with such care and accuracy as to make even the smallest apartments fascinating, and illuminated in varied shades of gold, pink, light blue, and dusky purple; the lovely dados of porcelain mosaic of various figures and colours; the beautiful Hall of Lions with its cloister of a hundred and twenty-eight slender and graceful columns, its blue-and-white pavement, its harmony of scarlet, azure and gold; the arabesques glowing with colour like the pattern on a cashmere shawl, its lovely marble filagree filling in the arches, its beautiful cupolas, its famous alabaster cup in the centre; the enchanting Hall of Music, where the Court sat and listened to the music of the performers in the tribunes above; the beautiful seraglio with its delicate and graceful brass lattice work and exquisite ceilings; the lovely colouring of the stalactites in the larger halls and of the conical lining in the smaller chambers,"²⁰ made this architectural monument one of the wonders of the world.

There was another royal villa within the walls of Granada. It was called al-Generaliffe (a corruption of Jāmi'ah al-'Arif). It also was considered a marvel of beauty with fountains, groves, and flowers. The gardens were terraced in the form of an amphitheatre.

The Alcazar (al-Qaṣr) of Seville is another notable contribution of the Muslims. It was first built by a Toledo architect for the Muwaḥḥid Governor in 596-597/1199-1200. Of the many Alcazars in Cordova, Toledo, and other Spanish towns, the Seville Alcazar is the most renowned and the only one surviving. This gracefully decorated castle was till recently used as residence by the Spanish rulers. There is another Muwaḥḥid monument in Seville, the Giralda tower, which was originally the minaret of the great mosque. It was erected in 580/1184 and was decorated with cusped arcading.²¹

3. Muslim Architecture in Iran

History records that the earliest mosque in Iran was Masjid al-Thaur built at Qazwin in 81/700, but the earliest Islamic monument so far discovered in Iran is the mosque known as *Tariq Khānah* at Damghan, halfway between Teheran and Meshed. It was built between 133/750 and 170/786. According to M. Goddard, "by the harmony of its proportions and masses, it is still one of the most magnificent buildings of Islam." It was constructed on the vault system.

²⁰ Ameer Ali, *op. cit.*, pp. 567-68.

²¹ P. K. Hitti, *op. cit.*, p. 595.

Iranian buildings throughout the Muslim period were known for their exquisite domes. These domes never arose from the Roman pendentive employed by the Byzantines but from the more primitive squinch arch which spanned the angles of the square and were converted into an octagon. The earliest Muslim dome in Persia is that of Great Mosque at Qum, south of Teheran. It was built by abu Sa'dain Husain in 256/878 and was eighty feet high.

Since then three different types of domes have been built in Iran: (1) single domes, (2) true double domes, and (3) an inner dome concealed by a polyhedral tent dome or a conical roof. Single domes were popular during the Saljūq period and were direct descendants of the Sāssānian domes. The most conspicuous and representative dome of the second type may be seen over the tomb of Sulṭān Sanjar at Merv (552/1157) while the most renowned earlier example of the third type is the Gumbad-i Qābūs (398/1007).

The Gumbad-i Qābūs was built by Shams al-Ma'ālī 'Abd al-Ḥasan Qābūs, the ruler of Gurgān and Ṭabaristān in 397/1006. This mausoleum is actually a cylindrical tower with a conical top. The inside is empty, a continuous void from ground to the roof where it is domed with a tent-like cone. The total height of the tower is a little over 167 feet. It is built of burnt brick. There are two Kūfic inscriptions also, one 26 ft. 3 ins. above the ground and the other just under the corbel.

These tomb-towers hold an important place in the Saljūq architecture. They are mostly found in Adharbaijān and across the border in Qūniyah. Prominent among these are Khalifah Ghāzi at Amasia, the tomb-tower within the mosque of Sulṭān 'Alī al-Dīn at Qūniyah and the tomb-towers at Akhlāt and Kaisari.

These tomb-towers are dressed in stone. They are usually octagonal in shape with conical roofs. The exterior faces are decorated with arcading cut in high relief on the stones of the structure. Most of the tombs have four windows or portals. The interior is usually plain and the chamber is always covered by an inner dome of cut stone. Built flights of steps to these chambers are rarely found. They were entered probably by means of a ladder.

The Saljūqs concentrated mainly on the construction of mosques and it was during their reign that the basis for the standard Iranian mosque was firmly laid. Its features were: at the beginning of a longitudinal axis an *ivān* portal leads into an open court; arcades surrounding the court are interrupted by four *ivāns*, two on the longitudinal axis and two on the cross axis with prayer halls at the back of the arcades; the major *ivān* opens into a square sanctuary chamber, crowned by a dome with a *mihrāb* in the rear wall of the chamber.

The earliest Saljūq mosque containing all these elements is the small Masjid-i Jāmi' at Zauara, north-east of Ispahān, which was erected in 530/1135.

During the Saljūq period vaults over the square or rectangular bays of the

prayer hall of mosques display a considerable variety of types. In the earliest surviving Iranian mosques, the bays were covered by barrel vaults. This resulted in complication of construction at the corner angles and did not offer any opportunity for display of technical skill. The Saljūq builders replaced the barrel vaults by domical type vaults. In order to enhance the decorative quality of vaults, they built groin vaults, cloister vaults, vaults on groin squinches, vaults on triangular false pendentives, domical lantern vaults, saucer domes and flat vaults. Examples of these experiments may be seen in those areas of the Jāmi' Masjid at Ispahān which are assigned to the Saljūqs.

Surface enrichment of the Muslim architecture in Iran was of three types: brick patterns, plaster, and mosaic faience. Decorative brick-lay appeared in pre-Saljūq work, reached its maximum effectiveness under the Saljūqs, and tended to die out in the eighth/fourteenth century. Stucco was an important feature of decoration even in the earliest Muslim monuments and held its popularity throughout. Faience, first used by the Saljūqs on a large scale, developed considerably during the Il-Khānids and reached its zenith under the Timūrids and the Ṣafawids.

A number of Saljūq monuments contain *mihrābs* executed in small cut bricks. Brick-end plugs were also utilized for decorative purposes but it was stucco, and to some extent sculpture in stone, that played the most important role in the exterior and interior embellishment during the Saljūq period. The arabesque and monumental inscriptions in Kūfic and *nasta'liq* writing became an essential part of decoration. For instance, in Merv there still stand the ruins of the tomb of Sulṭān Sanjar (511-552/1117-1157) the last of the great Saljūqs, decorated on the inside with panels of fine arabesque and inscriptions, both Kūfic and *nastikh* in cut terra-cotta. One of the most beautiful Kūfic inscriptions of the Saljūq period is known from a ruined *madrasah* at Karghid in Khurāsān. It contains the name of Nizām al-Mulk, the Grand Vizier of Sulṭān Alp Arsalān (455-485/1063-1092). The Jāmi' Masjid at Qazwin, built in 509/1116, and the *mihrāb* of Imāmzādah Karrār at Buzūn (528/1134) exhibit the most developed Saljūq style of decoration in stucco and stone. The Jāmi' Masjid at Ardistan (555/1160) has three *mihrābs* rich in stucco decorations. Here several systems of arabesque are intervened or placed one above the other, the heavy or baroque arabesque in high relief usually forming the background.

Stucco was used extensively in the Saljūq era not only for the decoration of mosques, but also for that of palaces and houses of the nobles. Compositions consisted of hunting scenes and Court scenes. Occasionally, the relief of figures was so high and thick that it approached sculpture. These stucco reliefs are chiefly found in Rayy (Teheran) and Sawa.

Fifteen Saljūq monuments display, on the interior or the exterior, glazed tiles used in the inscriptions or patterns. Mosaic faience developed in Gumbad-i Kabūd at Marāghah (593/1196) reached a stage at which strips of glazed tiles were set in a plaster ground to form an elaborate strapwork pattern,

splendid calligraphic friezes of lustred faience surmounted dadoes composed of star tiles in golden brown lustre on a white ground, and *mihrābs* were executed in the same material, for instance, the famous *mihrāb* of the Maidān Mosque at Kāshār (623/1226).²² Mention may be made of Malik Shāh, a great Saljūq monarch (465–485/1072–1092) who made Ispahān, his capital, one of the most beautiful cities in Asia. He built the famous Jāmi' Mosque and for the first time introduced the tapering fluted style of tower in Iran. The finest example of this cylindrical minaret is found in Iran. It is called Mina-i 'Ali and was built by Malik Shāh. It is decorated with geometrical patterns and bands of inscriptions on glazed tiles.

Persia suffered the greatest disaster at the hands of Mongol invaders at the beginning of the seventh/thirteenth century. Merv and Nishāpūr fell to Chingiz Khān in 617/1220, and within twenty-five years the entire country was not only occupied but cities were completely burnt, buildings were totally razed to the ground and, at places, the entire population was slaughtered like animals with the result that very few buildings erected between the Arab invasion of Iran and the rise of the Il-Khān Mongols stand today.

The Mongols ruled over Iran for about 143 years (644–791/1246–1389). Hulāgu, the founder of the Mongol Empire, assumed the title of Il-Khān and made Tabriz his capital.

The first Mongol construction in Iran was an astronomical observatory built at Marāghah, the summer capital of Hulāgu Khān, at the instance of his famous minister, Naṣir al-Dīn Ṭūsī, in 678/1279.

But it was Hulāgū's successor, Arghūn, who revived the great architectural tradition of Iran. He began the construction of Arghūniyyah, a splendid suburb of Tabriz. Work was also undertaken at Sultāniyyah near Qazwīn and summer palaces were built at Ālatāgh, Manṣūriyyah, and Lar.

The Golden Age of Il-Khānid architecture was, however, ushered in by Ghāzān Khān, who embraced Islam and came to throne in 694/1295. Ghāzān was not only a great builder but was himself an architect. He designed and built Shenb, a suburb west of Tabriz, in 696/1297. The observatory was crowned with a cupola shaped to his own design.²³ He also built his lofty tomb at Shenb. It was twelve-sided in plan and had a crypt at ground level. A great mausoleum was encircled with a golden inscription. Some 14,000 workmen were employed in its construction. Besides, there was a monastery for dervishes, a Shāfi'i and Hanafi college, an academy of philosophy, a residence for the descendants of the Holy Prophet, a hospital, a palace, a library, and a splendid garden kiosk called Ardiliyyah. The tomb was the focal point of the entire built-up area. It was surrounded by gardens which were encircled by a suburb called Ghāzāniyyah. Near each of the gates of this town, which

soon rivalled Tabriz, was built a caravanserai, markets, and public baths. The name of the chief architect of Ghāzāniyyah was Tāj al-Dīn 'Ali Shāh.

Although Ghāzāniyyah is a heap of bricks today and Ghāzān's famous tomb a crumbling mound of debris, very detailed account of Ghāzān's extensive construction comes to us from the works of Rashid al-Dīn, Waṣṣāf, Ḥamd Allah Mustaufi, and Shams Kāshāni.

Ghāzān was succeeded by his illustrious brother Olejeitu (705–18/1305–18) who embraced Islam and assumed the name of Muḥammad Khuda Bandah. Olejeitu far surpassed his predecessors in architectural achievements. As a matter of fact, most renowned buildings of the Il-Khānid period belong to his reign.

Soon after he came to throne, Olejeitu ordered work at Sultāniyyah, a site near Qazwīn. Plan for this new capital was prepared by his father Arghūn but he died before it could be executed. Olejeitu built a wonderful city at Sultāniyyah. The citadel was 500 *gaz* on a side. It was protected by a wall and sixteen towers of cut stone. The principal mosque was ornamented with marble and porcelain. There were a hospital and a college also. Surrounded by twelve smaller palaces was the royal palace, a kind of high pavilion or kiosk. The entire ensemble was set in a marble-paved court.

These palaces have since disappeared but the mausoleum of Sultān Muḥammad Olejeitu Khuda Bandah still towers over the surrounding area. According to Goddard, this tomb "is certainly the finest example of known Mongol architecture, one of the most competent and typical products of Persian Muslim building and technically perhaps the most interesting."²⁴

The second most famous monument of the Il-Khānid period was the mosque in Tabriz of Tāj al-Dīn 'Ali Shāh, Olejeitu's minister. Only a very small section of this mosque exists today, but Mustaufi, writing in 736/1335, stated that the main *ivān* of this mosque was a tremendous structure. It was 30.15 m. wide, with side walls 10.40 m. thick. The height up to the vault was 25 m. The pointed arch of the *mihrāb* was supported on two columns of copper, and the *mihrāb* frame was embellished and pointed with gold and silver. According to ibn Baṭṭūtah, the open court of the mosque was paved with marble, the walls were covered with Kāshāni (faience decoration) and there was a square pool in the middle with fountains.

Mention must also be made of the largest and the most revered shrine of Imām 'Ali Ridā' at Meshed and of his sister Fāṭimah at Qum.

During the Mongol rule, two very renowned dynasties flourished in central and southern Iran: the Atabeks and the Muẓaffarids. The Atabeks were the autonomous rulers of Ars with Shīrāz as their capital and the Muẓaffarids controlled the entire region south of Teheran. Their capital was Yazd. History records that Shīrāz possessed many fine buildings constructed by the Atabeks but hardly any of these structures exists today. The Muẓaffarids seem to be

²² K. A. C. Creswell, *Persian Art*, ed. E. Denison Ross, London, 1930, p. 53.

²³ Donald N. Wilber, *The Architecture of Islamic Iran—Il-Khānid Period*, Princeton, 1955, p. 17.

²⁴ *Ibid.*, p. 139.

more fortunate in that several very famous buildings that owe their existence to these potentates are still extant in Yazd and Kirmān.

Like Iranian art in all its forms, Iranian architecture during the Il-Khānid Mongols was decorative, characterized by precision, clarity, and lucidity. However, contrary to the Saljūq period, the Il-Khānid construction places a decided emphasis upon verticality. A look at the portal of Jāmi' Masjid at Ispahān and its north-side arches, the portal of Khānqāh at Natauz, the tomb shrine at Ziārat, the niche of Bāyazid's shrine at Bistām, and Pir-i Bakrām portal proves the point. Chambers too become loftier in relation to their horizontal measurements. *Īwāns* also become narrower but higher.

The Safawid Emperor, Shāh 'Abbās the Great (995-1038/1587-1628), was one of the greatest builders Persia has ever had. He was a wonderful town-planner. His achievement in this field can be seen at Ispahān, the capital, which he built anew. The scheme included the Great Maidān surrounded by vaulted bazaars, with the portal of his mosque opening in the centre of the south side, the Ala-Qapu palace on the western side, and the avenue, over two miles long, known as the Chahār Bāgh.

Shāh 'Abbās also built the Jāmi' Masjid of Ispahān. It has four *īwāns* and a domed chamber with a *mihrāb* on the *qiblah* side. The south-east *īwān* is flanked by two halls, each with eight dome-covered bays and a *mihrāb*. The entire building including the main dome is splendidly decorated with enamelled tiles and faience mosaic.

4. Muslim Architecture in Central Asia

The starting point of Muslim architecture in Central Asia is the extant tomb in Bukhāra of Sultān Ismā'il (279-294/892-907), the founder of the Sāmānid dynasty. It is a cubical structure with a dome. Its decoration is almost entirely of brick-work. The spandrels of the central arch bear square-shaped *motifs*. The central hemispherical dome is surrounded by four small cupolas on its four corners.

Uskend in eastern Farghanah was another centre of the Sāmānids where four important monuments—one *minār* and three mausoleums—still stand. The *minār* is a tapering tower gradually diminishing in circumference as it reaches the top. It is cylindrical and fluted and has lost its top. It is the oldest specimen of its kind which later became very popular in Iran and Turkey. The decoration consists of tiles combined in geometrical patterns, the ground between them filled with small stucco leaves.

Merv was another great Muslim cultural centre in this region. The oldest monument in this town is a mosque built in 131-138/748-755. It is called the Hamadāni Masjid in memory of Hāji Yūsuf of Hamadān. Still in good condition, it is used for daily prayers.

The capital of Amir Timūr (737-807/1336-1404) was, however, Samarqand and he made it one of the most splendid cities in the East by building palaces,

mosques, and shrines there. The style of these Timūrid buildings follows Khurāsānid tradition although Chinese and Turkish motifs are also visible. They included the famous mosque of Khawājah Ahmad Yassavi constructed in 800/1397 near Samarqand. The architect of this mosque was a Persian from Ispahān. It is an enormous squarish structure, a cubic block from which rose two domes, one covering the mosque proper and the other the tomb of the saint. The second dome is melon-shaped, a characteristic of Timūrid monuments. The entrance is flanked by two towers like that of a fortress, a product of Timūr's warlike mind.

Timūr was greatly attached to Kish, his birth-place, where he built a palace which was considered a marvel by contemporary visitors. The description, given by Clavijo, the Spanish ambassador, sent to the Timūrid Court by King Henry III, shows that this palace followed the style of ancient palaces at Nimrūd and Khursābād. Its surface was completely covered with enamelled tiles like the Ishṭar Gate of Babylon.

But it was Samarqand which received Timūr's fullest attention. The most prominent building in the city is the mosque of Bibi Khānum, which Timūr built in memory of his wife in 801-808/1398-1405, with its monumental gateways and the double dome. This mosque is the first known specimen of the classical Jāmi' Mosque in Turkestan. The second masterpiece of this period is Timūr's own mausoleum at Samarqand, known as Gour-i Amīr (Amīr's grave). It was constructed by Timūr himself. It has an immense dome almost completely covered with glittering tiles. Its walls are resplendent with multi-coloured slabs which are transformed by points into beautiful mosaics forming ravishing panels. These mosaics are composed of small pieces as well as numerous Arabic and Persian inscriptions. To the right and the left arose two circular minarets. Ulugh Beg, who had inherited a passion for buildings from his grandfather, Timūr, added to this tomb a series of other buildings. He built also a grandiose portal to the shrine.

Timūr's son and successor, Mirza Shāh Rukh (807-851/1404-1447), transferred his seat of government from Samarqand to Herāt in Khurāsān. He built there a citadel surrounded by a wall with four gates. The Jāmi' Mosque of Herāt, which stood in the midst of the chief market, was the most beautiful in the whole of Khurāsān. Shāh Rukh's wife, Gauhar Shād Āqa, was also a great builder. She constructed a college at Herāt (820-840/1417-1437). Its architect was Ustād Qawwām al-Dīn of Shīrāz. The original marble slab of this college is still preserved in the Herāt museum. It is calligraphed in *thulth* style by the renowned calligraphist Ja'far Jalāl of Herāt. Besides, Herāt could boast of Muṣallāh, the mausoleum of Gauhar Shād Āqa, and the *madrasah* of Ḥusain Baiqrah.

5. Muslim Architecture in Turkey

The Muslim architecture in Turkey (Anatolia) was inaugurated by the Saljūqs in the fifth/eleventh century. During the course of 250 years of their

rule, the Saljūqs constructed many monumental buildings at Siwās, Qūniyah, Kaiseri, Erezrüm, Divriği, Karmān, and other important towns. These structures include mosques, tombs, mausoleums, palaces, castles, hospitals, caravanserais, market halls, public baths, public fountains, bridges, aqueducts, and reservoirs. Quite a few are still extant. The Saljūq architectural traditions were not only maintained by the Ottoman Turks but reached their zenith both in quality and number in the tenth/sixteenth and eleventh/seventeenth centuries.

The oldest mosque in Anatolia (fifth/eleventh century) built by the Turks is supposed to be the Ulu Cami at Siwās.²⁵ It is a rectangular structure surrounded by a wall. It has a covered portico, an open court, a flat roof with a layer of earth raised upon horizontal wooden rafters and stone pillars.

The richest and most impressive of the Saljūq mosques is the Ulu Cami at Divriği (626/1229). It has two gateways. The applique *motifs* of the northern gate are suggestive of knitted or woven design. In the middle of the mosque is an octagonal water basin and above it a dome open to the sky. Outside the exterior walls is a ground minaret and inside a hexagonal conical dome.

The Saljūq mausoleums follow the style common in *Khurāsān* and Merv—a high drum and a dome—with this difference that stone is used instead of bricks and the decoration takes the form of relief. These mausoleums are generally polygonal in shape. The polygons are joined by means of triangular surfaces to a square base resting on the ground. The roof consists of a flat dome inside and a conical structure outside. They look like a tent in stone. The tomb of *Khālifāh Ghāzi* at Amaisia is one of the oldest monuments (541/1146) and the Douer Gumbad (675/1276) is the richest one in decoration. It is a dodecagonal structure formed of blind arcades; side by side with geometrical designs we find fan-shaped palmettes and birds and lions in relief. The mausoleum of *Khudāband Khātūn* at Nigede (712/1312) contains, besides floral and geometrical ornamentation, reliefs representing birds, stags, and other animals with human heads.

No complete Saljūq palace has survived, but history records several such buildings at Alaniya, Siwās, and Qūniyah. For the pavilion and main building of the Saljūq palaces in Anatolia, the *Khurāsān* house plan, with a courtyard and four *ivāns*, served as a prototype. As a matter of fact, the same plan is followed in subsequent Ottoman palaces also—a number of pavilions (kiosks) and groups of buildings set among a succession of courtyards and gardens with ponds, the entire structure being surrounded by a wall.

There were medical schools also and these were attached to hospitals, for instance, the one at Siwās (614/1217), the largest of all Saljūq hospitals, had a medical college attached to it.

The Saljūq caravanserais, like their *madrasahs*, had strong gateways for security reasons, with the wall decoration concentrated upon them.

The Saljūq baths differ from those of Damascus in having a plan centred

on an octagon with four *ivāns*, and the washing arrangements without a common pool. The Sultān Hammām at Qūniyah gives a good idea of Saljūq baths. There are separate twin buildings for men and women. The first room to be entered is the disrobing room (*camegah*) with marble floor and a fountain in the middle. From here a passage leads to the tepidarium (*sogu kulul*) for repose and massage. Then comes the hot room (*sic alik*) a domed octagonal hall round which are recesses (*ivāns*) containing water basins and private rooms (*khalwah*).

With the downfall of the Saljūqs (654/1256), Anatolia was divided into more than a dozen independent principalities (*beyliks*) which ruled over various parts of the country for about two hundred years. They were finally overcome by the Ottoman Turks.

The Ottoman Turks ruled over Turkey for almost six hundred years (699–1342/1299–1923). During the Bursa period (699–907/1299–1501), which is also called the foundation period, the old Ulu Cami type of mosques continued to be constructed but the roofing consisted of co-ordinated domes. For instance, the Ulu Cami at Bursa, first capital of the Ottomans (745–801/1344–1399), had twenty domes and twelve piers all co-ordinated. But mosques with single domes were also built, for instance the ‘Ala al-Dīn Mosque at Bursa (726/1326) and the Green Mosque at Iznik (780/1378).

The mosque that set the pattern for the monumental mosques of the tenth/sixteenth century was that of Bāyazid II with a second half dome opposite to and in the same axis with the half dome that supported the central dome on the side of the *mihrāb*. This principle was accepted by the famous Turkish architect Koca Sinān whose masterpiece is the Sulaimāniyyah Mosque (957–964/1550–1557). The mosque of Sinān Pāsha, Ahmad Pāsha, Sokkolu Muḥammad Pāsha, Mihrimah Khātūn, and Rustam Pāsha built by Sinān follow the same style. His great masterpiece, Sebiniyyah Mosque (977–983/1569–1575) at Edirne, however, had only one dome.

In the eleventh/seventeenth century, Turkish mosque followed the style of *Shehrzādeh* Mosque (950–955/1543–1548) which was also built by Sinān. It has a central dome supported and surrounded by four half domes. This style may be seen in Sultān Ahmad’s Mosque (1018–1025/1609–1616) and the Walid Mosque.

Under the Ottomans, *madrasahs* and hospitals followed the traditional style but the mental hospital of Bāyazid II is quite original. It has separate rooms for mental patients and a communal hall of hexagon shape with dome open to the sky for psychopathical cases. At one end of the hall, there is a dais for musicians, and the acoustics are excellent.

The Ottoman mausoleums are invariably roofed with a dome. Decoration is restricted to coloured patterns, and facing of glazed tiles is applied inside instead of outside. Nearly all Ottoman Sultāns are buried in Istanbul. One of the oldest mausoleums (868/1464) there is that of Maḥmūd Pāsha, the Grand Vizier of Muḥammad the Conqueror. It is octagonal in shape with its facade of geometrically patterned tiles inlaid in stones. The tomb of Sultān

²⁵ Behcet Unsal, *Turkish Islamic Architecture*, London, 1959, p. 17.

Sulaimān the Magnificent (974/1556) is a masterpiece of ornamentation. The tombs of Salim II (982/1574) and Murād III (1003/1595) are also the finest specimens of Turkish faience ornamentation. The marble tomb of Sulṭān Ḥamīd (1203/1789) is a baroque.

Covered market is a special feature of Ottoman rulers. The covered market of Bursa has a colourful interior of stone and brick masonry; that of Edirne (821/1418) has six piers and fourteen domes. The famous market of 'Alī Pāsha at Edirne (977/1569) built by Sinān had in addition six gates. The markets built by Muḥammad the Conqueror and Sulaimān the Magnificent at Istanbul are most famous. The former has fifteen domes and two rows of four pillars and the latter has twenty domes. These two constructions, with the addition from time to time of streets, comprise the famous covered market of Istanbul. It is really a market city. It covers an area of 30,700 sq. metres and includes sixty-five streets, a square, 300 shops, 1,000 rooms, eighteen gates, eight fountains, a school, wells, and sixteen caravanserais. At the time of Sulṭān Muḥammad and Sulaimān it was mainly in wood, but after the fire in 1113/1701 it was rebuilt in brick and stone. Architecturally, however, the so-called "Egyptian Market of Istanbul," which was built in 1071/1660, is far superior. The windows in the sides of the high, sloping-roofed central portion give light at a lower level to the central passage, which forms a right angle, on either side of which are set the rows of shops, eighty-eight in all, each covered by a dome. It is a single-storeyed building except the entrance arcades. The effect of the interior is as impressive as that of a cathedral.

The earliest Ottoman palace was built at Bursa, called Bey Sarai, but no trace of this structure is found now.

The complex structure now called the Topkapi Palace (Seraglio) grew out of the subsequent additions to this palace by the Sulṭāns through the centuries. The famous Topkapi Palace remained the residence of the Ottoman Sulṭāns from the ninth/fifteenth century to the thirteenth/nineteenth century when they moved to Bosphorus. This palace was the centre of government as well as of culture. No other assemblage of buildings affords such an opportunity as this to study at one place the entire history of the Ottoman architecture. It covers 699,000 sq. metres of area, comprising five groups of apartments totalling 348 rooms, two groups of offices, eight servant quarters, ten mosques, fourteen paths, two hospitals, five schools, twelve libraries, twenty-two fountains, a fish pond and vineyard, one outer and four inner courts, and the whole assemblage is surrounded on the landside by a wall. At a time, food for 5,000 residents of the Palace was cooked at the royal kitchen.

In spite of the fact that the Topkapi Palace was not constructed and designed by any single architect, it still possesses a remarkably homogeneous character. The entire arrangement of the palace, with its ungeometrical sub-divisions and its terrace walls counteracting the steep slope of the ground, conforms admirably to present-day principles of town-planning.

It is not possible to give a full description of the palace. The third and fourth courts, however, contain most interesting buildings. The structure in which foreign envoys were received by the Sulṭān (*Arzodāsh*) is a marvel of the ninth/fifteenth-century architecture. The library of Sulṭān Aḥmad (1131/1719) is remarkable for its plan and marble facade. The Baghdad Pavilion (1048/1638) in the fourth court contains four *ivāns* and one central dome. Its terraces, facing the Bosphorus and the Golden Horn, are surmounted by a wide-caved roof supported on arcades. The walls are faced, both inside and outside, with tiles. The Pavilion of Muṣṭafa Pāsha (1116/1704) is in Rococo-Turkish style, made in wood, to serve summer requirements.

Unlike the Il-Khānid monuments of Persia and Central Asia, Turkish architecture on the whole is horizontal, not vertical. The height of Turkish buildings is much less than their length and expansion. According to Behcat Uncal, this horizontal effect gives an impression of comfort and repose. In religious buildings, solid parts predominate over the window openings. On the other hand, in secular buildings, window strips dominate the facade. The Turks avoided total symmetry in their ground plans and facades.

6. Muslim Architecture in Pakistan and India

The Muslim conquest of the Indo-Pakistan sub-continent started in 94/712 when Muḥammad bin Qāsim invaded Sind. Contemporary records show that he constructed a mosque and other buildings at Daibul, but these structures no longer exist. Recently some excavations made in southern Sind led to the discovery of certain traces of ancient monuments. But the experts have not yet come to any final conclusion with regard to the age of these structures. Suggestions have been made that the rectangular foundation excavated at Bhambor is that of the first mosque on the sub-continent built at the time of Muḥammad bin Qāsim. Similarly, no Muslim monument built before the middle of the sixth/twelfth century has so far been discovered although it is known that Multan had been an important centre of Muslim culture prior to Maḥmūd of Ghaznah's excursions. After Lahore was conquered by Maḥmūd in 393/1002 a permanent garrison of Afghān soldiers was established there.²⁶ Later on, Lahore became the capital of Maḥmūd's successors (492/1098-582/1186). It is, therefore, most probable that mosques, palaces, tombs, and other structures built by Muslim rulers of Multan, Lahore, and other small principalities in the Indus Valley between the second/eighth and the sixth/twelfth centuries suffered at the hands of invaders or were destroyed by the ravages of time. What exists today belongs to a much later period as compared with Iraq, Syria, Iran, Egypt, and Spain.

Indo-Islamic architecture, during its history of more than five centuries (545-1119/1150-1707), however, covers such a vast area and has passed

²⁶ S. M. Latif, *Lahore*, Lahore, 1956, p. 10.

through so many stages and styles that in this brief section only a passing reference can be made to them. Besides the imperial style of Delhi, which served as a model, at least eight very marked provincial styles have been noted by experts. These provincial styles belong to the West Punjab (545–725/1150–1325), Bengal (597–957/1200–1550), Jaunpūr (762–885/1360–1480), Gujrāt (700–957/1300–1550), Māndu and Mālwah (808–977/1405–1569), the Deccan (748–1206/1347–1617), Bijāpūr and Khāndesh (828–1067/1425–1656), and Kāshmir (813–1112/1410–1700). One of these styles—the Multān style in West Punjab—is even older than the imperial style of Delhi.

The earliest Muslim monument in the Indo-Pakistan sub-continent happens to be the tomb of Shāh Yūsuf Gardezi at Multan, built in 547/1152.²⁷ It is a rectangular structure with a flat roof. One of the walls has an oblong portion which is slightly projected to frame the entrance. The walls are completely encased in most colourful tiles for which Multan has always been famous. These tiles are decorated with geometrical, inscriptional, and floral motifs. The absence of domes, pillars, and arches in this modest building is very significant.

It was at Delhi that the foundations of Muslim architecture were laid on a grand scale. Soon after he made this imperial city his capital in 587/1191, Quṭub al-Dīn Aibak ordered the construction of the famous Quwwat al-Islām Mosque in 592/1196. This is the oldest mosque extant in the Indo-Pakistan sub-continent. It consists of rectangular courtyard (141 ft. × 105 ft.) surrounded by pillared cloisters. The sanctuary on the western side possessed elaborate series of aisles with shallow domed ceilings. In front of the sanctuary was placed an iron pillar brought from Mathura as a mark of victory. Three years later, an expansive arched facade was built across the entire front of the sanctuary. Its pointed arches made in red stone are magnificently carved with inscriptions and floral *motifs*. They produce the effect of loftiness and lightness as, following the contemporary north Iranian style, they are vertical in their composition.

Quṭub al-Dīn Aibak laid the foundations of another most remarkable building the same year. It was the Quṭub Minār. Although it was constructed at a time when Muslim rule in India was hardly established, it has never been surpassed in the boldness of its conception, its aesthetic composition, its exquisite execution, and its imposing effect. It is a unique monument in the entire Muslim history. The idea of this fluted and star-shaped tower was certainly borrowed from Ghaznah as well as North Iran, where the ruins of similar towers still exist. But the Quṭub Minār has surpassed all such towers. It lies outside the Quwwat al-Islām Mosque and was probably designed on the basis of Sāmarrā mosque or the mosque of ibn Ṭūlūn (second/eighth and third/ninth centuries). It is a five-storeyed building with a domical roof. The storeys diminish in height and dimension as they ascend and

are ornamented by four projecting balconies. Between these balconies there are richly sculptured and raised bands containing Arabic inscriptions. The basement contains six such bands. The lowest storey has twenty-four projecting ribs forming the flutes. They are alternately angular and circular in the first storey, only circular in the second, and angular in the third. The other two storeys are of plain marble with red-stone belts and were added later. Its tapering construction produces the effect of a height greater than the actual which is 238 ft.

A notable contribution to Muslim architecture in India was made by Sultān Shams al-Dīn Iltutmish (608–634/1211–1236) who added the famous arched screen in front of the Ajmere mosque built by his predecessor in 597/1200. These arches, seven in number, extending over 200 ft., more nearly approach the four-centred type invariably found in subsequent Muslim buildings. Each arch is surrounded by three lines of writing, the outer in Kufic, the other two in Arabic characters separated from each other by bands of carved arabesque ornament.

Another significant aspect of Muslim architecture in the seventh/thirteenth century is the construction of a large number of tombs. Famous among these are the tombs built by Iltutmish for his son at Sultān Ghari (629/1231) and for himself (633/1235) and the tomb of Sultān Balban (679/1280), in Delhi. The shrines of Shāh Baha al-Haq (661/1262), Shāh Shams al-Dīn Tabriz (675/1276), and Shāh Rukn-i 'Ālam (720/1320) at Multan also belong to the same period. The last-named shrine is one of the most impressive buildings in Pakistan. It is an octagonal structure with sloping walls having tapering turrets at the angles. Erected on an elevated plane, its total height is 115 ft. and the dome is 50 ft. wide inside. It is made in brick with bands of carved timbering sunk into the walls at intervals. The brick-work is elaborately chiselled and parts are inlaid with glazed tiles. The use of sloping walls, carved timbering sunk in them, and glazed tiles suggest the Arab-Iranian origin of Multan architecture.

The beginning of the eighth/fourteenth century brought a remarkable change in the imperial style at Delhi. This change was caused by the invasion of Central Asia and Iran by the Mongols. Bringing death and destruction in their wake, the Mongols were responsible for a large-scale migration of Turkish and Persian architects, engineers, and artisans to Delhi, and it was this group of people who built the famous 'Alā'i Darwāzah (705/1305), one of the most exquisite piece of architecture near the Quṭub Minār. The 'Alā'i Darwāzah (the Gateway of 'Ala al-Dīn Khalji) occupies a key position in the evolution of Muslim architecture in India. A mere glance at this elegant gate will show that it must have been built by expert architects, having knowledge, vision, and capacity to prepare the design in detail before it was executed. Its style is distinctive and original. The method of its walling, the shape of its arches, the system of support for the dome, and the design of surface decoration all suggest supervision of master builders.

²⁷ Percy Brown, *Indian Architecture*, Bombay, p. 34.

The main arch is a pointed horse-shoe. It is rather vertical, the width of its span being much less in proportion to its height. There are bands of inscriptions carved in white marble.

The Tughlaqs who ruled over India from 720/1320 to 816/1413 were great builders. The founder of the Tughlaq dynasty, a soldier who ruled hardly for five years (720–725/1320–1325), managed to build in this short period a fort, a palace, his own tomb, and the fortified city of Tughlaqābād. This was the first capital city founded by any Muslim monarch in India, although Sultān 'Ala al-Dīn *Khālji*, his predecessor, had also earlier planned a similar capital. Tughlaqābād, near Delhi, is now in ruins except for the tomb of the warrior king. It is a unique building as the tomb looks more like an independent fortress than a burial place. Perhaps the disturbed political conditions, on account of Mongol invasions, demanded the expediency of utilizing every building for defence purposes in times of emergency. This fortress tomb was built on a high plane. It is made in red sandstone and white marble. It has thick sloping outer walls giving the building a pyramidal appearance. Its doorway is literally a death-trap for intruders and within the courtyard there are solidly built underground vaults for hoarded wealth. The dome is pointed Tartar in shape—a style followed throughout the Muslim period in India. This pentagon produces the effect of great strength, solidity, and robustness.

The Mongol invaders could not destroy Delhi; this was done by one of her own rulers, Muḥammad Tughlaq, who moved his capital to Daulatābād in the south. Delhi became a deserted city and all its trade, art, and industry were completely ruined. Most of the artisans and architects, who could manage to escape from the Royal camp, took refuge in provincial capitals with the result that when the capital was restored by Firūz Tughlaq no more master builders were to be found in Delhi. The Royal treasury was also empty and the economic condition of the subjects had become much deteriorated. In spite of the fact that Firūz Tughlaq proved to be one of the greatest builders India has ever produced, his buildings had to be simple and unornamented, producing the effect of austere severity. Gone were the engravings and carvings, the refined decorative *motifs*, the well-finished and properly cut stone-pieces of marble and red stone, and the embellishments of the outer and inner surfaces. Instead, walls were made of rubble covered with thick layers of cement. It was the puritanical phase of architectural asceticism.

Firūz Shāh Tughlaq built four fortified cities in North India: Firūz Shāh Kotlah in Delhi, Jaunpūr, Hīṣār, and Fatehābād. Firūz Shāh's fortified citadel in Delhi was situated on the river bank. It was roughly a rectangle with rectangular courtyards, baths, tanks, gardens, palaces, barracks, a huge Jāmi' Mosque for the congregation of 10,000 persons, servant quarters, etc. The main architectural principles of palace-fort, followed by the great Mughuls at Agra, Delhi, Allahabad, and other places, had been laid down by Firūz Shāh.

Several mosques were built in Delhi by Firūz Tughlaq between 772/1370 and 777/1375, the most famous being the *Khirkī* Mosque. It is built on a

tehkānah or sub-structure of arches. It is a unique construction as it is almost a covered mosque like Saljūq mosques in Turkey, a rare phenomenon in India. The portal is for the first time reached by some flights of steps. It is entered through an arch and beamed doorway. The interior consists of cloisters formed by a series of square bays, each one roofed by a cup-shaped dome. There are three rows of such domes, each row having three constellations of nine domes each. Thus there are in all eighty-one such domes. Each corner of the rectangle is supported by a tower and a tapering round bastion.

The invasion of Timūr in 801/1398 was a major calamity for India. He not only sacked Delhi but took away with him Indian artisans to build the famous Jāmi' Mosque at Samarqand. Delhi lost its political supremacy. The rule of Sayyid and Lodhi monarchs was confined to the Gangetic basin only. And during the whole of the ninth/fifteenth century and the first quarter of the tenth/sixteenth century Delhi could boast of no architectural achievements. No palaces, no mosques, no forts, and no cities were built; only tombs were erected as memorials to the dead.

However, a significant addition in the construction of domes was made in this period. This was the introduction of double dome in India, although this style of dome-making had been practised in other Muslim countries for centuries. We find this double dome—an inner and an outer shell to raise the height of the dome without disturbing the interior plan—for the first time in the tomb of Sultān Sikandar Lodhi (924/1518).

Bengal.—The Muslim architecture of Bengal is as old as that of imperial Delhi, as Bengal was conquered by one of Qutub al-Dīn Aibak's generals in 599/1202. It soon became an independent kingdom and remained so till it was annexed by Akbar the Great in 984/1576. The Muslim monarchs of Bengal were men of fine taste and they built scores of mosques, palaces, and other structures at their capitals at Gaur and Pandua, situated only seventeen miles apart. The ruins of these monuments scattered along the entire river bank from Gaur to Pandua bear testimony to their architectural genius but nowhere have climatic and physical conditions caused greater havoc to Muslim monuments than in Bengal. As no stone was available in the vicinity, most of these buildings were constructed in bricks which could not withstand the onslaughts of heavy rains, storms, and humidity.

The oldest Muslim monument in Bengal is the multi-domed mosque at the village of Pandua. It was built in the middle of the seventh/thirteenth century. It is the oldest multi-domed mosque in the entire sub-continent. Another very significant structure erected at Pandua is the Adina Mosque (766/1364). It was the focal point of the new capital city built by Sikandar Shāh (759–791/1358–1389). The Adina Mosque, a double-storeyed structure constructed on orthodox lines, is the largest and the most impressive building in Bengal. It is as big as the Great Mosque at Damascus (705 ft. × 285 ft.). "To the spectator standing within the expansive quadrangular court of the Adina Mosque, surrounded by its seemingly endless archways, the conception

as a whole presents the appearance of the forum of some ancient classical city rather than a self-contained Muslim house of prayer, with the high-vaulted sanctuary on the western side simulating an imperial approach in the form of a majestic triumphal archway."²⁸

Around the courtyard is a screen of arches, eighty-eight in number. The roof is covered with 306 domes. The upper storey, probably a Royal Chapel, is supported on a range of arches carried by unusual pillars. These are very short but ponderous piers, abnormally thick, and square above and below. These pillars are unique in their construction and are found nowhere in India. The interior of the sanctuary hall is a superb pointed-arch vault, the earliest and the rarest example of its kind in India. The design and execution of the central niche are also most impressive. It is inscribed with delicate arabesque and calligraphic texts.

The Muslim architecture in Bengal was partly conditioned by its climate, for due to excessive rains the surface of the roof had to be curved and covered with a number of small domes. The finest examples of such curved roofs may be seen in *Chota Sona Masjid* at Gaur (899/1493) and *Qadam Rasul*. Another characteristic of Bengal monuments is their "drop" arches in which the span is greater than the radius.

Jaunpūr.—Jaunpūr was made a provincial capital by Firūz Tughlaq who built there a fort and laid the foundations of Atāla Mosque. Later on, the famous Sharqi monarchs of Jaunpūr adorned their city with mosques, tombs, palaces, and other buildings associated with an imperial capital. As a matter of fact, Jaunpūr became the cultural capital of Northern India under the Sharqi monarchs. It was called "*Shirāz of the East*." Sikandar Lodhi, the Sultān of Delhi, completely destroyed this city's Royal structures when he occupied it in 885/1480; its five mosques alone were spared. The most outstanding characteristic of these stone-built mosques is the pylon formation of their facades. Most famous among these mosques are the Atāla Mosque and the Jāmi' Masjid completed in 811/1408 and 875/1470 respectively.

The sky-high pylons of these mosques have a unique construction, the like of which is not to be found anywhere in the Muslim world. Their origin is unknown. John Terry, however, suggests that since the early Muslim rulers of Jaunpūr were Abyssinians, these pylon-like portals might have been inspired by the pylons of Pharaonic temples in the Nile Valley.²⁹

The Atāla Masjid is a very distinctive and majestic building. Although its general arrangements are conventional, its double-storeyed cloisters are very spacious, having 42 ft. across and five aisles deep.

Many of the elements found in Jaunpūr buildings were derived from the architecture of the Tughlaqs at Delhi, for instance the recessed arch with its fringe of ornamentation, the shape of the arch, and the sloping side of its

supports, the beam and brackets supporting the arches, the tapering turrets, the square shafts of the pillars, and the imposing flights of steps leading to the portals, all suggest that artisans trained in the imperial style at Delhi during the eighth/fourteenth century and the beginning of the next were brought to Jaunpūr. Jaunpūr mosques show a very pleasant innovation in providing specially constructed galleries for religious needs of women. These galleries were covered with beautiful open-work screens as seen in the Lāl Darwāzah Mosque (854/1450).

Although Jaunpūr mosques do not display much refinement, they are strong, sincere, and purposeful in their character. They are good examples of bold and forceful workmanship.

Gujrāt (700-957/1300-1500).—Gujrāt presents by far the most graceful provincial style in the annals of Indian architecture. The Gujrāt style of architecture, in the course of two hundred and fifty years of Muslim rule, passed through three marked stages: the formative and experimental stage well represented by the Jāmi' Masjid at Cambay (725/1325); the middle stage of increased assurance and directional authority, the best and most consummate illustration of which may be found in the Jāmi' Masjid at Ahmedabad; and the final stage when it reached its zenith in the later half of the ninth/fifteenth century under the patronage of Maḥmūd Begarha I (863-917/1458-1511), the typical example being that of the Jāmi' Masjid at Champaner.

In the Cambay mosque, though much was borrowed from the Delhi style of Khalji period and also from the Ajmere mosque, its fine proportions, dignified appearance, and simple design provided a model for subsequent mosques in Gujrāt.

The second phase owes its existence to Aḥmad Shāh, the great builder, who founded the capital city of Ahmedabad (814/1411). His zeal for building projects was matched by that of his courtiers and successors, so much so that few cities can claim to possess larger numbers and finer specimens of monumental architecture than the capital of the Aḥmad Shāhi dynasty. Besides, many tombs and other structures, one can count more than fifty mosques of that period in Ahmedabad alone. Aḥmad Shāh's citadel with its palace is situated on the left bank of the river Sabarmati. It is a rectangular enclosure occupying a prominent position. Almost in the heart of the town was built the great Jāmi' Masjid connected with the citadel by a wide avenue. Astride this avenue was erected a stately triumphal gateway called the Tin Darwāzah as it possessed three arched entrances. The entire conception was a bold attempt at town-planning not usually found in provincial towns.

The Jāmi' Masjid of Ahmedabad is considered the high-water mark of mosque design in Western India. In its sanctuary have been combined two different facade conventions, the screen of arches on the one hand and the pillared portico on the other. Thus a subtle contrast between the volume and strength of the wall surface and the depth and lightness of the colonnade has been achieved.

²⁸ *Ibid.*, p. 37.

²⁹ John Terry, *The Charm of Indo-Islamic Architecture*, London, 1955, p. 12.

In the reign of Muḥammad Shāh (846-855/1442-1451), son and successor of Ahmad Shāh, Sarkhaj, a suburb of Ahmedabad, acquired great importance as the burial-place of a divine. Here palaces, gardens, pavilions, gateways, and a large artificial lake, besides mosques and mausoleums, were erected on a grand scale.

The Gujrāt architecture attained its third and final stage during the reign of Maḥmūd Begarha I. He founded three cities, and adorned them with imposing buildings. Moreover, splendid constructions were added to the glory of Ahmedabad. Most of these were mausoleums, four of which are the Raudahs (tombs) of Sayyid 'Uṭhmān at Usmanpur, of Shaikh Ahmad Khātu at Sarkhel, of Shāh 'Ālam, and of Mubārak Sayyid near Maḥmūdābād.

Most famous among the mosques of this period are the mosques of Miān Khān Chishti (861/1456), of Bibi Achūt Kūki (877/1472), of Maḥfūz Khān (898/1492), and finally of Sidi Sayyid which last is a notable departure from the conventional mosque design. It is composed entirely of arcades of arches; eight square piers support these to form the interior over which is laid a flat roof. The walls of the sanctuary are composed largely of perforated stone screens. For the first time the entire screen has been perforated with "palm and parasite" motif with wonderful skill and aesthetic taste.

Sultān Maḥmūd Begarha built a new capital also, at Champaner, 78 miles south-east of Ahmedabad. It was a walled citadel with palaces, a Jāmi' Mosque, and other usual constructions.

The Deccan.—The Muslim architecture of the Deccan was the product of the amalgamation of two separate trends introduced into South India from Delhi and Iran in the eighth/fourteenth century. Another notable feature of the Deccan monuments was the almost complete absence in them of any influence of the then existing South-Indian art, in spite of the fact that this territory was so rich in the Chalukyan and Dravidian temple architecture. It is surprising that, while Muslim architects of North and West India freely borrowed from the local style, their co-religionists in the South preferred not to be in any way obliged to and affected by the styles prevalent in the Deccan.

The Deccan was first conquered by Sultān 'Ala al-Din Khalji. But the first independent Muslim ruler of South India was a Persian adventurer, 'Ala al-Din Ḥasan Bahman Shāh. He had served under Sultān Muhammad Tughlaq at Daulatābād. He established the Bahmani dynasty at Gulbargah (748/1347), the fortress of which is considered a most remarkable production of military architecture. Almost carved out of a living rock, this fortress is now in ruins except for its most extraordinary Jāmi' Mosque built in 769/1367. It is one of the few Indian mosques entirely covered like the Cordova mosque. The whole area, including the courtyard, is roofed over by sixty-three small domes. Light is admitted through the side walls which are pierced by great arches. It was built by Muḥammad Rafi', a hereditary architect of Qazwīn in northern Iran, who must have been trained in the Saljūq style of covered mosques found in Turkey. Other monuments of the Bahmani

period at Gulbargah include scores of Royal tombs including the famous Haft Gumbad (seven domes).

The most unique construction in the entire history of Indian architecture is the Gulbargah market, 570 ft. long and 60 ft. wide, adorned with a range of sixty-one arches on either side supported by pillars and flanked with a block of buildings of a highly ornamental character.³⁰

The Bahmani capital was moved from Gulbargah to Bidar by Ahmad Shāh (826-840/1422-1436). It was adorned with a fortress, palaces, two mosques, and the famous college built in 877/1472 by the great scholar minister Khwājah Maḥmūd Gawān. It was a three-storeyed building with lofty towers. Its surface is almost wholly covered with glazed tiles of green, yellow, and white colour with floral and inscriptional *motifs* gracefully executed by expert hands.

But the magnificent monument of the 'Adil Shāhi rulers of Bijāpūr far excel those in other capital cities of the Deccan. In number too they are second to none; there are more than fifty mosques, twenty tombs, and nearly the same number of palaces in Bijāpūr. These were constructed within one hundred years after 957/1550. Prominent among these buildings are the Jāmi' Masjid, the most powerfully simple mosque; the Raudah of Ibrāhīm, one of the most elaborate tombs; the Gol Gumbad, a grandiose structure; and the Mihtar Mahal, the most delicate and the most refined of them all. The Gol Gumbad, the mausoleum of Muḥammad 'Adil Shāh, is considerably larger than the Pantheon in Rome, and it has the largest domical roof in existence. This huge dome is based on a circular cornice obtained through intersecting arches. This method of constructing intersecting arches, perhaps of Turkish origin, was a favourite device with Bijāpūr artisans. It was unknown in other parts of India. Besides being of great utility in dome construction, these intersecting arches produce an exceedingly aesthetic effect, those for instance in the sanctuary of the Jāmi' Masjid at Bijāpūr.

Mālwah.—The small independent State of Mālwah in Central India, lasted for about one and a half century (804-937/1401-1530). Its capital, Māndu, was situated on a plateau possessing a very picturesque view. It was adorned by Hoshang Shāh (807-839/1405-1435) and Maḥmūd Shāh I (940-974/1436-1469) with magnificent palaces, mosques, and other buildings, finest among which was the Jāmi' Masjid (858/1454). It was a multi-domed building with repeated arcades of arches forming the sanctuary.

Facing this mosque and situated on an elevated plain is the large structural complex called the Ashrafi Mahal (Palace of the Gold Mohar). It was built by Maḥmūd Shāh I. This complex consists of a college, a mausoleum, and a tower of victory.

Two other notable buildings in Māndu are the Hindola Mahal (swinging palace) and the Jahāz Mahal (ship palace). The former was built by Hoshang

³⁰ James Fergusson, *History of Indian and Eastern Architecture*, London, 1910, Vol. II, p. 266.

Shāh and is a combination of audience hall and Royal apartments. The latter was built by Maḥmūd I and is a double-storeyed building extending for some 360 ft. along the water-front of two small lakes. It is a colourful structure suggesting gaiety and entertainment.

These and other palaces and mosques of Māndu are all built in red sandstone. For decorative purposes, the builders used marble and various semi-precious stones such as jasper, agate, and coruclian which were found in the vicinity. Glazed blue and yellow tiles were also employed as panels and borders. It is, therefore, correct to say that Māndu monuments are noteworthy not for their structural qualities but for their decorative properties, in which an aesthetic colour sense takes a prominent position.

The Mughul Period (933-1119/1536-1707).—The Mughul Emperors of India were descendants of a highly cultured dynasty. Their great ancestor, Tīmūr, had embellished his capital city of Samarqand with exquisite palaces, mosques, mausoleums, and *madrasahs*. Bābur, the founder of the Mughul Empire, too was a scholar-warrior of a remarkably refined taste. In his "Memoirs" he relates that a considerable amount of construction in India was undertaken under his order, although he ruled only for five years. Two mosques attributed to him still exist—one at Panipat in East Punjab and the other at Sambhal, a town east of Delhi. They are, however, built in the traditional style.

The first construction in pure Mughul style, a combination of Persian and Indian style, was erected at Delhi in 972/1564 by Emperor Humāyūn's Queen in memory of her beloved consort. During Humāyūn's forced sojourn in Iran, she faithfully stood by him for twelve years. She must have acquired a taste for Persian architecture there. When she decided to build Humāyūn's tomb, she entrusted the task to an Iranian architect, Mirak Mirza Ghiyāth. The result was that for the first time a Persian conception was interpreted in Indian architecture. The introduction of bulbous domes, so common in Iran and Central Asia, and of arched alcoves, a complex of rooms, corridors and a vast garden surrounding the tomb was a significant landmark in Indian architecture. Added to these purely Persian innovations were certain Indian characteristics such as the fanciful kiosks with their elegant cupolas and excellent stone masonry combined with artistic marble-work. From these it is obvious that there emerged a new style under the Mongols, the origin of which can be easily traced in Humāyūn's tomb.

This style was almost perfected by Akbar the Great, who constructed numerous buildings during his long reign. He built four great fortresses: at Agra in 972/1564, at Ajmere in 978/1570, at Allahabad in 991/1583, and at Lahore at almost the same time. According to *Ā'in-i Akbari*, "there were built upwards of 500 edifices of red stone in the fine styles of Bengal and Gujrāt" in the Agra fort alone.³¹

³¹ Percy Brown, *op. cit.*, p. 100.

The most complete of these buildings is the palace called the Jahāngir Maḥal in Agra. The palace-fortress of Lahore is unique in this respect that its outer walls are decorated with glazed tiles with sport *motifs* such as elephant combats, games of polo, and hunting episodes. Figure compositions and floral devices also are found in the panels.

The most monumental achievement of Akbar is Fatehpur Sikri, his new capital city, twenty-six miles west of Agra. It is a complex of palaces, official residences, and religious buildings, so designed and executed as to form one of the most spectacular structural productions in the whole of India. These are all built in red stone. Famous among them is the Diwān-i Khāṣ (private audience hall), the Jāmi' Masjid with its Buland Darwāzah (high gate) and palaces of Queen Jodha Bā'i, Maryam Sultānah, Rājah Birbal and Hawa Maḥal. The Diwān-i Khāṣ is a rectangular hall with unique arrangements. It has a large and circular pillar in the centre, its massive capital supporting a circular platform. From this platform stone-bridges radiate along each diagonal of the hall to connect it with hanging galleries. The Emperor used to sit on the central platform and listen to discussions among scholars of different religions.

The most impressive single structure at Fatehpur Sikri is the Buland Darwāzah which was built in 979/1571 to commemorate the conquest of the Deccan. It is 134 ft. high with a further flight of steps, 42 ft. high. Across its front, the gate measures 130 ft. It serves as entrance to the Jāmi' Masjid containing the tomb of Shaikh Salim Chishti.

Emperor Akbar's son, Jahāngir, was not much interested in buildings. The only important construction undertaken during his reign was Akbar's tomb at Sikandarāh in 1022/1613. Unlike previous mausoleums, Akbar's tomb has no dome. It seems that a new group of architects were trying to evolve a style different from the one followed by the earlier Mughuls. Two more tombs were built in the same style in which the central dome was replaced by a rectangular pavilion. These were the tombs of I'timād al-Daulah built at Agra in 1036/1626 and the tomb of Jahāngir built at Lahore. Both were constructed under orders of Queen Nūr Jahān. Of these three, the tomb of I'timād al-Daulah is the most delicate and ornate piece of architecture. It is made of marble with its surface tastefully decorated with precious stones of different colours. This inlaid work is in *pictura dura* style.

The reign of the Emperor Shāh Jahān (1036-1069/1627-1658) is the golden age of Mughul architecture. While Akbar's monuments surpassed those of his predecessors in red-stone architecture, his illustrious grandson preferred the use of marble on a scale unparalleled in history. His was the age of marble and its architectural style was determined by marble forms with the result that the character of the arches had to be altered into a foliated one; white marble arcades of engrailed arches became a distinguishing feature of Shāh Jahān's buildings. The bulbous dome also got constricted at the neck and ornamental elements became curvilinear.

Shāh Jahān was almost possessed with a passion for buildings. He started

with the Agra Fort wherein he built the marble hall of Diwān-i 'Ām as soon as he ascended the throne in 1037/1627. Ten years later, the Diwān-i Khās, a hall also made of marble, was added to it. The double columns of this hall are amongst the most graceful constructions of his reign. From time to time several other palaces, pavilions, and mosques, e.g., the Khās Maḥal, the Shish Maḥal, the Muthamman Burj, the Moti Masjid, and the Naginah Masjid, were added to the complex inside the citadel.

In 1048/1638, Shāh Jahān decided to transfer his capital to Delhi where he laid the foundations of Shāh Jahānābād, a palace-fortress on the right bank of the river Jamuna. The vast, oblong complex is a city within a city. It is a well-planned enclosure and a product of the architectural genius of Shāh Jahān himself.

This citadel, made of red stone and marble, consists of four groups of buildings arranged symmetrically. The large central quadrangle contains the Diwān-i 'Ām, the two square courtyards in the form of ornamental gardens on either side, and the range of marble palaces along the riverside. These palaces include the Rang Maḥal and the Diwān-i Khās, two most lavishly ornate buildings considered to be the crowning jewels of Shāh Jahān's seraglio.

Since the citadel did not include any mosque, Shāh Jahān built the famous Jāmi' Masjid of Delhi on a site near his palace. It is erected on a lofty plinth and is one of the two largest and most famous mosques in the sub-continent, the other being the Bādshāhi Masjid of Lahore. Rectangular in shape, the Jāmi' Masjid has three entrances; the main and the most imposing entrance faces the east and much resembles Akbar's Buland Darwāzah at Fatehpur Sikri. It is made in red stone and marble. The three domes are made of marble with vertical strips of black stone inset at regular intervals.

Several noteworthy buildings were erected by Shāh Jahān and his governor at Thattah, the then capital of the province of Sind. Among these are the Jāmi' Masjid, begun in 1057/1647, and a group of tombs built on the Makli Hill by Mirza 'Isa Khān who governed Sind from 1037/1627 to 1054/1644. The Jāmi' Masjid is built of bricks decorated with glazed tiles of blue, white, and yellow colours. These tiles were cut in very small sizes, only half an inch wide; thus nearly one hundred such tiles have been used within one square foot producing a mosaic effect. The designs are chiefly geometrical, but the spandrels of the arches often show conventional floral compositions.

Since stone and wood were scarce in Sind, most of the construction was done in bricks and glazed tiles. The architectural style of Sind closely resembles that of contemporary Persia—brick-walls arcaded with Tudor-type arches, kiosks with cupolas, a "Lodhi"-style dome, and the outer surface embellished with glazed tile-work.

The greatest masterpiece of Shāh Jahān is the Tāj Maḥal (1042-1050/1632-1650), built by the Emperor in memory of his beloved Queen at Agra on the bank of the river Jamuna. This exquisite poetry in marble touches the highest pinnacle of Muslim architecture and is unsurpassed in history.

Its rhythmic proportion, its atmospheric setting, its feminine delicacy, its animated ornamentation, and its pleasing symmetry make the Tāj Maḥal one of the great wonders of the world.

While Shāh Jahān built in marble and red stone, brick and glazed tile were patronized by the nobility. The finest example of this type of buildings is the famous mosque of Wazīr Khān in Lahore. Built on conventional lines, every portion of its structure, both inside and outside, is enriched with a variegated scheme of colours either by means of floral patterns painted in tempera or panels of more conventional designs executed in lustrous glaze.

The Mughuls were very fond of landscape architecture. Nothing pleased them more than ornamental gardens, traces of which are found almost in every city where the Mughuls had lived. The most famous among these are the Shālimār Gardens and the Nishāt Bāgh of Srinagar and the Shālimār Gardens of Lahore, all three of them built by Shāh Jahān. These gardens, like most of the Mughul buildings, are almost always symmetrical and geometrical. But their rectangular terraces, kiosks, balconies, pools, fountains, and cascades present a most pleasant effect and testify to the refined taste of their originators.

The Emperor Aurangzib (1068-1119/1657-1707) was the last of the great Mughuls. Although too much occupied in political affairs of the State to indulge in constructional work, he has left a famous monument in the Bādshāhi Masjid of Lahore, the present capital of West Pakistan. Built in red stone and marble, the Bādshāhi Masjid is one of the two biggest mosques in the Indo-Pakistan sub-continent and is an imposing example of strength, solidity, and expanse.

With the death of Aurangzib in 1119/1707, the glorious chapter of Muslim architecture in this sub-continent came to an end. The decline of the Mughul Empire was so swift and the political conditions prevailing in Lahore, Delhi, and other important centres of Muslim culture so insecure and unsettled that traces of late twelfth/eighteenth-century Muslim structures are very rare.

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Chapter LVI

PAINTING

A

INTRODUCTION

It is difficult to distinguish Muslim contribution to painting from the history of Muslim painting. An assessment of Muslim contribution to this art would involve a consideration of the changing and growing attitude of Muslims towards painting and a study of the historical background which determined this attitude. Both these considerations are necessary because they imply each other; an understanding of the one without the other is bound to be inadequate and lopsided. Let us first consider the Muslim attitude towards painting.

It seems that the Muslim attitude towards painting in the early history of Islam was hostile. This was justifiable because Fine Arts had at that time an uncanny association with pagan beliefs and rituals. Painting was reminiscent of polytheism which Islam had come to fight against and destroy. Islam then needed an extraverted attitude—an attitude in which the soft and feminine qualities of artistic creation and appreciation could find little room. The social consciousness of man at that period of history did not have sufficient insight into subtle differentiation of various aspects of life. Being a facet of pagan polytheism painting was prohibited by Islam in its zeal to break idols. Profound aesthetic possibilities inherent in Islam had to lie dormant to be realized only when time was ripe for their realization, i.e., after Islam had succeeded in its mission to make monotheism an effective force in the development of human consciousness and to foster and nourish the scientific impulse so that man could become master of his history and responsible for its vicissitudes. Once this attitude was fairly established in their history, the Muslims began to pay attention to those pagan pursuits which they had neglected before and which were now shorn of their polytheistic associations. Painting was no longer the art of making images but the art of breaking images. Through painting one could now cast out the devils of one's heart and thus prepare one's soul for direct encounter with God. There was no longer any question of worshipping